

CONFLUX

JOURNAL OF EDUCATION

ISSN 2320-9305 (PRINT) ISSN 2347-5706 (ONLINE)

A PEER REVIEWED JOURNAL PUBLISHED SINCE 2013

VOLUME 12

ISSUE 2

JUNE 2024

cjoe.naspublishers.com

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Perception of Pre-service Teachers towards Blended Learning in Teaching-learning Process

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Abstract

To meet the evolving demands of modern society, blended learning is a model that combines online and offline methods of teaching and learning. Blended learning increases engagement, interaction, flexibility, and improved learning outcomes. The policy documents NEP-2020 and the University Grants Commission's circular emphasize the importance of blended learning in creating engaging and challenging learning experiences, highlighting the need for technology integration and teacher empowerment. This study explores the perceptions of pre-service teachers towards blended learning and aims to identify the benefits and challenges associated with this approach. Descriptive research was conducted, and the sample includes 50 final-year B.Ed. (general) pre-service teachers of the Department of Teacher Training & Non-Formal Education, Jamia Millia Islamia. The researcher developed a questionnaire with the help of related literature on the benefits, and challenges of blended learning and collected the data through a Google Form questionnaire. The major findings for the benefits of blended learning perceived by pre-service teachers include enhanced engagement, personalized learning experiences, and cost-effectiveness. However, challenges related to limited access to technology, technical glitches, and maintaining strong student-teacher relationships were identified. This research paper underscores the significance of blended learning in teacher education programs

and provides valuable insights for educators, institutions, and policymakers. Future research can explore additional perspectives, including a larger sample size, and examine the long-term effects of blended learning on teacher development and practices.

Introduction

In the educational context of today, we live in the digital age, which engages information technology, allowing us to communicate remotely and promoting social advancement in a connected and interconnected world. The use of digital technologies and the growth of the Internet have undoubtedly led to a shift in educational techniques. When it comes to higher education and university studies, this effect is much more significant (Saboowala & Manghirmalani-Mishra, 2020).

The requirements of modern society and our learning environment have significantly changed compared to the past. To meet the changing demands of students study programs that are different from the conventional in-person methodologies, such as blended learning, have been developed in response to the demand for immediacy. Students must actively engage in their education, working with others, interacting with peers, and having flexible access to information and resources (Hidayat et al., 2019). Information and communication technology (ICT) in education makes this possible.

Concept of Blended Learning

Blended learning is called by different terms, such as distributed learning, open and flexible learning, and hybrid learning. The arbitrary nature of blended learning reverberates in the different definitions of the term:

- Combining technologies or delivery media (Thomson, 2002).
- Combining instructional methods (Rosset, 2002).
- Combining online and face-to-face instructions (Young, 2002).

Blended learning combines various online tools with teaching methods created in natural settings or classrooms. Additionally, blended learning uses online learning activities to supplement classroom teaching instruction. Offering web-based content via e-learning blends offline sessions and online meetings.

It is one such model that incorporates both online and offline learning methods. It is a technique that was first used in the field of education more than a decade ago that combines (or blends) online learning with regular face-to-face learning techniques (Oliver & Trigwell, 2005). Graham, (2016) stated that, in the early days of blended learning, the term could mean almost any combination of technologies, pedagogies, and even job tasks. In addition, (Dau, 2016) defined blended learning as ‘the effective combination of different modes of delivery, models of teaching and styles of learning. Further, blended learning is an approach to education that blends online educational materials and opportunities for interaction online with face-to-face classroom-based learning methods. Through blended learning, students explore learning resources from the internet and not only wait for lectures and materials from the teacher as if the teacher knows everything and is the only source of learning. Blended learning provides opportunities for students to open new horizons (Nurmaya. G. et al., 2021d).

Models of Blended Learning

Blended Face-to-face Driver Model

The blended face-to-face class model is based in the classroom. However, a significant amount of classroom time has been replaced by online activities. Seat time is required for this model, while online activities supplement in-person classes; readings, quizzes, or other assessments are done online at home. This model allows students and faculty to share more high-value instructional time because class time is used for higher-order learning activities such as discussions and group projects (Concept Note 2021).

Blended Online Driver Model

Students completed the entire course through an online platform with possible teacher support. All curricula and teaching are delivered via a digital platform, and face-to-face meetings are scheduled or made available if necessary (Concept Note 2021).

The Flipped Classroom

Is an instructional model in which students learn basic subject matter knowledge before in-class meetings and then come to the classroom for active learning experiences. Research has shown that the flipped classroom model can motivate students towards active learning, improve their higher-order thinking skills, and improve their collaborative learning skills (Concept Note 2021).

The Self-blend Model

Self-blending is a program-level model. Students using this model are enrolled in an institute but take an online course in addition to face-to-face courses. A faculty member does not direct them, they can choose which course they will take online and which they will take in person. It gives freedom to students regarding what they have learned and what they have been taught in class (Concept Note 2021).

The Rotation Model

Includes coursework in which students rotate between different learning modalities; at least one of these modalities needs to be in an online medium of instruction. These rotations are based on instructors' decisions or a fixed schedule. It means attending a physical class and rotating between different modes such as individual/group activity, individual tutoring, and pencil-and-paper assignments, one of which is at least done online (Concept Note 2021).

Review of Related Literature

Hirata & Hirata (2017) found that most students preferred online learning to offline classes and felt that the combination of online learning and face-to-face learning was advantageous for learners. Further, blended learning allows for a range of teaching and learning practices to be combined for a customized learning experience even for diverse learning needs and different formats. Additionally, (Al Murshidi & Al Zaabi, 2018) found that a high level of digital awareness among learners and their good access to tools; technology, and experience make them capable of studying in blended-learning or e-learning mode. Garrison and Vaughan

(2008) found that blended learning to be essential for student learning as a single method or learning environment would be sufficient for all students in any particular subject.

According to a few pieces of literature, the benefits of blended courses can allow students to study at their own pace (Linder, 2023), improve student learning outcomes, increase student engagement (Baepler, Walker, & Driessen, 2014), and increase student satisfaction (Pardede, 2019). Blended learning represents a switch from passive to active learning. This involves putting learners in situations that compel them to read, speak, listen, and think. It offers learners the opportunity to work together in collaboration (Baepler et al., 2014).

In previous studies, some challenges posed a threat to constructing well-established blended learning settings because of infrastructure problems, connection failure, slow internet access (Ketsman, 2019), lack of personal computers, and anxiety in pre-service teachers due to the substantial importance of ICT skills in blended learning (Güler and Şahin 2016). Pre-service teachers may experience difficulty with integrating technology into learning and teaching processes which are associated with their low level of ICT knowledge and lack of appropriate software and materials in classrooms (Kemaloglu & BAYYURT, 2022). Being heavily dependent on the Internet to use technological resources and tools is critical for blended learning (Al-Hadhoud, et al., 2017).

Need for the Study

The educational environment is changing very fast, because of the technological advancements of the 21st century, the extensive combination of such technologies into our culture, and widespread internet access. The rapidly changing environment should serve as a

reminder that teaching-learning methods must evolve to keep up with the times and incorporate integrated technologies into the learning model. Technology development in higher education allows educators to give online experiences for students through blended learning. Our government also recommended the enhancement of technology in education. NEP-2020 stresses promoting digital learning in education. In this regard, the University Grant Commission (UGC) issued a public notice about deploying blended learning in universities (dated 20th May 2021). Its concept note on “Blended Mode of Teaching and Learning” has recommended blended learning, under which up to 40 percent of a course will be taught online and the rest 60 percent through face-to-face, offline methods in all higher education institutions. Moreover, Universities usually have three steps in integrating blended learning; awareness, adoption, and mature implementation. However, most universities are still at the awareness and adoption levels (Woodfield, 2013). At these levels, universities focus on exploring strategies to utilize blended learning, supported by new policies and practices (Porter, 2014).

After a literature review of the benefits and challenges of blended learning. The researcher aims to study the benefits and challenges of pre-service teachers towards blended learning. This research paper needs to elicit the perception of a blended learning environment based on pre-service teachers' experiences about benefits and challenges, etc.

Research Objectives

1. To study the benefits of blended learning as perceived by pre-service teachers.
2. To study the challenges of blended learning as perceived by pre-service teachers.

Research Methodology

The paper is qualitative with a descriptive research design. The research was conducted through the survey method to collect data on pre-service teachers' perceptions towards blended learning mode. A sample of 50 pre-service teachers was selected on a convenience basis and enrolled in the B.Ed. (final year) program of the “Department of Teacher Training & Non-Formal Education” Jamia Millia Islamia, New Delhi. The researcher developed a questionnaire with the help of related literature on the benefits, and challenges of blended learning.

Description of the Tool

A questionnaire containing 2 open-ended and 12 closed-ended questions was prepared by the researcher to study the perceptions of pre-service teachers toward blended learning. The questionnaire was designed as a Google Form.

Table 1

Questionnaire to Study Benefits and Challenges Faced by Pre-service Teachers in Blended Learning

Benefits	<ol style="list-style-type: none">1. Blended learning techniques make learning more interesting.2. Blended learning has a positive impact on your academic performance.3. Blended learning benefits you in terms of personalized learning experiences.
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4. Blended learning enhances your engagement and motivation in the classroom.
 5. Blended learning helps you address diverse learning needs and styles of learners in your future teaching.
 6. Blended learning helps you to support pedagogical approaches for your teaching in the future.
 7. Blended learning helps you in the internal assessment of your course.

Challenges

8. Access to digital tools and internet resources in a blended learning environment is difficult.
9. It is difficult to manage the technical issues that can occur with online learning tools and platforms in blended learning.
10. A blended learning environment needs more time.
11. Blended learning increases the workload for in-person and online instruction.
12. The blended learning technique is unsuitable for your practical courses.

Open-ended question

1. In your opinion, what are the benefits of blended learning?
 2. Are you attending all classes in a blended learning environment? If not, highlight your reasons.
-

-
3. In your opinion, what are the challenges you face in blended learning during your course?
-

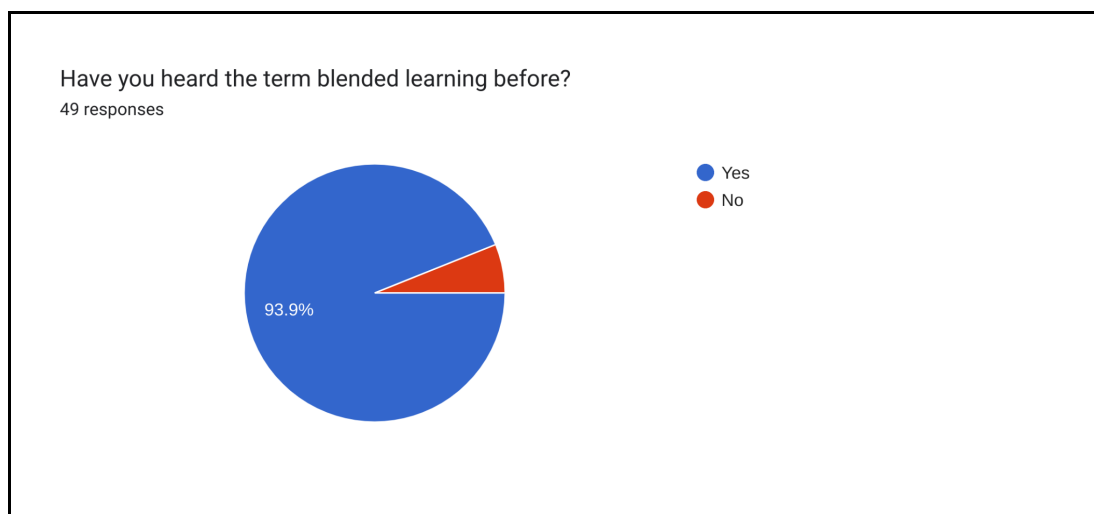
Data Analysis and Interpretation

Demographic Profile

As evident in Fig. 1, 93.9% of PST were aware of the term blended learning, and 6.1% were unaware of the term, although 49 responses out of 50 pre-service teachers were received.

Figure 1

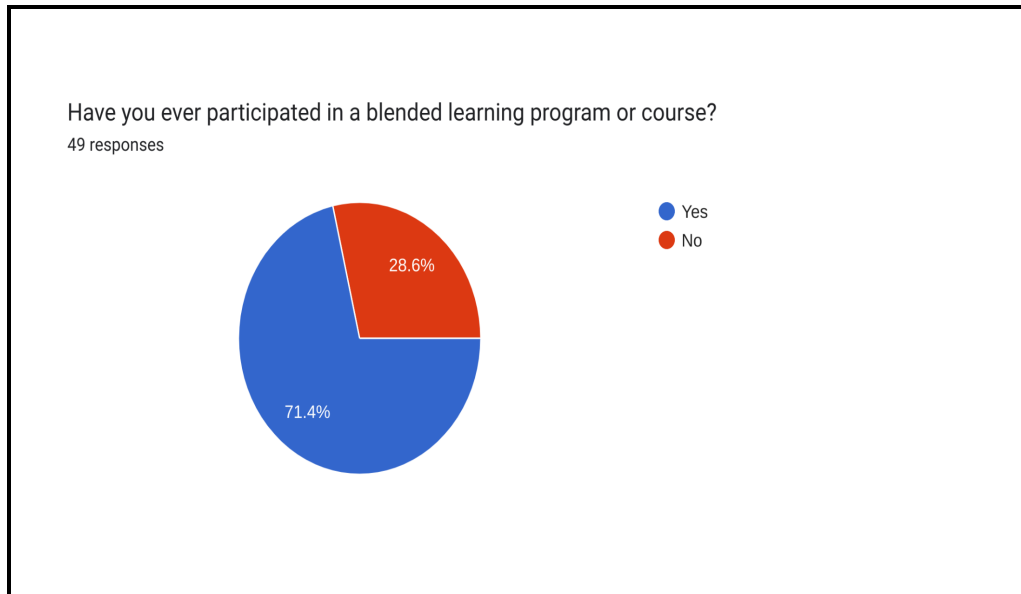
Distribution of the Respondents based on Awareness of Blended Learning



As evident in Fig. 2, although 49 responses out of 50 pre-service teachers were received, only 71.4% of preservice teachers participated in the blended learning program.

Figure 2

Distribution of Participation in Blended Learning Course



Objective 1: To study the benefits of blended learning as perceived by pre-service teachers

Table 2

Descriptive Analysis of Benefits Faced by Pre-service Teachers in Blended Learning

Sl.No.	Items	Agree	Neutral	Disagree
1	Blended learning techniques make learning more interesting.	73.4%	16.3%	10.2%
2	Blended learning has a positive impact on your academic performance.	87.8%	6.1%	6.1%

3	Blended learning benefits you in terms of personalized learning experiences.	81.6%	12.2%	6.2%
4	Blended learning enhances your engagement and motivation in the classroom.	77.5%	8.2%	14.3%
5	Blended learning helps you to address diverse learning needs and styles of learners in your future teaching.	73.5%	16.3%	10.2%
6	Blended learning helps you to support pedagogical approaches for your teaching in the future.	79.6%	10.2%	10.2%
7	Blended learning helps you with the internal assessment of your course.	83.7%	8.2%	8.1%

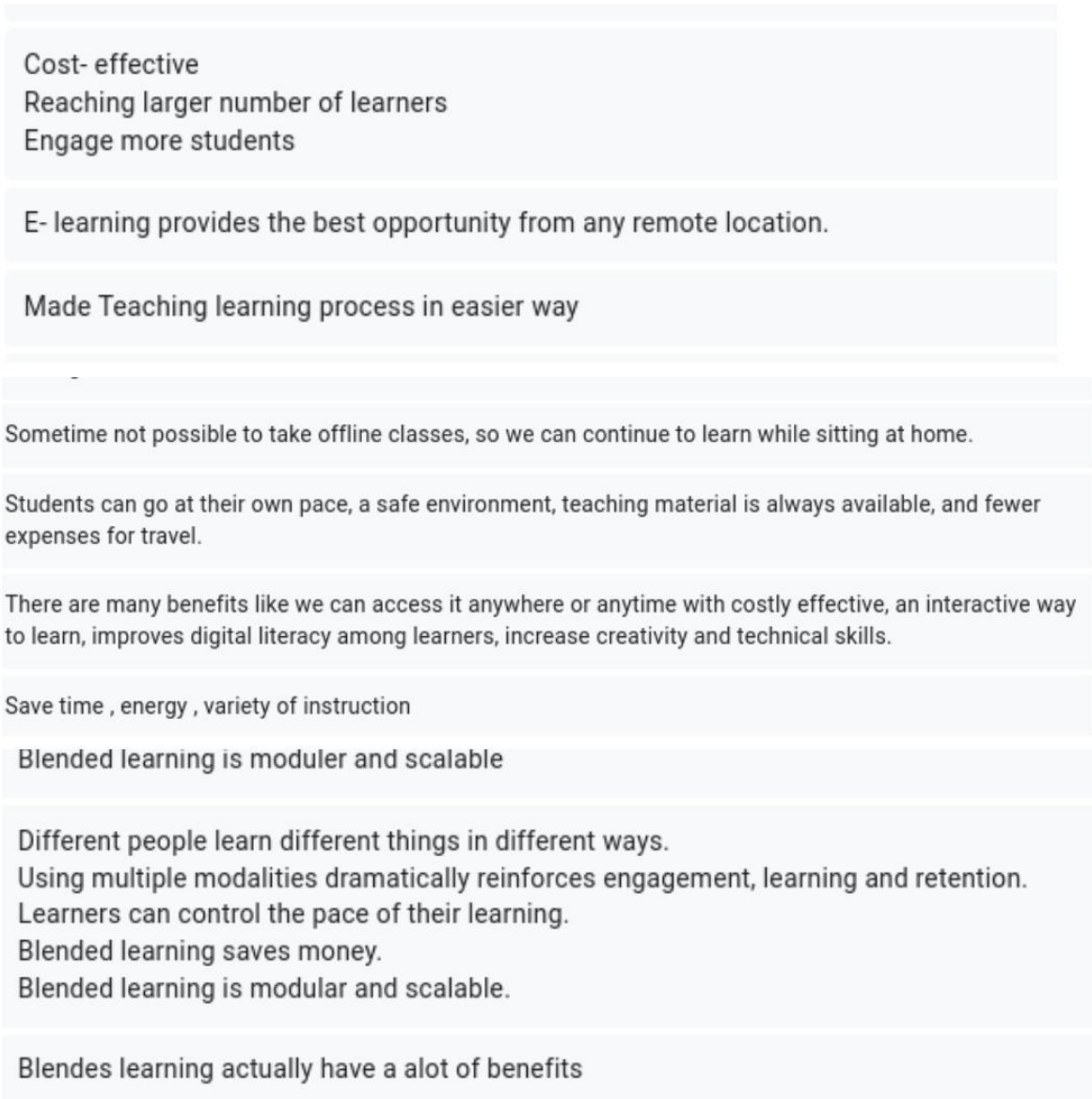
Overall, the analysis reveals various positive perceptions of blended learning. In statement 1, 73.4% of respondents express agreement that blended learning techniques contribute to making the learning experience more interesting. This suggests that the incorporation of both online and in-person elements adds variety and engages learners in a captivating manner. Furthermore, a significant majority of respondents (87.8%) believe that blended learning positively impacts academic performance, indicating that the integration of traditional and online instructional methods is perceived as beneficial for educational outcomes. Moreover, 81.6% of respondents agree that blended learning provides benefits in terms of personalized learning

experiences. This underscores the perception that blended learning allows for the customization of learning content and delivery to meet individual student needs and preferences. Statement 4 reveals that 77.5% of respondents agree that blended learning enhances their engagement and motivation in the classroom. This points to the conclusion that the integration of digital tools and online resources increases student involvement and enthusiasm for learning. Notably, these findings across the first four statements align with a study conducted by (Linder, 2023). In Statement 5, 73.5% of respondents agree that blended learning helps them address the diverse learning needs and styles of learners in their future teaching. This acknowledgment indicates the recognition of blended learning's flexibility and adaptability in catering to the individual requirements of students. This finding aligns with a previous study by Bakia & Jones (2010). Statement 6 reports that 79.6% of respondents agree that blended learning helps them support pedagogical approaches for their future teaching. This suggests that the integration of technology and online resources enhances teaching methods and instructional strategies, consistent with a previous study by Baepler et al. (2014). Furthermore, in Statement 7, 83.7% of respondents agree that blended learning assists them in the internal assessment of their course. This indicates that blended learning provides opportunities for effective evaluation and assessment of student progress within a course, consistent with a previous study by Johnson et al. (2015).

In your opinion, what are the perceived benefits of blended learning?

Figure 3

Benefits of Blended Learning



Respondents consistently highlighted various benefits of blended learning, emphasizing its flexibility and learner-centric approach. Pre-service teachers appreciated the ability to

progress at their own pace, access teaching materials anytime, and exercise greater autonomy in their learning journey. Blended learning echoed for its accessibility from any remote location, with 74% of respondents noting cost savings and 59% recognizing its cost-effective nature due to reduced travel expenses. 83% of respondents acknowledged the enhancement of classroom interactivity and interest in understanding concepts, while 72% reported an increase in creativity and technical skills, facilitated by the availability of diverse tools for concept explanation. The time and energy-saving aspect of blended learning, with 71% expressing appreciation for the flexibility it offers, and the fundamental shift it represents in instructional methods, acknowledged by 77% of respondents, were also noted. The findings underscore a widespread recognition of the benefits of blended learning, aligning with a previous study by Zafirah, H. A., Basori, B., & Maryono, D. (2021), particularly in areas such as increased student engagement, interactive classrooms, and learner autonomy.

Objective 2: To study the challenges of blended learning as perceived by pre-service teachers

Table 3

Descriptive Analysis of Challenges Faced by Pre-service Teachers in Blended Learning

Sl.No.	Items	Agree	Neutral	Disagree
1	Access to digital tools and internet resources in a blended learning environment is difficult.	46.9%	18.4%	34.7%
2	It is difficult to manage the technical issues that can occur with online learning tools and platforms in blended learning.	53.1%	30.6%	16.3%
3	Blended learning increases the workload for in-person and online instruction.	61.2%	18.4%	20.4%
4	The blended learning technique is unsuitable for your practical courses.	59.2%	16.3%	24.5%
5	Blended learning increases the workload for in-person and online instruction.	61.2%	18.4%	20.4%

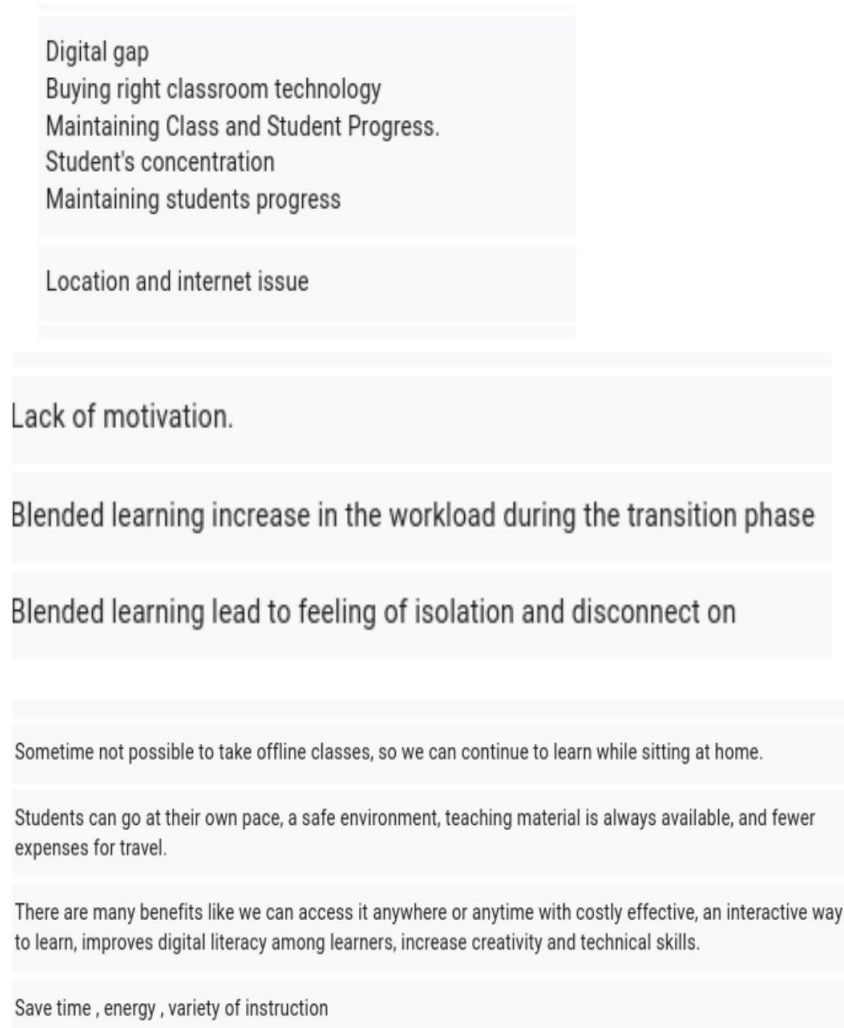
The data analysis reveals several challenges of blended learning. Nearly half of the respondents (46.9%) express difficulty in accessing digital tools and internet resources, pointing to potential obstacles related to technology access or connectivity that may impede the effectiveness of blended learning. This finding is consistent with the previous study by Yağcı et al. (2016). A majority of respondents (53.1%) acknowledge challenges in managing technical

issues with online learning tools and platforms in a blended learning setting, highlighting potential hurdles in technical support and troubleshooting that can disrupt the smooth functioning of the educational approach. This finding is consistent with the previous study by Pesen (2014). Additionally, a significant percentage of respondents (58.7%) agree that a blended learning environment demands more time, suggesting that the integration of online and in-person components may necessitate additional time commitments from both learners and instructors. Furthermore, a majority of respondents (61.2%) express concerns that blended learning increases the workload for both in-person and online instruction, implying additional responsibilities for educators and learners when managing diverse teaching modalities. Finally, a notable proportion of respondents (59.2%) believe that the blended learning technique is unsuitable for practical courses, indicating reservations about the effectiveness or feasibility of incorporating hands-on learning experiences in a blended format. These findings collectively provide insights into the multifaceted challenges associated with blended learning, encompassing issues of accessibility, technical management, time constraints, increased workload, and suitability for specific course formats. This finding is consistent with the previous study by Karakaş and Doğan (2020). Additionally, one open-ended question sought to study the challenges of blended learning in teacher education programs.

In your opinion, what are the challenges faced by preservice teachers of blended learning during your course?

Figure 4

Challenges of Blended Learning



Respondents consistently highlighted various challenges across different themes within the blended learning environment. Access and connectivity concerns centered on the digital gap, acknowledging disparities in technology and internet access among students, which can hinder learning opportunities. Issues related to location and internet connectivity underscored the challenges arising from limited or unreliable access in certain areas. Technical challenges

encompassed disruptions and malfunctions in digital tools or platforms, inadequate technical skills, and a lack of knowledge about digital tools, emphasizing the need for better understanding and training in utilizing technology for educational purposes. Student engagement and motivation issues were identified, including difficulties in maintaining focus during digital learning, decreased student-teacher connections due to limited face-to-face interaction, a lack of real-time feedback, and the potential monotony of the online or blended learning experience. The theme of training and support highlighted obstacles such as inadequate training for teachers, emphasizing the need for professional development to enhance digital teaching skills, and a lack of knowledge regarding digital tools, stressing the importance of acquiring necessary skills. Lastly, Assessment and evaluation challenges revolved around the difficulty of maintaining learners' progress through effective monitoring and the challenges of evaluating and tracking student performance in online classes. These themes collectively illuminate the multifaceted challenges faced in the blended learning landscape, spanning issues of access, technology proficiency, engagement, training, and assessment.

Conclusion

This research paper emphasizes the importance of blended learning and addresses its challenges to enhance the teaching and learning experience. The major findings provide valuable insights for pre-service teachers, teacher educators, teacher education institutes, and policymakers. The benefits of blended learning were evident in the findings, with pre-service teachers recognizing the flexibility, convenience, cost-effectiveness, and enhanced learning experiences it provides. They acknowledged its positive impact on teaching and instructional

practices, enabling the use of appropriate mediums for different aspects of teaching. However, the study also highlighted challenges that need to be addressed. Limited access to technology and internet services, technical glitches, and a lack of technical skills were identified as barriers to the seamless implementation of blended learning. The need for comprehensive training programs, ongoing support, and additional resources was emphasized to overcome these challenges. The findings of the study suggest that maintaining strong student-teacher relationships and addressing the limited face-to-face interaction were also identified as important aspects to consider in blended learning environments.

Suggestions for Future Research

Since the present paper focused only on the benefits and challenges of blended learning, further study can be conducted by including various other perspectives of engagement like cognitive, behavioral, etc.

Researchers can dig deeper by interviewing students, teachers, and teacher educator's views and perceptions to get a full picture of the scenario and how different factors interact or affect one another.

Research can be done on a large sample of preservice teachers from different universities.

Additionally, further research can be done on the long-term effects of blended learning on the professional development and teaching practices of preservice teachers.

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