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NAVIGATING PROSPECTIVE TEACHER'S ATTITUDE TOWARDS BLENDED LEARNING APPROACH IN INCLUSIVE CLASSROOM

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ABSTRACT

Background: In the age of digital literacy, blended learning is a massive and comprehensive approach for navigating skills and competencies of the young aspirants in inclusive culture. This paper aims to enhance prospective teachers' attitudes towards the blended learning approach in inclusive classroom environment to improve their technological skills and competencies. **Method:** Primary data was collected from 670 B.Ed. students purposively from different teachers' training colleges and universities of West Bengal, India. To explore the technological potentialities and competencies of these prospective teachers, a self-prepared questionnaire on ASBLA was administered via Google Forms. The ASBLA was validated by experts, and its reliability was established through Cronbach's Alpha, which yielded a coefficient of 0.864, indicating good internal consistency. As a result, it was found that the constructed tool had acceptable reliability measurements. Data were quantitatively analysed using mean, t-test, ANOVA and percentage analysis in 'IBM SPSS Statistics 21' software. **Results:** Results showed no statistically significant differences in attitude towards blended learning approach based on age and locality at 0.05 level of confidence. Additionally, significant differences were found between the gender and type of institutions. **Discussion:** Eventually, the result of the study shows that prospective teachers developed a positive attitude towards blended learning approach, whereas approximately 40% expressed dissatisfaction. **Conclusion:** The study recommends stakeholders to implement blended learning approach for enhancing teachers' skills in inclusive classroom environment.

Keywords: Prospective teachers; Blended learning approach; Technological skills; Inclusive classroom; Teacher's competencies

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INTRODUCTION

Teachers' perceptions of blended learning (BL) in an inclusive classroom environment vary widely, influenced by their experiences, training, and the specific contexts in which they teach. A teacher is an incumbent part of the learning process. Because of the utmost work in teaching-learning, the teacher is the most esteemed member of society in India. The futures of our students and, consequently, of our country are genuinely shaped by their teachers. The reason Indian teachers were held in the highest regard by society is due to their noble profession (Fadlelmula, 2013). In order to become teachers, one must be the best and most learned. As stated in National education policy (NEP-2020), society has equipped teachers, or gurus, with the means to guarantee that pupils obtain the finest education possible in terms of knowledge, skills, and morality. In this age and the world of technological advancement in 21st century, teacher education is significant in developing a pool of educators who resolve mould the future generation. Teacher willingness is a multidisciplinary activity that necessitates the construction of temperament and values, as well as the improvement of practices under the guidance of the greatest mentors. Finding tactics to enable them to create a blended learning environment that is inclusive is the instructors' primary responsibility. It is a very difficult task since it involves organizing and managing materials and curriculum in a way that ultimately has to match the actual needs of Special Educational Needs (SEN) students (Darawsha & Galia, 2020). After that a successful outcome can be attained by establishing a positive learning environment, cultivating positive connections, adapting learning methodologies, and adjusting the curriculum. These components imply a cooperative process that includes anticipating needs, making plans, and cooperating in partnerships.The research addresses the role of prospective teachers'[1] towards blended learning in educational settings, which strongly emphasizes blended learning (BL) and advancement the technology in inclusive education. Through the lens of the recently adopted national education policy (NEP-2020), it investigates the prospective benefits of blended learning in the education system. BL is not a mere mix of online and face-to-face mode, but it refers to a well-planned combination of meaningful activities in both the modes (University Grants Commission, 2021; Bordoloi *et al.*, 2021; Ireland *et al.*, 2009). Blended learning in education combines in-person activities and digital tools to enhance the learning experience. It has the potential to address various aspects and loopholes in Indian education system and can be applied in different pedagogic models across disciplines (Aisha & Ratra, 2023; Devi & Sarma, 2021). The paper investigates that the nurturing teachers' roles on blended learning approach in inclusive classroom environment and how implement its in educational institutions for enhancing the students and teachers' skills, competency and proficiency to improving the quality education, as depict in Figure 1.

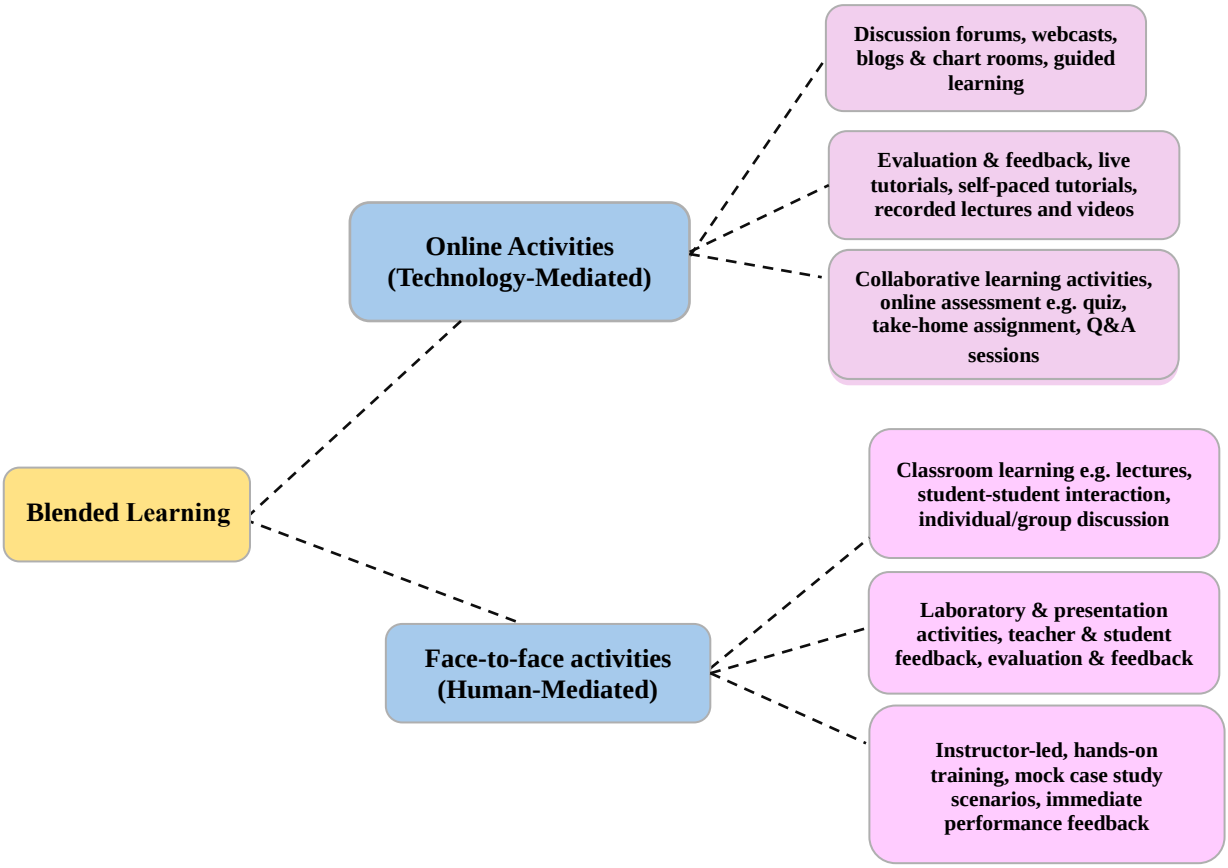

Figure 1. Overview of blended learning in education
Source: Adapted from Anthony Jnr (2021)

Blended learning in education offers advantages such as flexibility, autonomy, participation, and effective learning effects. It provides an opportunity to redesign and redevelop the curriculum in inclusive classroom environments. It is likely to be the dominant pedagogy of the future and is one of the key educational trends of the 21st century with great potential (Feng, 2022). In the last few years, Information and communication technology (ICT) has expanded rapidly and developed worldwide. On the other hand, over these years, Indian educational institutions have continued to use conventional face-to-face teaching and learning methods, failing to capitalize on the potential of such technological advancements fully. Devi & Sarma (2021) asserted that during the pandemic, blended learning became a cutting-edge learning method that was striving to gain traction and promised to provide students with complete autonomy, the ability to learn at their own pace, and improved learning possibilities. However, the during Novel corona virus pandemic forced all educational institutions worldwide to change to a different approach that might be more effective and better meet the standards of students. As a result, online learning along with face-to-face learning has become an important medium in educational institutions in India as well as globally. Therefore, online learning is the potential benefits, such as flexible access to content and instruction, which can enhance and progress student learning outcomes (Castro & Tumibay, 2021). According to the UGC's report (2021) practical implications of the

study include the importance of monitoring BL implementation, ensuring the availability of necessary resources, and preparing students for future skills and self-learning.

Teachers' perceptions of blended learning in inclusive classrooms are shaped by the balance between its potential benefits and the challenges they face in implementation. While many see it as a powerful tool for personalized, flexible, and inclusive education, they also recognize the need for adequate resources, training, and support to make it effective for all students. The success of blended learning in inclusive environments largely depends on how well these challenges are addressed. To address the present and upcoming obstacles in delivering high-quality education to everyone, it will be necessary to optimize and broaden the current digital platforms and ongoing ICT-based learning initiatives. According to Jagadeesh & Manjula, (2022), teachers should be fully aware of the specific tool that is needed, as long as it's appropriate to utilize it, and the best way to use much of it. Teachers are unable to be fully replaced by technology because they have an in-depth knowledge of each student's individual learning path. What level of support is appropriate for each student, how quickly to go, the way to arrange it, and exactly how to incorporate different elements into it? Learning shouldn't just be delivered; in order to have a beneficial effect, it should additionally concentrate on motivating people to overcome their obstacles. To achieve satisfaction with the blended learning approach in an inclusive classroom environment, teachers require comprehensive support, adequate resources, professional development, and a positive, balanced work environment. When these needs are met, teachers are more likely to embrace blended learning and feel confident in their ability to deliver high-quality, inclusive education.

OBJECTIVE OF STUDY

O_1. To study the prospective teacher’s attitude on blended learning approach with respect to age, gender, locality, and type of the institutions.

O2. To examine the level of attitude of prospective teachers towards blended learning approach.

O3. To study the challenges and opportunities of blended learning approach in inclusive classroom environment.

O4. To develop policymaker suggestions based on the results.

Research Question

Q1: What is the level of attitude of prospective teachers towards blended learning approach?

Research Hypotheses

H01. There exist no statistically significant differences in the mean score on attitude towards blended learning approach of prospective teachers with respect to age.

H02. There exist no statistically significant differences between male and female students in the mean score on attitude towards blended learning approach of prospective teachers.

H03. There exist no statistically significant differences between urban and rural students in the mean score on attitude towards blended learning approach of prospective teachers.

H04. There exist no statistically significant differences in the mean score on attitude towards blended learning approach of prospective teachers with respect to different type of institutions.

LITERATURE REVIEW

The research indicates that teachers who receive training in technological integration are more likely to implement innovative teaching practices and use digital resources effectively within their own classrooms (Maria Josephine Arokia Marie, 2021; Davies & West, 2014; Hartman *et al.*, 2019; Jeffrey *et al.*, 2014; Yemothy, 2015). Exposure to various educational technologies during training equips educators with confidence to incorporate these tools to promote deeper learning experiences for their students. This preparation is crucial, since students are increasingly trusted on technology for learning and evaluation in various contexts. In addition, teacher training programs that emphasize the use of data analysis and evaluation tools allow educators to make informed instruction decisions. Access to real -time data on student performance can report instructional adjustments and highlight improvement areas. By understanding how to collect and analyze data, teachers can adapt their instructional practices to meet the needs of their students more effectively, thus promoting an inclusive and receptive classroom environment.

First and foremost, blended learning facilitates a more personalized and differentiated approach to teacher training. Nurhidayat *et al.*, (2024) point out that this flexibility is essential to promote autonomous learning among educators, encouraging them to appropriate their professional development. Chim *et al.*, (2024) explores the experiences and preferences of face-to-face and online tutorials in a problem-based learning setting, with the majority of participants preferring a 100% face-to-face schedule to stimulate deep learning and social interactions. Face-to-face tutorial meetings were perceived to deepen content discussions, create a sense of connection through social interactions and non-verbal communication, and protect student well-being. The findings highlight the need to consider the benefits of non-verbal communication and social interactions in face-to-face tutorials, which can deepen content discussions and create a sense of connection among students. Aisha & Ratra, (2023) highlights the salient features of NEP-2020 related to BL, identifies emerging trends, and discusses the challenges in adopting blended learning in Indian higher education. It suggests that blended learning can enhance learning outcomes and enjoy credibility among learners across the nation. Feng, (2022) analyzed the current state and trends of blended learning in higher education, highlighting the development of learning management systems, social media, and other tools for implementing blended learning and also providing insights for innovative teaching and management approaches for a wider range in institutions. BL fosters a friendly and peaceful learning atmosphere, and lowers students' nervousness by encouraging them to respond to queries confidently and without the anxiety of making oversights. It also contributes to the improvement of teaching quality and class management. It emphasizes that the future of blended learning will be more personalized, diverse, innovative, student-centered, and high-quality. Anthony *et al.*, (2022) found that BL practices involve face-to-face teaching, activities, information, resources, assessment, and feedback for students, and technology, pedagogy, content, and knowledge for lecturers. Additionally, it highlights the theories that are frequently used to investigate the adoption of BL, including the diffusion of technological advances theory, the ad hoc theory, the information system efficiency model, the model of technology adoption, and the unified framework of

technological acceptability and use. The findings have implications for students, lecturers, and administrators in understanding the theoretical foundation of BL adoption and implementation in higher education. Jagadeesh & Manjula (2022) seeks to examine the benefits and problems of blended learning. Since blended learning will have a significant effect on how future generations learn, it highlights the necessity for gradual advancements in the field rather than a radical change in thinking. The study also focused how to prevent a rift between educators and students; blended learning must place teachers at the centre of the process and provide them with the necessary authority. Anthony Jnr, (2022) & Anthony Jnr (2021) creates a model based on institutional theory that will be used to examine how faculty members in higher education are implementing blended learning. According to the study, normative, mimetic, and coercive pressures have a big impact on how faculty members apply BL. The results benefit higher education in developing and implementing BL policies by offering insights into the institutional theory perspective on BL. The findings can be used to design practices, policies, and a culture that supports the continued use of BL systems among faculty members for effective institutional outcomes. Bordoloi *et al.*, (2021) used an academic analytics methodology to investigate the perspectives of educators and students about blended and online learning environments in India. The study examines professors' and students' perspectives in Indian universities and colleges using an academic analytics approach and a structured questionnaire. It highlights the potential impact of blended learning and the use of technology in education, as well as the need for policy-level guidance in utilizing online/blended teaching models during future. Addressing the digital divide and integrating technology in teaching and learning through policy implementation and capacity building can bring about positive change. Castro & Tumibay (2021) demonstrates that online learning is at least as effective as traditional learning. Additionally, the effectiveness of problem-centered learning in online educational programs, student happiness, time management and educational productivity, and other issues are highlighted in the article. The adoption of online learning programs raises questions about the impact of instructional technology on student achievement. The researchers aim to provide evidence on how the design and structure of online learning influence student performance and learning outcomes. Kundu *et al.*, (2021) investigated the effects of blended learning on students' classroom engagement in an Indian elementary school. It used design-based research methods and collected quantitative data through classroom observations and interviews with teachers. The findings revealed that blended learning increased students' classroom engagement, regardless of gender, and these effects emerged over a period of nine weeks. Devi & Sarma (2021) examining Assamese higher education students' attitudes on BL as a cutting-edge teaching approach, the study discovers that most are at ease with and eager to investigate the potential applications of BL. In order to investigate Assamese higher education students' opinions on the adoption of BL, the study employed a descriptive research design. The sample for the study consisted of 150 students from undergraduate and postgraduate courses in arts, science, and commerce streams, selected using stratified random sampling technique. The data collection was conducted through a self-prepared questionnaire that was arranged and distributed amongst the students. The researchers also analyze the prospects and challenges of implementing Blended Learning in higher education, considering the latest guidelines of the NEP-2020, and suggest incorporating BL courses in provincialized colleges of Assam, while addressing the digital divide and socio-economic divisions. Ibrahim & Nat (2019) adds to the corpus of research on blended learning by examining the factors that lead to BL

motivation in higher education institutions' instructors. The suggested model not only forecasts teachers' enthusiasm for BL practice, but it also offers knowledge of the reasons behind the lack of motivation for BL, enabling the creation of remediation plans. The findings have practical implications for educational managers, curriculum designers, and faculty members in creating a cohesive and effective BL environment in higher education institutions (HEIs). Kharb & Samanta (2016) implemented a blended learning module for teaching anatomy and found that students perceived it as useful and effective in enhancing their learning experience. The online component, where students self-learned basic concepts before face-to-face sessions, helped them become familiar with new terms and concepts. The effectiveness of blended learning was assessed in terms of students' performance, and the results supported its feasibility and benefits in teaching gross anatomy.

By immersing themselves in realistic scenarios in the classroom, teachers can experience with different pedagogical approaches, receive immediate comments and obtain information about their teaching styles. Rahimi & Oh (2024) point out that such technologies can significantly improve the experimental aspects of teacher training, which finally leads to more effective practices in the classrooms of the real world. Yassin (2024) highlights that these interactive evaluation methods align with contemporary educational paradigms that support learning experiences focused on students. Finally, innovative learning spaces serve as a catalyst for blending traditional pedagogical approaches with contemporary methodologies, facing the multifaceted challenges that educators face in today's classrooms.

METHODOLOGY

The study utilized a quantitative research approach, specifically a critical analysis technique. According to Singh (2021), critical analysis aims to engage with the text in order to better understand the material and facilitate discussion on the topic. Therefore, critical analysis was chosen to explore the attitude of BL in inclusive classroom of prospective teachers. In order to achieve this, it was necessary to analyze this purpose based on empirical investigation. Sample for the current study were 670 prospective teachers (Bachelor of education (B.Ed.) students) selected purposively from different teachers' training college and universities of West Bengal by the nature of the study which was reflected to technological potentialities and competencies of the teachers on teaching-learning process depicted on following table 1. In the study, an attitude scale on blended learning approach of prospective teachers' tool was used. Data was obtained using a self-prepared questionnaire that was validated by the help of the experts. The 34-item tool was shown to a group of specialists, including members of internal and external doctoral committees and B.Ed. students. The experts' panel was asked to provide feedback on the items' suitability and structure. After carefully reviewing the tool, the panel said it was satisfied with its content. The experts' recommendations led to some of the products being reorganized and improved.

Table 1. Sample distribution of the institutions

S. No.	Name of Institutions	Types of Institutions	Sample Size		Percentage (%)
1	Visva Bharati, Birbhum	Central	80	80	12
2	The University of Burdwan, Purba Burdwan	State	70	220	32.8
3	University of Kalyani, Nadia	State	80		
4	Government College of Education, Banipur	State	70		
5	Helal Teachers' Training Institute, Birbhum	Private	55	370	55.2
6	Krishnapur Teachers' Training Institute, Birbhum	Private	30		
7	Palassey Teachers' Training Institute, Nadia	Private	50		
8	Shyamangini Kundu College of Education, Murshidabad	Private	55		
9	Sundarban Minority B.Ed. College, North 24 Parganas	Private	45		
10	Abdul Saheb B.Ed. College, Murshidabad	Private	45		
11	Dishari College of Education, Purba Burdwan	Private	50		
12	Joypur B.Ed. College, Bankura		25		
13	Saltora B.Ed. College, Bankura		15		
Total			**670**		**100**

Hence, face and content validity were recognized by the experts. Significantly, the consistency of measurement is defined as reliability. "The degree of consistency of an instrument is its reliability." In other terms, a reliable instrument is one that consistently produces the same score. The internal consistency of the tool was evaluated using the Cronbach's Alpha Test. The Cronbach's Alpha Test findings are displayed in Table 2. The Cronbach's Alpha of final draft of Attitude scale on blended learning approach (ASBLA) tool was found 0.864 and for the standardized items it was found 0.867 that is under the 'good range of Cronbach's Alpha. As a result, it was found that the constructed tool had acceptable reliability measurements.

Table 2. Cronbach's Alpha test of attitude scale on blended learning approach

Reliability Test		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.864	0.867	34

The questionnaire was structured in Google Form, which contains a total of 34 items and divided into six dimensions considering the purposes of the study. The first and second dimensions were created six close-ended items for each regarding knowledge on blended learning approach and blended learning environment. The third dimension incorporated a total of seven close-ended items on course content, those items aimed to provide the e-contents materials to the students and improving the quality education through online for improving the quality education. Four dimensions included six close-ended items on students' engagement in teaching-learning process to participate actively on assignment, quiz competition or any others co-curricular activities. Five dimensions added in four close-ended items, this item focus on parents and teachers' involvement in education to afford the basic education for clarification of any queries related to the studies of the pupils. Fortunately, last dimension incorporates a total of five close-ended items regarding student' academic performances and overall satisfaction on Blended learning approach (BLA). The items were developed to enhancement the skills of attitude on blended learning approach among B.Ed. students. The online survey was created using a Google form, and the link was distributed to several WhatsApp groups and e-mail addresses. Participants were asked to score each item on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The following task was to use statistical approaches to meet the research objectives. The data was analysed using IBM Statistical package for social sciences (SPSS) Statistics 21 software. The Mean, Standard deviation (SD), t-test, (Analysis of variance) ANOVA and percentage were used to analyse the data.

RESULTS

To address the research objectives, data was analyzed using mean, t-test, ANOVA, and percentage analysis in IBM SPSS Statistics 21. The research aimed to determine the average variation in prospective teacher's knowledge, skills and attitude toward blended learning approach across their age, gender, locality, and different type of institutions (state, central & private) within the educational establishment. In order to accomplish the first objective, the investigator developed the subsequent null hypotheses for empirical verification.

Table 3. Independent sample t-test on attitude towards blended learning approach with respect to age

Variables		N	Mean	Std. Deviation	Mean difference	df	t-value	Sig. (p-value)
Age	G-1=20-24 age	500	120.7080	16.8409	1.243	668	0.871	0.38**
	G-2=25-34 age	170	119.4647	13.5769				

**Not significant at the 0.05 level

Table 3 shows that the p-value is greater than the 0.05 level of significance (i.e. 0.38). Hence, the null hypothesis is accepted, inferring that there exists no significant difference on attitude towards BL approach of prospective teachers with reference to the age groups. Although the mean score for G-1 (20-24 age) (M=120.7080) was numerically higher than G-2 (25-34 age) (M=119.4647). The result denotes that the need for improving the knowledge and attitude towards blended learning in teaching, as recommended by Lee *et al.*, (2024) who insisted to update the skills for improving the quality education. Furthermore, the use of ICT, teaching skills and competency are essentially required for the prospective teachers, as stated by Hubackova & Semradova, (2016).

Table 4. Independent sample t-test of prospective teachers' attitude towards blended learning approach with respect to gender

Variables		N	Mean	Std. Deviation	Mean difference	df	t-value	Sig. (p-value)
Gender	**Male**	299	124.1472	12.216	6.780	668	5.547	0.000*
	Female	371	117.3666	18.068				

*Significant at the 0.05 level

According to Table 4, the mean score for male and female students' attitudes regarding BLA differs statistically significant. The Mean score with its S.D. of male students is 124.1472 and 12.216 respectively; the mean score and SD of female students are 117.3666 and 18.068. The calculated "t" value is 5.547 and p-value is 0.000 (<0.05) which shows that the test is significant at 0.05 level of confidence. The null hypothesis is rejected and alternative hypothesis is accepted. As a result, the attitude on BLA scores of the male students was higher than those of the female students.

Table 5. Independent samples t-test of prospective teachers' attitude towards blended learning approach with respect to the locality

Variables		N	Mean	Std. Deviation	Mean difference	df	t-value	Sig. (p-value)
Locality	**Urban**	254	121.0118	12.351	0.9973	668	0.779	0.43**
	Rural	416	120.0144	17.977				

*** Not significant at the 0.05 level

With the computed scores displayed in table 5, the p value is higher than the 0.05 level of significance (p=0.43). Hence, the null hypothesis is accepted in the mean score of urban and rural prospective teachers on attitude towards BLA. The mean score with its SD of urban students is 121.0118 and 12.351 correspondingly; the Mean score with its S.D. of rural students is 120.0144 and 17.977. Nonetheless, the mean score for urban students (121.0118) is numerically slightly higher than that of rural students (120.0144). Therefore, we cannot conclude that there

is a meaningful difference in attitudes towards blended learning approach between urban and rural prospective teachers.

Table 6. One-Way ANOVA for the mean scores of prospective teachers' attitude towards BLA with respect to type of the institutions

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23372.486	2	11686.243	52.138	0.000*
Within Groups	149501.277	667	224.140		
Total	172873.763	669			

Table 6 express a significant difference between groups and within groups of attitudes toward blended learning approach of prospective teachers with respect to different type of the Institutions. The p-value is lesser than the 0.05 level of significance. Hence, the null hypothesis is rejected, inferring that there is statistically significant difference on attitude towards BLA among prospective teachers with respect to different type of institutions. To know the pair wise comparison of prospective teachers' attitude towards BLA with respect to different type of institutions, Tukey's post hoc test was performed, and the results are presented in the following.

Table 7. Pair-wise comparisons of prospective teachers' attitude on blended learning approach with respect to type of Institutions by Tukey's post hoc method

Variable	(I) Institutions	(J) Institutions	N	S.D.	Mean	Mean Difference(I-J)	Sig.
Attitude on BLA	**State**	**Central**	206	12.25067	122.9369	-3.24293	0.63
		Private				10.35638*	0.00*
	Central	**State**	228	11.76713	126.1798	3.24293	0.63
		Private				13.59932*	0.00*
	Private	**State**	236	19.27444	120.3925	-10.35638*	0.00*
		Central				-13.59932*	0.00*
	Total		670	16.07502	120.3925		

*The mean difference is significant at the 0.05 level.

Table 7. it revealed that there is a significant difference between attitude levels on blended learning approach of prospective teachers in private institutions with that of state institutions. Similarly, the attitude levels of prospective teachers toward blended learning approach in central university had a significant difference with that of private college/university's students. Furthermore, the attitude levels toward blended learning approach in private university/college's prospective teachers had a significant difference with that of central and state college/university's students. Therefore, the null hypothesis "*there exist no statistically significant on attitude towards blended learning approach of prospective teachers with respect to different type of institutions*" is rejected and the alternative hypothesis is accepted at 0.05 level of confidence. Additionally, there is no significant difference on attitude towards blended learning approach in state colleges/university with that of central university' student. Thus, the null hypothesis is accepted. As seen in Figure 2 there is a statistically significant difference in the mean score on

attitude towards blended learning approach of prospective teachers with respect to different type of institutions.

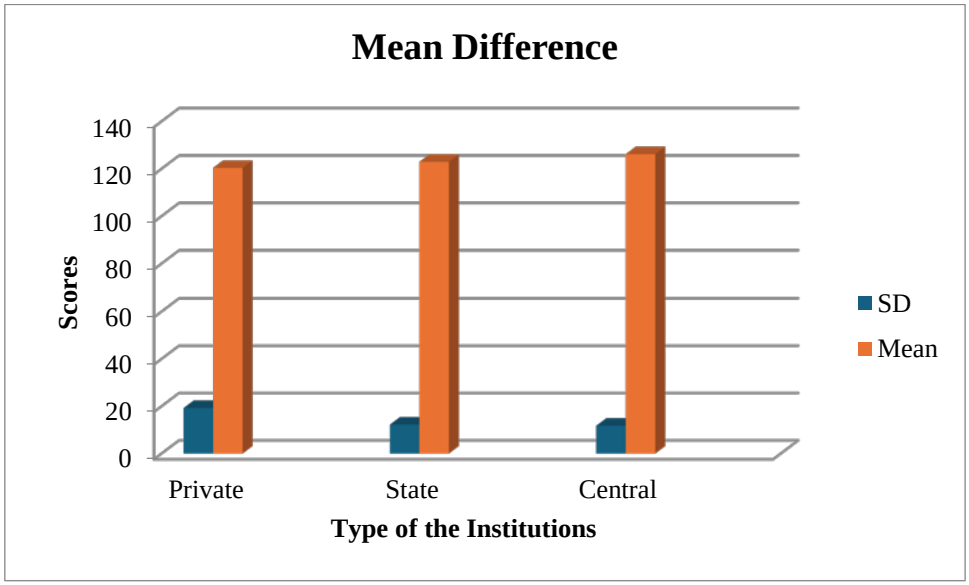

Figure 2. Mean scores of prospective teachers' attitude towards blended learning approach with respect to different type of institutions

The mean score with its SD of private college's students is 120.3925 and 19.27444, the mean score and SD of state college's students is 122.9369 and 12.25067 respectively, the mean score with its SD of central college/university's students is 126.1798 and 11.76713. Thus, the result indicate that central university's B.Ed. students performed better than the private and state college/university' students. Singh *et al.*, (2022) suggest that universities should implement orientation programs for students to better prepare them for online learning as well as they found that the importance of mental health support for both faculty and students during transitions, as well as the necessity for robust online support systems to address issues such as technology access and student engagement. Jagadeesh & Manjula (2022) also highlighted how to prevent a rift between educators and students; blended learning must place teachers at the centre of the process and provide them with the necessary authority.

Examine the Attitude of Blended Learning Approach

In order to accomplish the second objective, the investigator developed the research question for prevalence exploration. As such, the present study attempted to examine the attitude levels of the students regarding blended learning, the result of which is presented in Table 8 and Figure 3.

Table 8. Percentage scores of prospective teachers' attitude on blended learning approach (N = 670)

Percentage of levels of attitude on blended learning (BL) approach				
Satisfaction level	**Frequency**	**Percent**	**Valid Percent**	**Cumulative Percent**
Strongly Disagree	145	21.6	21.6	21.6
Disagree	123	18.4	18.4	40.0

Undecided	134	20.0	20.0	60.0
Agree	179	26.7	26.7	86.7
Strongly Agree	89	13.3	13.3	100.0
Total	670	100.0	100.0	

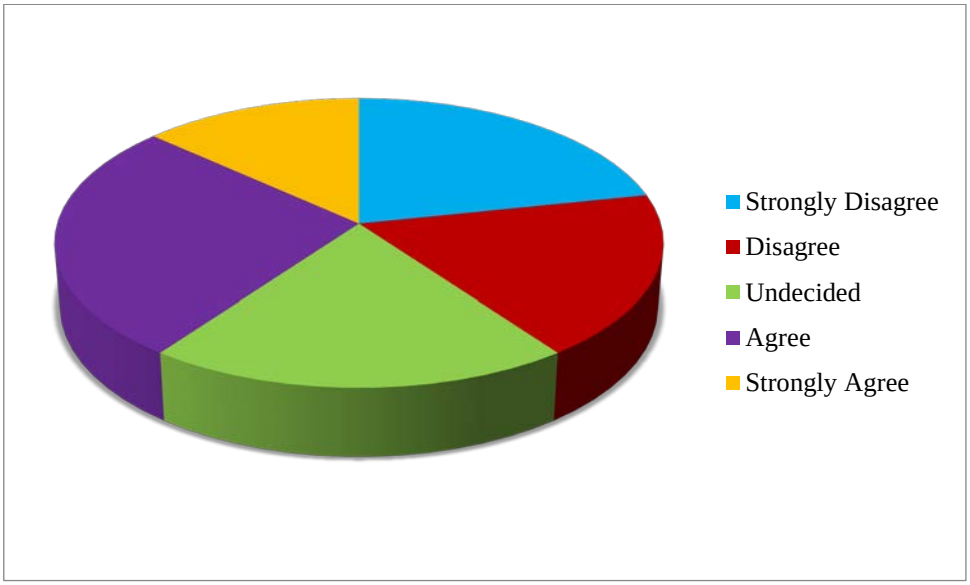

Figure 3. Performance on blended learning approach of prospective teachers

On exploring, it is found that 40% students are satisfied (26.7% agree and 13.3% strongly agree) whereas 40% students are dissatisfied (21.6% strongly disagree and 18.4% disagree) on overall performance toward blended learning approach. In contrast one-fifth of the students, that is, 20%, expressed their view as detached. This findings is backed by Ireland *et al.*, (2009), who argued that using a blend of teaching and learning methods was generally a positive experience for students in terms of knowledge and 'usefulness'. Singh *et al.*, (2021) indicate a pressing need for professional development for faculty in online teaching, as well as standardized approaches to course design to enhance student familiarity and engagement. Similarly, findings have also been reported in previous studies, in which a substantial proportion on blended learning of higher education students had significant role. The study found that BL approach is more effective than the traditional technique for teaching skills. Also, the students responded that they were highly satisfied with the BL tools used in the classroom, whether about the actual scholastic value or the aspect of learners' enjoyment of the experience (Nayar & Koul, 2020). Overall, students responded with low satisfaction regarding the blended learning elements. Therefore, need to improve the skills on ICT use and level of attitude towards blended learning approach of prospective teachers in inclusive classroom environment.

DISCUSSION

Navigating prospective teachers' attitudes towards the blended learning approach in inclusive classrooms involves addressing a range of perceptions, beliefs, and readiness levels. Many teacher trainees recognize the potential of blended learning to personalize instruction, accommodate diverse learning needs, and integrate technology effectively (Garrett Dikkers *et*

al., 2015; Tong *et al.*, 2022). In order to determine the potential for blended learning in education, the goal of this article is to examine the satisfaction of attitude of prospective teachers on blended learning approach in inclusive classroom. It also makes an effort to pinpoint any issues or challenges that the Indian education system may encounter when implementing blended learning (Aisha & Ratra, 2023; Devi & Sarma, 2021). Bordoloi *et al.*, (2021) realize the perceptions of teachers and learners regarding blended learning approach and to identify the prospects and challenges of providing such learning in India during and after the Covid-19 pandemic. Anthony *et al.*, (2022) extends the body of knowledge in BL studies by presenting new findings and implications for students, lecturers, and administrators in understanding the theoretical foundation of BL adoption and implementation in teaching-learning process. It is considered an effective and viable method for future implementation in teacher education. Indian education institutions should focus on developing mature, high-quality blended learning programs, considering curriculum design, flexible adjustment of online and offline learning ratios, and providing technology training and support for teachers and students (Feng, 2022). When the material is relevant to what they teach, they actively engage in both online and offline group projects and conversations (Tuparova & Tuparov, 2011). However, their attitudes can be influenced by their exposure to digital tools, confidence in using technology, and understanding of inclusive education principles. Some may view blended learning as a promising method to support students with disabilities or varied learning styles, while others might perceive it as an added challenge due to a lack of training or resources. Positive attitudes are often associated with proper mentorship, practical experience, and institutional support that fosters competence and innovation. Therefore, teacher preparation programs must focus on building digital literacy, inclusive pedagogy, and flexible teaching strategies to shape constructive attitudes (Gutierrez-Angel *et al.*, 2022; Falloon, 2020; Nguyen & Habók, 2024; Reisoğlu & Çebi, 2020; Zhao *et al.*, 2021). Encouraging reflective practices and providing opportunities to experience successful blended learning models in inclusive settings can further enhance prospective teachers' openness and adaptability to this approach. Understanding the perceptions of educators considering the integration of blended learning can significantly improve educational results and support those with legitimate needs who cannot attend traditional sessions (Keogh *et al.*, 2017).

Similarly, Jagadeesh & Manjula (2022) argued that the blended learning process can suffer from teachers' lack of clarity and competency when using ICT technologies. In order to effectively implement blended learning, educators must continually improve their abilities. Chim *et al.*, (2024) provides valuable insights for educators and institutions on the role of technology in facilitating small group learning and the transferability of findings to different educational contexts. It finds that the concept of blended learning as the cutting-edge approach in Indian education system is supported and that it has the ability to develop the teaching-learning process. The implementation of blended learning in educational institutions requires a robust infrastructure encompassing software, hardware, adequate office spaces, and reliable internet access (Adel & Dayan, 2021). Therefore, blended learning is a medium with the help of which students can improve the quality education as well as develop the skills of teachers in teaching-learning process. Additionally, the present study needs to explore the future possibilities and wider implantation of blended learning in inclusive education as well as multidisciplinary education sectors in India. In digest, the impact of COVID-19 on teacher training and the subsequent adhesion of blended learning models led to a fundamental replenishment of the way

in which educators are prepared for the requirements of modern classrooms. While institutions continue to navigate the complexities brought by the pandemic, it is obvious that the lessons learned during this period will enlighten the current educational practices and the development of the program in teacher preparation programs.

CONCLUSION

This study examined the attitudes of prospective teachers toward the implementation of blended learning in inclusive classroom settings. It's critical to provide efficient training programs that give educators the know-how and abilities they need to integrate online education technologies into their classroom instruction. All things considered, the study sought to resolve issues and improve the blended learning strategy's effectiveness, potential, interactivity, and results-drivenness. The study came to the conclusion that the primary goal of blended learning should be to encourage teachers and place them at the centre of the learning procedure. If not, a slow separation will form and the student-teacher relationship will eventually break. Prospective generations may suffer irreversible harm as a result of this, and young adults in society will continue to form negative perceptions. Table 8 and Figure 3 reveals that 40% students are satisfied (26.7% agree and 13.3% strongly agree) whereas 40% students are dissatisfied (21.6% strongly disagree and 18.4% disagree) on overall performance toward blended learning approach. In contrast one-fifth of the students, that is, 20%, expressed their view as detached. Therefore, knowledge, and attitude of prospective teachers on blended learning approach is significantly positive but need to improve the skills in inclusive classroom for teaching and learning process. Likewise, the findings reveal that while many prospective teachers acknowledge the potential of blended learning to enhance student engagement and accommodate diverse learning needs, their attitudes are significantly influenced by factors such as prior exposure to technology, training in inclusive education, and institutional support. Especially, Positive attitudes were often linked to an awareness of the benefits of integrating technology with traditional instruction, especially in meeting the varied needs of students in inclusive environments. However, challenges such as limited digital literacy, inadequate access to resources, and insufficient professional development emerged as barriers to more favourable perceptions. To foster more positive and informed attitudes, teacher education programs must prioritize hands-on experience with blended learning tools and emphasize strategies for inclusivity. Ongoing training and mentorship can equip future educators with the confidence and competence to effectively implement blended learning approaches in diverse classrooms. In conclusion, addressing the gaps in training and support is crucial for shaping prospective teachers' readiness and willingness to embrace blended learning as a transformative tool for inclusive education. With the right foundation, blended learning can serve as a bridge to more equitable, engaging, and student-centred teaching practices.

Shortcomings and Policy Suggestions

Policy recommendations for integrating blended learning at the teacher education level are made in light of the study. The study's shortcomings may provide future researchers with fresh directions to pursue. To strengthen the findings of the current study, more research on the teachers' role towards BL in inclusive classroom environment is required, and this research should be conducted across various institutions. In order to create a motivating learning

environment and encourage students to use resources both inside and outside of the classroom, teachers should employ a variety of teaching strategies, such as brainstorming, concept-mapping/mind-mapping, video-conferencing, case study, debate, discussion, the reflective method, and also the cooperative learning strategies like team-pair-share, team-pair-solo etc. By employing these strategies, educators may ensure that every student takes part in the meaningful learning process and contributes to the growth of an attitude of teacher accountability, mutual dependence, collaborative behavior, and the ability to think critically and logically. It should be the responsibility of educators, learners, and the educational system to keep investigating ways to enhance teaching-learning through the use of technology. It is important to address challenges related to technology, pedagogy, and affordability. The major noteworthy contribution of this work on BL is the effective approach of the study which can improve the learning outcomes of the students and enhance the teachers' competence in the teaching-learning program. Since young children in India have few opportunities to utilize technology at home or in school, more research should be done on the possible levels and forms of eventual technology environments (Kundu *et al*., 2021). Thus, it is feasible to look into how learners' efficiency in learning outcomes will be impacted by BL. Furthermore, the use of blended learning in the classroom can assist to enhancing teachers' competency and avoiding the challenges of blended learning to guarantee inclusive, egalitarian, high-quality education and encourage possibilities for lifelong learning for everyone. Future research can also explore the practical implications of the study's findings, providing insights on how institutions can improve BL experiences in higher learning and support the adoption of BL through effective planning, development, delivery, and management of BL programs. This can contribute to further research and policymaking for BL activity in education (Anthony Jnr, 2021). Understanding the effects of blended learning on student learning proficiencies, the efficiency of teachers and classroom management in educational institutions will require more research. Future possibilities for blended learning should be investigated, to achieve a more individualized, shifted innovative, focused on the learners and an effective high-quality approach to education (Feng, 2022). The present study leads to the following significant suggestions for moreover the research:

- According to UGC's statement on the BL implementation, all courses may be taken via the BL, except SWAYAM courses, which are only offered online.
- As per UGC's guideline 40% of the total classroom time for instructor's lecture is recommended.
- The National Education Policy (NEP)-2020 suggested that prestigious universities recognized for their ODL program be urged and assisted in creating top-notch virtual curricula. Higher education institutions will include these high-quality online courses in their curricula, with a preference for blended learning.
- NEP-2020 proposed that high-quality adult education may thus be delivered online or through a blended learning environment in many situations. Furthermore, if experiential and activity-based learning aren't blended with online education, it will likely turn into a screen-based curriculum with little attention to the social, affective, and psychomotor aspects of learning.

As a result, the study shows that the implementation of BL as a method of instruction could enhance the knowledge and skills of teachers' pedagogical practices in Indian education. Following many reviews of the literature, researchers find that teachers' education programs require practice with digital learning techniques prior to the implementation of BL. Since teacher education requires multidisciplinary inputs in addition to instruction in high-quality material and methodology, all teacher education programs (TEP) must be held inside merged multidisciplinary institutions. Therefore, blended learning is a medium with the help of which students can improve the quality of education as well as develop the skills of teachers in the teaching profession.

RECOMMENDATIONS

Blended learning, has gained prominence in educational settings. In inclusive classrooms, where students with diverse abilities and needs learn together, teachers' attitudes toward blended learning significantly influence its success. Navigating these attitudes requires targeted strategies that promote understanding, confidence, and competence among prospective teachers. Additionally, research on prospective teachers' attitudes towards blended learning in inclusive classrooms has provided valuable insights, yet several areas remain unexplored or underdeveloped. Researchers recommended that the future research can expand the field by focusing on the following key aspects:

1. **Longitudinal Studies on Attitude Evolution:** Most existing studies capture attitudes at a fixed point in time. Future research should consider longitudinal studies that track changes in prospective teachers' attitudes as they progress through their teacher education programs and transition into their professional careers. This can reveal how exposure to inclusive education practices and blended learning technologies influences their long-term perspectives.
2. **Impact of Specific Blended Learning Strategies:** Future studies could examine how various blended learning models (e.g., flipped classrooms, rotation models, or flexible learning) impact attitudes differently. Understanding which methods are most effective in promoting engagement and confidence in inclusive settings will provide actionable insights for teacher training programs.
3. **Technological Proficiency and Digital Literacy:** Research should explore how varying levels of technological proficiency influence prospective teachers' readiness and attitudes toward implementing blended learning in inclusive classrooms. Identifying gaps in digital skills can help educational institutions tailor professional development programs to meet these needs.
4. **Cultural and Contextual Factors:** Prospective teachers' attitudes may vary across different cultural or socio-economic backgrounds. Future research should investigate how cultural perceptions of disability, digital tools, and pedagogical norms shape attitudes towards blended learning in inclusive environments.
5. **Emotional and Psychological Factors:** Attitudes are often shaped by feelings of anxiety, self-efficacy, and motivation. Further research could examine how emotional resilience, stress management, and support systems influence prospective teachers' attitudes when faced with the complexities of blended learning in inclusive classrooms.

6. **Collaboration and Peer Support Networks:** Exploring the role of peer collaboration, mentorship, and professional learning communities could reveal strategies to positively influence prospective teachers' confidence in applying blended learning approaches effectively.
7. **Inclusive Pedagogical Design in Blended Learning:** Research should explore how adaptive technologies, Universal Design for Learning (UDL) principles, and differentiated instructional strategies impact the attitudes of prospective teachers in inclusive classrooms. Identifying best practices for designing accessible and engaging blended learning experiences will be essential.
8. **Assessment and Feedback Mechanisms:** Future research could investigate how assessment strategies influence prospective teachers' attitudes. Studies may focus on how formative and summative assessments tailored to blended learning environments can improve perceptions of inclusivity and instructional effectiveness.
9. **Training Courses/Programs:** Future studies should evaluate the effectiveness of specific modules, workshops, or training strategies aimed at preparing prospective teachers for implementing blended learning in inclusive settings. Assessing the efficacy of simulated environments, virtual reality tools, and digital teaching aids could be particularly insightful.
10. **Policy and Institutional Support:** Investigating how institutional policies, leadership support, and access to resources affect prospective teachers' attitudes would provide insights for improving training frameworks and enhancing the adoption of blended learning in inclusive classrooms.

By exploring these areas, future research can bridge existing gaps and provide actionable insights to improve teacher preparation programs, enhance digital literacy, and ensure blended learning practices are effectively integrated into inclusive educational settings.

Conflicts of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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