
Exploring Pre-service Teachers' Perspectives on Blended Learning in the Context of National Education Policy 2020

Mariya Waseem

Research Scholar, Department of Teacher Training and Non-Formal Education,
Jamia Millia Islamia, New Delhi
mariya12793khan@gmail.com

Sana Mukhtar Khan

Research Scholar, Department of Teacher Training and Non-Formal Education,
Jamia Millia Islamia, New Delhi
sana.gibbroni@gmail.com

Mohammad Amir Khan

Research Scholar, Department of Teacher Training and Non-Formal Education,
Jamia Millia Islamia, New Delhi
khan.amir8678@gmail.com

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ABSTRACT

Blended learning, characterized by the integration of face-to-face and online learning components, has gained growing popularity in the field of teacher education. This study investigates the intersection between pre-service teachers' perspectives on blended learning and the National Education Policy (NEP) 2020. The main objectives include clarifying the NEP 2020 principles related to teacher education and analyzing pre-service teachers' views on blended learning. Employing a quantitative descriptive method and document analysis, the research involves a sample of 40 pre-service teachers. The results indicate a favorable reception of blended learning among pre-service teachers, with a significant majority expressing a strong positive perception of its advantages. These positive attitudes align with NEP 2020's overarching focus on promoting innovation in education. Nevertheless, the study identifies a nuanced requirement for targeted support, specifying particular areas where additional resources and interventions

are necessary.

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INTRODUCTION-

Teachers hold a crucial position in enhancing the quality of education, contributing significantly to the overall progress of a nation. Teachers serve as the primary strength and invaluable assets within any educational framework, playing a pivotal role in imparting knowledge and skills and thus serving as the foundation of the education process. The 2020 National Education Policy acknowledges the centrality of teachers and faculty in the learning process. Aligned with the vision of the Honorable Prime Minister, the policy aims to empower Indian teachers through various reforms related to recruitment, continuous professional development, service conditions, and more. Additionally, the NEP 2020 recognizes the necessity for teachers to undergo training in both high-quality content and effective pedagogy to meet the demands of 21st-century education.

With the advent of the National Education Policy (NEP) 2020, India's educational terrain is experiencing a significant transformation characterized by a reshaping of teaching methodologies and an increased focus on the integration of technology. Amidst these changes, blended learning has emerged as a notable instructional approach, representing an inventive pedagogical model that integrates conventional in-person teaching with online learning elements.

Blended learning is a teaching approach that leverages the advantages of both traditional classroom techniques and digital technology, creating a hybrid learning environment that goes beyond physical constraints. This method incorporates a variety of strategies, such as online discussions, multimedia resources, virtual simulations, and face-to-face interactions, providing a dynamic and personalized learning experience. Kang (2014) notes that higher education favors blended learning for its ability to effectively cut costs, disseminate quality education, and address distance-related challenges. Consequently, blended learning has emerged as a solution to the diverse requirements of learners, catering to different learning styles and fostering a more inclusive educational environment.

Blended learning holds a crucial role in teacher education, providing a flexible and accessible approach that combines both traditional and online learning methods for the benefit of pre-service teachers. The effective implementation of teaching and learning in a blended environment requires the knowledge and



skills to employ appropriate pedagogies with suitable technologies, as highlighted by the UGC. This approach not only facilitates hands-on experience with educational technology but also promotes personalized learning paths and the development of collaborative communities among pre-service teachers. Through simulations, real-world projects, continuous assessment, and feedback, it enables the practical application of theoretical knowledge, contributing to the ongoing development of skills. Blended learning, as suggested by Duhaney (2012), assists both pre-service and in-service teachers in learning how to integrate technology comfortably within the digital environment. Additionally, it instills a lifelong learning mindset, preparing pre-service teachers to adeptly utilize online resources and stay current with educational advancements. Furthermore, its cost-effectiveness makes it a scalable and efficient method for teacher education programs, ensuring effective preparation for the evolving demands of modern classrooms.

The NEP 2020 is a crucial document for education in India, and it says technology is super important for changing how we learn. The policy really wants to use technology to make teaching and learning better. It talks about blended learning, which means using a mix of online and traditional ways of learning. NEP 2020 thinks blended learning can help us move away from just memorizing things to a more complete and skill-based education. The policy wants to use online resources, digital tools, and virtual classrooms to make learning more flexible and fun. It aims for a system where we can think critically, be creative, and work together better.

UGC, which helps oversee higher education in India, suggests that teachers in colleges and universities should try using blended learning for some or even all of their courses. Blended learning mixes online and traditional ways of teaching. This can really help both teachers and students in higher education to keep up with what's needed in the twenty-first century. But, to make it work well, teachers and institutes need to plan a lot and put in effort. UGC talks about different ways to do blended learning, like mixing face-to-face and online classes, flipping classrooms, rotating schedules, self-blend, using MOOCs, and having flexible courses. These can be changed to fit different situations.

JUSTIFICATION OF THE STUDY

NEP 2020 is making big changes to how we learn in India. This study wants to understand what future teachers think about these changes. We are looking at what pre-service teachers feel about blended learning—mixing online and traditional ways of learning. We want to know their thoughts, what they expect, and what worries them. By knowing all this, we can use their ideas to make blended learning fit



well with what NEP 2020 suggests. This study aims to help in making blended learning work well in the new education system in India.

STATEMENT OF THE PROBLEM

"Exploring Pre-service Teachers' Perspectives on Blended Learning in the Context of National Education Policy 2020."

REVIEW OF THE RELATED STUDIES-

Over the past ten years, there has been an important transformation in the educational landscape due to the emergence of technology-driven instructional practices. One well-known approach is blended learning, which offers flexibility and individualised learning opportunities by combining traditional in-person education with online learning environments. The ability of blended learning to meet the needs of a wide range of learners, increase engagement, and boost academic performance has been acknowledged (Garrison & Vaughan, 2008). The emphasis on integrating technology into teaching and learning has increased since the establishment of India's National Education Policy (NEP) 2020, creating an ideal environment for investigating pre-service teachers' perspectives on blended learning.

Conceptual Framework of Blended Learning-

Blended learning models have evolved from the necessity to integrate face-to-face pedagogy with digital advancements. . Blended learning is effective because it combines the best aspects of both instructional modes, creating better student-centred learning environments, according to scholars like Graham (2013). Garrison, Anderson, and Archer (2000) created the Community of Inquiry (CoI) paradigm, which offers a strong framework for comprehending the dynamics of mixed and online learning contexts. Teaching presence, social presence, and cognitive presence are its three main focusses. Since these factors affect how pre-service teachers perceive and use blended learning approaches, it is essential to comprehend them.

NEP 2020 and Its Educational Reforms-

India's education system is set to undergo a major reform in light of the National Education Policy 2020. In order to make learning more experiential, comprehensive, and learner-centric, the policy promotes pedagogical innovations and emphasises the significance of integrating technology at all educational levels (Ministry of Human Resource Development, 2020). The NEP 2020 states that blended learning



and digital literacy are not just improvement but essential to the future of the educational system . This policy framework provides a special setting for examining pre-service teachers' perceptions of and readiness for blended learning.

Pre-service Teachers' Perspectives on Blended Learning-

The integration of blended learning methods in educational settings has gained considerable attention, especially with the ongoing push for more adaptable and engaging pedagogical strategies. Blended learning, which combines face-to-face instruction with online components, has demonstrated various benefits, contributing to both academic performance and student well-being. Sharma (2022) highlighted that the use of blended learning techniques is notably more effective than traditional teaching methods in enhancing students' academic performance. Additionally, it plays a crucial role in mitigating academic anxiety, which has significant implications for improving the quality of education, particularly in English instruction. These outcomes are linked to reduced anxiety and increased self-efficacy among students.

Further research by Yadav (2022) revealed that students generally have a positive perception of blended learning due to its flexibility and convenience. The blended mode saves resources like time and money and offers a comfortable learning environment. The study also emphasized that content delivered through blended learning supports long-term retention by incorporating various learning approaches. This mode encourages independent learning, a vital skill for academic and personal development.

Parental involvement also emerges as an important factor in the successful implementation of blended learning strategies. According to Neekita (2022), it is essential for parents to be well-informed or oriented about these methods, particularly during parent-teacher meetings. This communication fosters a supportive home environment, contributing to a flexible and convenient learning experience for students.

The perspectives of pre-service teachers on blended learning also reflect optimism and recognition of its advantages. PT Le and HTT Pham (2021) found that pre-service teachers preferred the blended learning approach over solely face-to-face or online methods. The benefits identified include the availability of diverse content, the ability to tailor learning to individual needs, and enhanced interaction between students and teachers. These findings underscore the potential of blended learning to foster more engaging and participative educational experiences.



Additionally, Ketsman (2022) found that prospective teachers who engaged with blended technology integration courses had positive experiences. They appreciated the approach for its efficiency and ability to facilitate self-regulation, independence, and increased productivity. This exposure to blended learning equipped them with the tools to engage in innovative educational practices, showcasing the transformative potential of this teaching methodology.

While the advantages of blended learning are evident, some challenges remain. Naidu (2015) argued that teachers are increasingly recognizing the limitations of traditional teaching methods, particularly in addressing the demands of contemporary education. To overcome these challenges, there is a pressing need for educators to embrace and integrate multimedia resources where available. Moreover, teachers should be encouraged and empowered to create multimedia content, further enhancing the efficacy of their teaching.

Overall, these studies collectively emphasize that blended learning is not only beneficial in terms of academic outcomes but also plays a pivotal role in shaping students' and teachers' experiences in a rapidly evolving educational landscape. The implementation of blended learning strategies requires collaboration among educators, students, and parents to maximize its potential benefits.

Gaps in the Literature

While there is considerable research on the benefits and challenges of blended learning, studies specifically exploring pre-service teachers' perspectives in the context of NEP 2020 remain limited. This gap highlights the need for further empirical research to understand how pre-service teachers perceive, experience, and are prepared to implement blended learning under the new educational reforms.

OBJECTIVES-

1. To highlight the principles of NEP 2020 for Teacher Education.
2. To study the perception of pre-service teachers towards Blended Learning.

RESEARCH DESIGN-

The first part of the study follow a document analysis of NEP 2020 to highlight the principles of teacher education and second part is quantitative descriptive design to explore the perception of pre-service teachers towards blended learning.



POPULATION-

The population of this study include all the pre-service teachers who are studying in Faculty of Education, Jamia Millia Islamia, New Delhi.

SAMPLING PROCEDURE-

The sample of this research constitutes a total of 40 pre-service teachers. Purposive sampling technique is used by the researchers to select a sample from the B.Ed (General) trainee teachers’.

TOOLS OF THE STUDY-

Five-points Likert Scale is developed by the researchers to explore the perception of pre-service teachers towards blended learning.

DELIMINATION OF THE STUDY-

- This study is limited to only pre-service teachers who are studying in B.Ed (General) course.
- This study is limited to only Jamia Millia Islamia, New Delhi.

FINDINGS-

1) NEP 2020: Teacher Education Principles

The principle of National Education Policy 2020 for Teacher Education as mentioned by government include-

- Introduction of Integrated Teacher Education Program (ITEP) to combine content, pedagogy, and practical training to ensure that teachers are well-prepared for the diverse needs of the education system
- The NEP 2020 emphasizes multidisciplinary approach in teacher education to encourages teachers to have exposure to various subjects and disciplines, making them more versatile to addressing the evolving educational landscape.
- It Emphasizes continuous professional development (CPD) for teachers with the creation of National Professional Standards for Teachers (NPST) to guide teacher development and appraisal.



- It emphasizes Redesigned Teacher Education Programs calls for the redesign of teacher preparation programs, focusing on experiential and practical learning.
- NEP 2020 recognizes the importance of technology in education and encourages the integration of technology in teacher education. It promotes the use for effective teaching and learning.
- The policy suggests the transformation of existing teacher training institutions into multidisciplinary institutions. It encourages these institutions to evolve into autonomous degree-granting entities with a focus on holistic education.
- NEP 2020 advocates for providing teachers with global exposure and opportunities for collaboration to enhance the internationalization of teacher education, allowing educators to gain insights from global best practices.
- It emphasizes the need for teacher education to address the diverse needs of learners, including those with special needs.
- NEP 2020 highlights the importance of research and innovation in teacher education, fostering a culture of inquiry promoting evidence-based practices and continuous improvement.

2) Perception of pre-service teachers towards Blended Learning-

Result

To illustrate substantial variations in the perceptions and viewpoints of students regarding the blended learning course, a one-sample t-test was employed. Given that the Likert scale utilized in this research comprised five-item options, the midpoint of the data range, or three (i.e., neutral), was designated as the reference point (Kent State University Libraries, 2017). In order to conduct the single sample t-test, it is essential that the data points are independent of each other and exhibit a normal distribution. The assessment of normality for all data points and variables was carried out utilizing a Q-Q plot examination via the SPSS software. The tabulated results in Table 2 indicate a normal distribution of the data with respect to the variables and overall score, as the plotted data points are predominantly aligned in a linear fashion (Field, 2009). Consequently, a one-sample t-test can be executed for this dataset given its demonstration of a normal distribution. The findings from the one-sample t-test (Table 3) confirm the rejection of the null hypothesis, suggesting a significant variance between the anticipated mean and the actual mean with a confidence level of 95%. Upon closer scrutiny of the discrepancy between these means, it was noted that there exists a variance of more than one item choice for both F2F and BLE, as indicated by the mean disparities in Table 3 (1.08 and 1.12, respectively). Furthermore, a disparity of



greater than half an item choice was observed between the mean values of OLE and TD factors and the reference point of an average of 3. Given the distinct significance of each perspective and viewpoint on blended learning, a detailed analysis of the sub-items within each factor was also conducted using one-sample t-tests.

Preservice teachers’ awareness about the online learning environment of the blended learning

The one-sample t-test findings show values significantly above the forecast point. Indicates high awareness of blended learning among B.Ed. preservice teachers. Results imply positive attitude towards blended learning awareness. Pre-service teachers understand blended learning concept, technologies, challenges, resources, support systems, and government policies.

Table- One sample t-test for Preservice teachers’ awareness about the online learning environment of the blended learning Items in bold are significant

One-Sample Statistics					One-Sample Test			
Items	N	Mean	Std.Dev	Std. Error Mean	t	df	Significance difference (2-tailed)	Mean difference
AW1	60	4.08	1.046	.135	30.231	59	.000	4.083
AW2	60	4.03	1.104	.143	28.294	59	.000	4.033
AW3	60	4.15	1.162	.150	27.667	59	.000	4.150
AW4	60	3.78	1.263	.163	23.195	59	.000	3.783
AW5	60	3.82	1.308	.169	22.598	59	.000	3.817

Blended learning brings advantages to preservice teachers by enhancing their understanding of the online learning environment.

The results of the one-sample t-test regarding the benefits of blended learning (BL) are displayed in Table 4, showing values above the predetermined forecasting point (3) and significant differences.



These findings imply a significant positive impact of BL courses on perceived benefits in the learning environment, as noted by teachers. Particularly, results show preservice teachers hold a favorable view towards BL benefits in classroom settings. They perceive blended learning as advantageous due to improved user-friendliness, resolution of teaching challenges, promotion of global perspectives, cost reduction, equal opportunities provision, enhanced student engagement, support for self-directed learning, use of precise assessment methods, and development of modern teaching skills

Table- One sample t-test for Blended learning brings advantages to preservice teachers by enhancing their understanding of the online learning environment. Items in bold are significant

One-Sample Statistics					One-Sample Test			
Items	N	Mean	Std.Dev	Std. Error Mean	t	df	Significance difference (2-tailed)	Mean difference
ADV1	60	3.72	1.250	.161	23.032	59	.000	3.717
ADV2	60	3.63	1.353	.175	20.808	59	.000	3.633
ADV3	60	3.80	1.286	.166	22.885	59	.000	3.800
ADV4	60	3.80	1.232	.159	23.885	59	.000	3.800
ADV5	60	3.67	1.386	.179	20.492	59	.000	3.667
ADV6		3.68	1.321	.171	21.595	59	.000	3.683
ADV7		4.08	1.109	.143	28.517	59	.000	4.083
ADV8		3.53	1.467	.189	18.659	59	.000	3.533
ADV9		3.58	1.465	.189	18.950	59	.000	3.583

Preservice teachers' challenges about the online learning environment of the blended learning

The study used a one-sample t-test to examine the impact of blended learning on B.Ed. students. Results in Table 6 showed values significantly above the predicted point, indicating challenges in the online environment. Challenges faced by preservice teachers in blended learning impact their attitudes positively. Technical issues like internet connectivity and software availability are identified as obstacles. Access to computers and tablets is crucial yet costly, hindering engagement. Unclear communication and workload balancing are additional challenges in blended courses.

Table- One sample t-test for Preservice teachers' challenges about the online learning environment of the blended learning Items in bold are significant

One-Sample Statistics					One-Sample Test			
Items	N	Mean	St. Error mean	Std. Dev. Mean	t	df	Significance difference (2-tailed)	Mean difference
CH1	60	3.70	.175	1.357	21.125	59	.000	3.700
CH2	60	3.78	.189	1.462	20.039	59	.000	3.783
CH3	60	3.95	.165	1.281	23.881	59	.000	3.950
CH4	60	3.93	.185	1.436	21.211	59	.000	3.933
CH5	60	3.85	.163	1.260	23.671	59	.000	3.850
CH6	60	3.98	.160	1.242	24.847	59	.000	3.983
CH7	60	4.17	.143	1.107	29.149	59	.000	4.167

Preservice teachers' perceptions of the online learning environment within blended learning and its implications for inclusive education.

The one-sample t-test results in Table 6 show that all values for blended learning were significantly above the forecasting point. Inclusion of blended learning is effective for B.Ed. preservice teachers.



Preservice teachers with BL develop positive attitude towards BL for supporting special children, promoting inclusivity, and enhancing educational experience through assistive technology and tailored online activities.

Table- One sample t-test for Preservice teachers' perceptions of the online learning environment within blended learning and its implications for inclusive education. Items in bold are significant

One-Sample Statistics					One-Sample Test			
Items	N	Mean	Std.Err. Mean	Std. Dev. Mean	t	df	Significance difference (2-tailed)	Mean difference
INC1	60	4.08	.160	1.239	25.527	59	.000	4.083
INC2	60	3.67	.188	1.457	19.487	59	.000	3.667
INC3	60	4.10	.152	1.175	27.038	59	.000	4.100
INC4	60	4.00	.168	1.302	23.799	59	.000	4.000
INC5	60	4.02	.164	1.269	24.521	59	.000	4.017

DISCUSSION

In this particular section, the outcomes of the present investigation focusing on the perceptions of preservice educators regarding the blended learning setting implemented in their instructional practices are deliberated in connection with the pertinent literature. Upon conducting an analysis of the students' viewpoints on blended learning individually for each specific factor, a notable emphasis on the blended learning approach was evident. The specific nuances in these variations are elaborated upon extensively below.

Preservice teachers' awareness about the online learning environment of the blended learning –

It consists of 5 items which revealed the awareness of the pre service teachers about the blended learning. When each item constituting the factor was analysed separately, it was revealed that preservice teachers have a good level of awareness regarding various aspects of blended learning, which is essential



for their effective implementation of blended learning strategies in their future classrooms. An examples of the survey questions covering this factor included:

1. I am aware of the concept of blended learning.
2. I am aware of the various technologies and tools used in blended learning.
3. I am aware of the potential challenges associated with blended learning, such as technological issues or student engagement.
4. I am aware of the available resources and support systems for implementing blended learning.
5. I am aware of the government policies related to blended learning.

The favorable reaction from preservice educators concerning their understanding of diverse facets of blended learning can be linked to multiple determinants. Initially, the augmentation of blended learning concepts in teacher training programs has become more prevalent. Prospective teachers are introduced to the notion of blended learning and its diverse elements, including the technologies utilized, potential obstacles, accessible resources and support mechanisms, as well as governmental regulations associated with blended learning, as an integral part of their formal education. Additionally, opportunities for professional growth play a pivotal role in enriching preservice educators' expertise and capabilities in blended learning. Academic institutions and educational bodies organize workshops, seminars, symposiums, and online classes concentrating on blended learning. These avenues furnish preservice teachers with essential knowledge and training required to comprehend and execute blended learning effectively. The availability of information also significantly contributes to preservice teachers' comprehension of blended learning. They can avail a broad array of resources such as publications, scholarly articles, online platforms, and professional associations, aiding them in cultivating a profound understanding of blended learning principles and tactics. Moreover, the assimilation of blended learning principles and methodologies into the teacher education syllabus guarantees that preservice teachers are exposed to blended learning concepts and techniques throughout their educational program. This amalgamation assists them in fostering a profound understanding and awareness of blended learning, equipping them for its efficient application in their forthcoming classrooms. Ultimately, the encouraging atmosphere fostered by educators and mentors motivates preservice teachers to investigate and comprehend various aspects of blended learning. This supportive milieu nurtures their awareness and comprehension, empowering them to proficiently execute blended learning approaches in their prospective classrooms. To conclude, the affirmative response from preservice teachers concerning their



awareness of blended learning can be ascribed to the extensive training, professional development opportunities, information accessibility, curriculum integration, and supportive setting provided by their teacher training programs. These elements collectively contribute to their effective readiness for implementing blended learning tactics in their future classrooms.

Blended learning brings advantages to preservice teachers by enhancing their understanding of the online learning environment

The analysis of the nine survey items targeting the advantages revealed the perception and attitude of the teachers about the blended learning. When each item constituting the factor was analysed separately, a positive significant difference was observed in all items. An examples of the survey questions covering this factor included:

1. The online platforms and tools used in blended learning are user-friendly.
2. Difficulties related to teaching learning can be easily resolved through the use of blended learning.
3. Blended learning fosters a global perspective by connecting students from various locations.
4. Blended learning lowers the cost of education for students.
5. Blended learning provides equal opportunities for all students, regardless of their physical location or personal circumstances.
6. Blended learning contributes to higher levels of student engagement and participation.
7. Blended learning encourages self-directed learning and independent problem-solving skills.
8. The assessment methods used in blended learning accurately reflect the level of understanding and achievement of students.

9. Blended learning equips the person with the skills needed for 21st-century teaching.

The favorable reception from students concerning the benefits of blended learning can be ascribed to numerous factors. Initially, blended learning provides flexibility and convenience, enabling students to acquire course materials and engage in learning activities at their own pace and from any location. The user-friendly online platforms and tools utilized in blended learning facilitate easy navigation and interaction with course content, thereby enhancing the overall learning experience. Blended learning also tackles various obstacles associated with conventional teaching and learning approaches. Students believe that challenges linked to teaching and learning can be effectively resolved through the



incorporation of blended learning. The amalgamation of online and face-to-face instruction offers students diverse learning prospects, promoting a deeper comprehension of course materials. Moreover, blended learning promotes a global outlook by connecting students from different regions. Through online discourse, collaborative ventures, and virtual classrooms, students can engage with peers from diverse cultural backgrounds, improving their cross-cultural communication and teamwork skills. Another notable advantage of blended learning is its cost-effectiveness. By diminishing the necessity for physical classroom space and printed materials, blended learning reduces the educational expenses for students. This enhances accessibility and affordability of education, particularly for students from economically disadvantaged backgrounds. Additionally, blended learning ensures equal opportunities for all students, irrespective of their geographical location or personal circumstances. Students facing obstacles to traditional classroom attendance, such as distance, personal obligations, or physical impairments, can actively participate in blended learning courses. Furthermore, blended learning cultivates increased levels of student involvement and participation. The blend of online and face-to-face instruction facilitates a range of learning activities, including interactive multimedia presentations, virtual simulations, and group discussions, which stimulate active learning and student engagement. Moreover, blended learning encourages self-directed learning and autonomous problem-solving skills. Students are empowered to take charge of their learning process, accessing online resources, completing self-paced modules, and collaborating with peers to tackle real-world issues. Furthermore, the evaluation methods employed in blended learning accurately mirror students' comprehension and accomplishments. By combining online quizzes, assignments, projects, and conventional exams, instructors can offer prompt feedback and customize instruction to meet students' individual requirements. Finally, blended learning equips students with the aptitudes necessary for 21st-century teaching and learning. By integrating technology into the learning process, students cultivate digital literacy, critical thinking, communication, and collaboration skills, which are vital for success in today's rapidly evolving world. To conclude, the positive response from students regarding the advantages of blended learning can be ascribed to its flexibility, convenience, cost-effectiveness, inclusivity, engagement, and skill development opportunities. These elements collectively enhance the learning experience and better prepare students for the challenges of the 21st century.

Elementary preservice teachers' challenges about the online learning environment of the blended learning

The analysis of seven survey items targeting the challenge which revealed the perception and attitude of the teachers about the blended learning. When each item constituting the factor was analysed separately, a positive significant difference was observed in all items. A few examples of the survey questions covering this factor included

1. Blended learning poses technical challenges that hinder a smooth learning.
2. Access to the necessary hardware (computer, tablet, etc.) for effective participation in blended learning is required
3. The cost of technology (e.g., devices, internet) is a significant barrier to engagement in blended learning.
4. Accessibility barriers, such as internet connectivity, the availability of required software or specific devices, hinder engagement in blended learning.
5. The lack of clear communication and guidelines creates challenges in understanding expectations in blended learning.
6. Balancing the workload between online and in-person components is a challenge in blended courses.
7. Accessibility barriers, such as the availability of required software or specific devices, hinder engagement in blended learning.

Students' favorable reception of the challenges associated with blended learning can be linked to various factors. Initially, the technical hurdles presented by blended learning impede seamless learning. Nevertheless, students might interpret these obstacles as chances for personal development and educational advancement. The presence of technical challenges can spur students to enhance their problem-solving abilities and enhance their proficiency in utilizing technology, skills that are increasingly crucial in the contemporary digital landscape. Furthermore, possessing the essential hardware, such as computers or tablets, is imperative for effective engagement in blended learning. While this might be perceived as a difficulty at first, it underscores the significance of digital literacy and technological access in present-day educational settings. Students acknowledge the importance of technological access and comprehend its necessity for their academic achievements. Moreover, the financial burden associated with technology, encompassing devices and internet connectivity, serves as a



notable barrier to active participation in blended learning. Nonetheless, students may consider this barrier as a catalyst for innovation and creativity. They may explore alternative avenues, like utilizing resources from libraries or free online tools, to surmount financial obstacles and engage meaningfully in blended learning activities. In addition, impediments to accessibility, such as internet connectivity issues and the availability of requisite software or specific devices, impede involvement in blended learning. Despite these obstacles, students may exhibit resilience and perseverance in seeking solutions. They may leverage offline resources, communicate challenges with instructors, and collaborate with peers to conquer accessibility barriers and engage fully in blended learning endeavors. Furthermore, the absence of clear communication and guidelines can lead to difficulties in grasping expectations within blended learning environments. However, students could perceive this as an opportunity to hone effective communication competencies and advocate for their learning requirements. They may actively interact with instructors to clarify expectations, solicit feedback, and ensure a fruitful learning journey. Moreover, managing the workload between online and in-person components poses a challenge in blended courses. Nevertheless, students might regard this challenge as a chance to refine time management and organizational proficiencies. They could employ strategies like devising a study timetable, prioritizing tasks, and seeking guidance from instructors to effectively navigate their workload and excel in blended learning settings. In conclusion, students' positive response towards the challenges entailed in blended learning can be ascribed to their resilience, determination, and readiness to surmount obstacles. Despite encountering hurdles, students exhibit an optimistic outlook and proactive stance towards their learning, thereby enhancing their blended learning experience.

Preservice teachers' perceptions of the online learning environment within blended learning and its implications for inclusive education.

This survey factor consisted of five items that revealed the perception and attitude of the teachers about the inclusion of blended learning. When each item constituting the factor was analysed separately, it was seen that all of perception and attitude of the teacher no significantly different from the expected values. This no significant difference implied that teachers had positive attitude and perception about the inclusion. A few examples of the survey questions covering this factor included

1. Blended learning provides effective support for the diverse needs of special children in the classroom.



2. The institution provides sufficient resources and training to help pre-service teachers support special children in blended learning.
3. Blended learning promotes inclusivity by providing equal opportunities for special children.
4. Online assessments and activities are designed to accommodate the needs of special children
5. The use of assistive technology in blended learning positively impacts the educational experience of special children

The favorable reception among educators towards the integration of blended learning can be ascribed to various factors.

Initially, blended learning serves as an effective means of catering to the diverse requirements of exceptional students within the educational setting. Educators acknowledge that blended learning presents a myriad of tools and materials that can be customized to address the unique needs of special children. The adaptability of blended learning enables instructors to individualize instruction, offer supplementary assistance, and cater to varying learning preferences, thereby ensuring that all students, particularly those with special needs, can effectively access and engage with the curriculum. Furthermore, educational institutions furnish adequate resources and training to aid prospective educators in supporting special children through blended learning. Teachers undergo training and professional development sessions that furnish them with the requisite knowledge and competencies to seamlessly integrate assistive technology, devise comprehensive assessments, and formulate accessible learning resources. This training empowers educators to establish an inclusive learning atmosphere conducive to the academic success of all students. Moreover, blended learning fosters inclusivity by affording equal prospects to special children. Educators acknowledge that blended learning dismantles physical and geographical barriers, enabling students to access learning materials and partake in classroom activities irrespective of their location and time. This flexibility guarantees that special children are afforded the same learning opportunities and academic achievements as their peers. Additionally, online assessments and activities are tailored to accommodate the unique needs of special children. Instructors can leverage an array of assessment tools and techniques, including adaptive quizzes, multimedia presentations, and virtual simulations, to effectively evaluate student learning and progress. These versatile assessment methods enable educators to gauge student comprehension and accomplishments in a manner that is both accessible and significant for special children. Furthermore, the integration of assistive technology in blended learning positively influences the educational journey of special children. Educators can harness various assistive technologies, such as screen readers, speech-



to-text software, and alternative input mechanisms, to aid special children in accessing and interacting with the curriculum. These technologies empower special children to surmount learning obstacles and participate fully in classroom endeavors. In conclusion, the affirmative reception from educators towards the incorporation of blended learning can be attributed to its efficacy in supporting the diverse needs of special children, the provision of resources and training, its advocacy for inclusivity, its accommodation of varying learning styles and needs, and the beneficial impact of assistive technology on the educational experience of special children. Collectively, these elements foster a positive and inclusive learning environment where all students, including those with special needs, can thrive.

Major findings-

The results of this research shed light on the perceptions and attitudes of pre-service educators towards blended learning, in addition to their understanding, perceived advantages, challenges, and impacts on inclusive education. Initially, the investigation unveiled that pre-service teachers display a heightened level of understanding concerning various facets of blended learning. They exhibited a solid comprehension of blended learning principles, technologies, obstacles, resources, support structures, and governmental regulations. This favorable understanding is linked to the extensive preparation, opportunities for professional growth, accessibility to information, integration into the curriculum, and encouraging atmosphere offered by their teacher training schemes.

Subsequently, pre-service teachers recognized numerous advantages linked to blended learning. They acknowledged its adaptability, ease of use, cost-efficiency, inclusiveness, engagement, and opportunities for skill enhancement. Blended learning was perceived as beneficial due to its capacity to tackle instructional difficulties, foster global outlooks, ensure equal chances for all students, boost student involvement, encourage self-directed learning, employ precise evaluation methods, and cultivate contemporary teaching abilities.

Nevertheless, pre-service teachers also acknowledged various hurdles associated with blended learning. These obstacles encompassed technical difficulties, the necessity for access to essential hardware and technology, financial constraints, accessibility impediments, unclear directives and communications, and balancing workloads between online and face-to-face components. Despite these challenges, pre-service teachers exhibited resilience, determination, and a proactive attitude towards surmounting obstacles, thereby enriching their blended learning encounter. Lastly, pre-service teachers viewed blended learning as an effective tool for advancing inclusive education. They recognized its capacity to cater to the



diverse requirements of special needs students in the classroom, offer equal opportunities, cater to different learning styles and needs, and positively influence the educational journey of special needs students through the utilization of assistive technology. In conclusion, the outcomes of this study emphasize the significance of incorporating blended learning principles and methodologies into teacher training programs. It is evident that pre-service teachers acknowledge the potential of blended learning to enrich teaching and learning experiences, cater to varied learning needs, and advocate for inclusive education. Hence, it is imperative for teacher training establishments to persist in delivering comprehensive training, resources, and assistance to ensure that pre-service teachers are suitably equipped to proficiently implement blended learning approaches in their forthcoming classrooms.

Conclusion-

The outcomes of this investigation emphasize the perspectives and attitudes of future educators towards blended learning, presenting valuable perspectives into their comprehension, perceived benefits, challenges, and impacts on inclusive education. The research suggests that prospective educators possess a firm grasp of blended learning principles, technologies, obstacles, resources, support systems, and governmental policies. They acknowledge numerous advantages linked to blended learning, including its flexibility, user-friendliness, cost-effectiveness, inclusivity, engagement, and opportunities for enhancing skills. Nevertheless, they also recognize several obstacles such as technical issues, access to hardware and technology, financial limitations, availability concerns, ambiguous guidelines, and workload management. Furthermore, prospective educators consider blended learning as a potent instrument for promoting inclusive education, realizing its ability to meet the diverse needs of students with special requirements, provide equal opportunities, address various learning styles and needs, and positively impact the educational journey of students with special needs by leveraging assistive technology. In light of these findings, it is apparent that the National Education Policy (NEP) 2020, which stresses the integration of blended learning in the educational framework, is effecting significant transformations in the learning landscape of India. This exploration aimed to grasp the viewpoints of future educators on these alterations. By examining the opinions, anticipations, and reservations of prospective educators regarding blended learning, the investigation aspires to contribute to the efficient execution of blended learning approaches in line with NEP 2020. To summarize, the research furnishes valuable perspectives that can be harnessed to guarantee that blended learning aligns effectively with the aims and goals articulated in NEP 2020. By integrating the thoughts and input of future educators, this



study endeavors to facilitate the incorporation of blended learning as an essential and potent component of the new educational paradigm in India.

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