



Attitudes of University Students Towards Blended Learning in India

Amit Kumar^{ID}, Chhaya Soni^{ID},

Submission:

Apr 20, 2026

Acceptance:

May 25, 2026

Published:

Jun 30, 2026

Faculty of Education (K), Banaras Hindu University, Varanasi, Uttar Pradesh, India

Faculty of Education (K), Banaras Hindu University, Varanasi, Uttar Pradesh, India

*Corresponding Author: sharmaedu098@gmail.com

<https://doi.org/10.66412/ed.v35i2.114>

Abstract

The global shift toward technology-integrated pedagogy has intensified interest in blended learning, yet empirical evidence examining teacher educators' attitudes within Indian higher education remains limited, particularly among postgraduate education students. Moreover, few studies have investigated whether demographic variables such as gender, locality, and academic year significantly influence these attitudes. This gap is consequential given that the National Education Policy 2020 explicitly advocates inclusive, learner-centered, technology-enhanced instructional models. Grounded in this policy imperative and supported by Birbal, Ramdass, and Harripaul's conceptual framework, the present study examined attitudes of 110 M.Ed. students at Banaras Hindu University toward blended learning across six dimensions, namely online learning, classroom learning, online interaction, technology use, learning flexibility, and online environment. A descriptive survey design with a self-constructed, validated e-questionnaire was employed. Independent samples t-tests revealed no statistically significant attitudinal differences based on gender, locality, or academic year. Students demonstrated predominantly favourable attitudes, particularly toward learning flexibility and online environment, affirming blended learning as a viable and preferred pedagogical approach in contemporary teacher education.

Keywords: Attitude, blended learning, NEP2020, technology integration, traditional teaching

To cite this article:

Kumar, A. & Soni, C. (2026). Attitudes of university students towards blended learning in India. *Education and Development*, 35(2). 49–60. <https://doi.org/10.66412/ed.v35i2.114>

Introduction

The landscape of higher education has undergone considerable change over the past decade, and perhaps no shift has been more consequential than the growing integration of digital technologies into everyday classroom practice. Among the instructional approaches that have emerged from this transformation, blended learning has attracted sustained attention from educators, researchers, and institutional policymakers alike. Broadly understood as the deliberate combination of face-to-face teaching with online learning components, blended learning aims to create environments that are more flexible, accessible, and responsive to the diverse needs of contemporary learners (Ahmed, 2025; Kumar & Soni, 2023). While its technical definition varies across the literature, the consensus is that it represents something more than simply adding a digital layer to traditional instruction; it is a pedagogical redesign that asks both teachers and students to rethink how knowledge is shared and constructed.

The COVID-19 pandemic significantly accelerated the adoption of blended and hybrid formats across universities worldwide. What had previously been treated as an innovative but optional approach became, for many institutions, an educational necessity (Angawi & Tasir, 2024). This rapid expansion brought renewed scholarly interest in understanding how students experience and respond to blended learning, particularly at the university level where learner autonomy, self-regulation, and digital competence play a central role in academic success. Research conducted in the post-pandemic period consistently shows that blended learning holds genuine promise for improving engagement, motivation, and learning outcomes, but also confirms that its effectiveness depends heavily on how students perceive and relate to the model (She et al., 2025; Younas et al., 2025).

Student attitudes, in this context, deserve particular scholarly attention. Attitudes are not passive opinions; they shape behavior, influence participation, and ultimately



determine whether a given instructional model succeeds or fails in practice. Yu et al. (2025) demonstrated in a physical education context that student attitudes toward blended learning act as a significant mediator between course design and actual learning engagement, suggesting that how students feel about a learning environment can be just as important as the environment itself. Similarly, Lv and Li (2024) found that behavioral intentions, shaped in part by how enjoyable, useful, and manageable students find blended learning, are among the strongest predictors of academic effectiveness. These findings collectively point to a relationship between attitude and outcome that cannot be overlooked by institutions designing or expanding blended programs.

Despite this growing body of evidence, several important gaps persist in the literature. While studies on blended learning have grown considerably in volume, the majority of available evidence originates from China, Western nations, and select regions of Southeast Asia, with South Asian higher education contexts remaining substantially underrepresented in the scholarly record (Angawi & Tasir, 2024; Sareen & Mandal, 2024). Much of the existing attitudinal research also tends to treat students as a largely homogeneous group, overlooking how variables such as academic discipline, year of study, gender, and prior digital learning experience may produce meaningfully different orientations toward blended formats (Amiruddin et al., 2024; Tong et al., 2022). Furthermore, most studies reviewed have focused primarily on measuring learning outcomes, performance gains, or technology acceptance rather than examining student attitudes as a central and independent object of inquiry, meaning that attitude is often treated as a background variable rather than as a phenomenon deserving sustained investigation in its own right (Lv & Li, 2024; She et al., 2025). Barriers such as limited digital infrastructure, inadequate instructor support, and uneven self-regulatory capacity continue to shape student experiences in ways that context-sensitive attitude research has yet to fully address (Kyei-Akuoko et al., 2025). No published study has examined this question within the institutional setting of Banaras Hindu University, a central university that serves a large, diverse, and academically heterogeneous student population across disciplines ranging from humanities and social sciences to science, engineering, and medicine. Given that institutional culture, infrastructure, and student demographics all shape how blended learning is received, findings from other national and international contexts cannot be straightforwardly applied here. The present study therefore addresses this gap directly by asking: What is the attitude towards blended learning among students at Banaras Hindu University?

Literature Review

Conceptual Review: Blended Learning

Blended learning, integrating traditional classroom teaching with digital technologies, has become an effective method for enhancing the overall teaching-learning process. It supports differentiated instruction, catering to the unique needs of both high-achieving and struggling learners, thereby increasing engagement and comprehension (Singh & Reed, 2001). This approach encourages self-directed

and personalized learning, allowing students to navigate through varied educational environments that enhance their capacity to learn and process knowledge (Graham, 2006).

Blended learning also facilitates active interaction among regional, national, and international teaching communities by creating opportunities for collaborative engagement. Activities such as live discussions, online forums, brainstorming sessions, and debates help in developing communication skills while promoting the exchange of diverse ideas (Hrastinski, 2008). These collaborative platforms enrich the educational experience and build a more inclusive, participatory, and effective learning environment. Creating, advancing, and delivering online courses in blended learning must change immediately (Krasnova & Vanushin, 2016).

Blended learning fosters vital 21st-century abilities such as communication, digital literacy, creativity, and technological proficiency. Yet, the success of this approach largely depends on learners' preparedness and ability to participate effectively in blended learning settings. (Zurita, Jerez et al., 2015).

Blended learning is a teaching approach that merges in-person instruction with technology-based learning, providing students with a more flexible and engaging educational experience (Lalima & Dangwal, 2017). It integrates digital and physical learning spaces, allowing students to benefit from traditional and online methods. While mixed learning incorporates various instructional modes, blended learning specifically unifies in-person and online learning within a cohesive framework (Singh & Reed, 2001). This approach supports learners in achieving educational goals by utilizing the strengths of both classroom and digital formats. Bonk and Graham (2006) state that blended learning merges the benefits of conventional teaching and e-learning. However, it may extend beyond these formats to encompass a broader range of instructional strategies.

Review of Related Literature

Das (2021) underscores the significant increase in student achievement that can be achieved by implementing blended learning early. This positive outcome not only benefits students but also motivates and encourages teachers to continue with such effective learning methodologies.

Raymond (2019) studied the attitudes of high school teachers towards Blended learning and how teachers' decisions affect the implementation of Blended learning. The 11 participating teachers for the study were selected from four different schools. Collected the data based on semi-structured interviews, and qualitative analysis resulted in teachers' positive attitudes towards Blended learning and its implementation.

Khan (2016) investigated prospective educator attitudes concerning blended methodologies, discovering comparable positive orientations among both genders and across marital and geographic classifications. Findings emphasized that augmented preparation and practical engagement substantially elevate competency in blended pedagogical approaches.

Thiyagu (2011) assessed B.Ed. trainees' perspectives on blended learning within mathematics instruction, surveying 150 participants from a Tamil Nadu institution. Results demonstrated predominantly affirmative responses toward hybrid educational frameworks.

Birbal, Ramdass, and Harripaul (2018) evaluated perceptions among 807 student educators at the University of Trinidad, identifying technology incorporation and temporal adaptability as primary perceived strengths. Positive correlations surfaced between technological implementation, digital instruction, and participatory communication. However, inverse associations emerged between virtual environments and conventional classroom structures. The investigation sought to ascertain trainee preparedness for hybrid pedagogies while examining recognized advantages and implementation obstacles inherent in merging technological and traditional instructional elements.

Nayak and Panda (2018) investigated the attitudes of 100 student teachers in West Bengal toward blended learning for secondary social skill development. The findings indicated that male and female instructors had significantly different views, suggesting that blended learning is good for the social development of secondary pupils. The study emphasizes how crucial blended learning is to instruction.

Yilmaz and Malone (2020) examined the attitudes of 42 prospective teachers from the University of Turkey towards blended learning in science subjects. The findings revealed that students had similar experiences and attitudes towards blended learning, suggesting it can alleviate their fears. However, the study also highlighted the need for periodic teacher training and basic resources for effective Blended learning.

Saboowala and Manghirmalani (2020) examined working educators' perspectives regarding blended learning frameworks in India during the post-pandemic period. Through simple random selection, 313 educators participated in the investigation with data collection occurring across webinar sessions, professional development workshops, and educational conferences. Statistical examination utilizing SPSS-26 unveiled marked distinctions in educator orientations contingent upon prior participation in structured professional programs. Educators who attended specialized training initiatives and digital seminars recognized substantial pedagogical benefits of hybrid instructional models in advancing both teaching quality and student learning outcomes. The research underscores the significance of blended learning within contemporary educational systems.

Balusamy and Indrani (2021) examined educator perspectives among 450 secondary school instructors across Tamil Nadu institutions, assessing receptiveness toward integrated instructional approaches combining conventional and technological methods. Results indicated predominantly constructive dispositions among participants. Analysis identified meaningful variations correlated with professional demographics, including gender classification, institutional setting, and instructional tenure. Educators possessing extensive experience spanning ten to twenty years or beyond demonstrated substantially more favorable orientations compared to their counterparts.

Conversely, institutional type differentiations between private and supported schools yielded no significant attitudinal disparities, as did experience categories below ten years. The investigation emphasizes how demographic characteristics influence educator perspectives toward pedagogical innovation and the adoption of technology-enhanced instructional strategies.

Kumar and Soni (2023) explored blended learning as a thoughtfully planned integration of classroom and online instruction, rather than a simple combination of two formats. Their study highlighted that NEP 2020 actively encourages such approaches in Indian education. Models like flipped and flex learning, alongside platforms such as SWAYAM and MOOCs, were identified as practical tools for developing self-directed, digitally capable learners.

Yang and Chano (2025) found that blended learning significantly improves English proficiency in higher education, especially listening, speaking, reading, and writing. Their systematic review of 30 high-quality studies showed that the strongest gains came from timely feedback, self-paced learning, flipped classrooms, mobile tools, and collaborative activities. The study indicates that the careful integration of online and face-to-face instruction in blended learning maximizes effectiveness by fostering autonomy, interaction, and skill development.

Almekhlafi et al. (2025) found that university students in the UAE viewed blended learning positively because it improved satisfaction, engagement, and access to learning materials. The study also showed that course quality, instructor support, and online resources mattered more than the delivery mode alone. Computer skills influenced perceptions, while academic level and internet use did not. Overall, the findings indicate that effective blended learning occurs when technology, content, and teaching align well.

Mohammadi et al. (2025) examined blended learning in five European universities and found that success depends on user-friendly platforms, clear pedagogical design, teacher training, and technical support. The study also showed that interactive tools, regular feedback, and face-to-face elements help improve student motivation and socialization. Overall, blended learning works best when institutions align technology with teaching goals and provide sustained support for both teachers and students.

Arifin et al. (2025) analyzed 181 Scopus articles and showed that blended learning has expanded rapidly as education has become more digital. Their bibliometric findings highlight Indonesia as the most productive country, the University of Cape Coast as the leading institution, and the *International Journal of Emerging Technologies in Learning* as the most active journal. The study suggests that blended learning will remain important, although infrastructure and readiness challenges still need attention.

Istenič (2024) argues that blended learning in higher education works best when technology is used to strengthen authentic learning, feedback, and student engagement. The review shows that blended learning has evolved from

simple mixing of online and face-to-face teaching into integrated and distributed models shaped by digitalization, artificial intelligence, and post-COVID changes. It also emphasizes digital literacy, formative assessment, and contextual learning as key benefits.

Cao (2023) synthesized 29 studies and found that blended learning generally improves student performance, attitudes, and achievement across countries, but it does not consistently increase engagement. The strongest gains appeared in China, the United Arab Emirates, Vietnam, and several other settings, while results in the United States were mixed. Overall, the meta-analysis suggests blended learning is beneficial when well designed, yet its impact depends on context and instructional quality.

Lv and Li (2024) found that blended learning improves college students' learning effectiveness when it strengthens behavioral intention and self-efficacy. Using data from 167 students and the UTAUT2 model, the study showed that performance expectancy, effort expectancy, hedonic motivation, and facilitating conditions positively shaped willingness to use blended learning, while self-efficacy also directly improved outcomes. The findings suggest that engaging design, platform support, and student confidence are crucial for effective blended learning.

Han (2023) developed and validated a six-factor scale for evaluating blended learning and found that course overview, objectives, assessment, resources, activities, and technology support functioned as one coherent system. The study also showed a strong positive link between perceived blended learning effectiveness and student learning outcomes among undergraduates. Overall, the findings suggest that well-designed blended learning improves academic achievement when instructional design, feedback, and technological support are aligned.

Methods

This study employed a descriptive survey design to systematically address two broad objectives. The first objective explored M.Ed. students' attitudes toward blended learning across six key dimensions, namely online learning, classroom learning, online interaction, technology use, learning flexibility, and online environment. The second objective investigated significant differences in attitudes based on selected demographic variables, specifically gender, locality, and academic year. Data were collected through a structured e-questionnaire administered to a purposively selected sample of M.Ed. students. Descriptive and inferential statistical techniques, including mean, standard deviation, and t-test, were applied to analyze the collected data, ensuring objective and reliable interpretation of findings aligned with both research objectives.

Sampling

The total population of the present study comprised 124 university students of BHU (i.e., M.Ed. students at FOE, Banaras Hindu University), session 2022-23. Using a simple random sampling technique, 110 students were selected as the sample, representing approximately 88.7% of the total population. This high degree of representativeness

strengthens the reliability and generalizability of the findings (Kothari, 2004). The sample included adequate representation of students across all selected variables, namely gender (male and female), locality (rural and urban), and academic year (first year and second year).

Banaras Hindu University. Banaras Hindu University (BHU), founded by Mahamana Pandit Madan Mohan Malaviyaji in 1916, is one of the most prestigious central universities in India, with the Hon'ble President of India serving as its Visitor. Recognized as the largest residential university in Asia, BHU is spread across 550 hectares (1,360 acres) in the holy city of Varanasi. The university enrolls over 30,000 students from across India and 65 foreign countries, offering programs spanning science, technology, humanities, medicine, law, and agriculture. Its holistic model of education blends ancient Indian wisdom with modern scientific inquiry, nurturing students' intellectual and creative development (Banaras Hindu University, n.d.).

Data Collection Tools

The researcher designed a self-constructed questionnaire grounded in the framework proposed by Birbal et al. (2018), which explored student teachers' attitudes toward blended learning. This instrument was developed to assess the perceptions of M.Ed. students across six key dimensions: online learning, classroom learning, online interaction, technology use, learning flexibility, and the online environment. The questionnaire comprised 25 items, each measured on a five-point Likert scale from Strongly Agree to Strongly Disagree. To establish content validity, education experts reviewed the tool for face validity. A pilot study with a similar group was conducted to assess its reliability, yielding a Cronbach's alpha of 0.84, which indicates strong internal consistency. This thorough validation process confirmed that the instrument was both reliable and suitable for evaluating M.Ed. students' attitudes toward blended learning.

Data Analysis Process

The responses obtained through the attitude scale were summated to derive composite scores for each dimension as well as for the scale as a whole. Since the scale comprised multiple Likert-type items rated on a five-point continuum, the composite scores were treated as interval-level data, a practice that is widely accepted and methodologically justified in educational and psychological research (Norman, 2010).

To ensure the appropriateness of parametric statistical techniques, the normality of the data distribution was examined through both statistical and graphical methods that show the mean (90.8) and median (90.0) were approximately equal, suggesting a symmetrical distribution of scores. The skewness value (-0.273), with its critical ratio of -1.187 , fell well within the acceptable threshold of ± 1.96 , indicating no significant departure from normality. Furthermore, the Shapiro-Wilk test returned a non-significant result ($W = 0.983$, $p = 0.167$) at the 0.05 level of significance, confirming that the null hypothesis of normality could not be rejected. The Normal Q-Q Plot corroborated these statistical findings, as the observed data points were closely aligned along the diagonal reference line throughout the distribution, with only a minor deviation at the lower extreme attributable to a single outlier, which

did not substantially compromise the normality of the overall distribution. The data thereby satisfied all fundamental prerequisites for the application of parametric statistics, namely interval-level measurement, approximate normality of distribution, and independence of groups.

In view of these conditions, and given that the study aimed at comparing means across two independent groups on three dichotomous variables, specifically gender (male and female), locality (rural and urban), and academic year (first year and second year), the independent samples t-test was identified as the most suitable and statistically justified analytical tool for the present study (Field, 2018; Garrett & Woodworth, 1981). The level of significance was set at 0.05 for all statistical analyses undertaken in the study.

Results

Table 1, analyzing student responses across six dimensions: Online Learning, Classroom Learning, Online Interaction, Technology use, Learning Flexibility, and Online Environment—reflects a generally favourable attitude toward blended learning, albeit with certain reservations. In online learning, approximately 68.72% of students agreed with positive statements, suggesting that many appreciate the convenience, time management, and access to rich instructional content that online platforms offer. However, only 56.36% believed they could study more effectively online, indicating some scepticism regarding

its overall effectiveness. In contrast, classroom learning retained strong support, especially in areas involving teacher guidance and social interaction. A striking 90% of students agreed that classroom settings foster a sense of community, and 83.64% felt they learned better when personally guided, affirming the enduring value of face-to-face education. When examining online interaction, about 64.09% of students reported positive experiences, particularly in accessing information and communicating via platforms like Google Classroom. However, concerns about digital communication barriers were relatively low, as 77.27% disagreed that a lack of resources severely hampers interaction. Regarding technology use, 53.63% of students felt confident using tools like MS Office, and 85.45% found technology beneficial for completing assignments. Nonetheless, 50.91% admitted difficulty identifying valid information online, suggesting a gap in digital literacy. Learning flexibility emerged as the most positively perceived dimension, with 86.66% of students appreciating the ability to study at their own pace and convenience. Lastly, the online environment dimension showed that 71.81% of students favoured online modes, though 79.09% acknowledged that the lack of technically trained teachers could affect the quality of blended learning. Overall, while students recognize the benefits of online education, they still value the structured, interactive nature of traditional classrooms, indicating the need for a well-balanced and supportive blended learning model.

Table-1: Dimension-wise Data Analysis

DIMENSION	STATEMENT	SA + A	NEUTRAL	DA + SDA	SA + A %	NEUTRAL%	DA + SDA%	DIMENSION%		
								AGREE	NEUTRAL	DISAGREE
Online learning	I am not opposed to my lessons being taught through an online medium.	74	11	25	67.27	10.00	22.73	68.72	12.18	19.09
	I prefer online learning because it provides me with rich instructional material.	79	12	19	71.82	10.91	17.27			
	By studying through an online medium, I can utilize my time correctly and organize it better as per my work.	82	8	20	74.55	7.27	18.18			
	I can do my studies more effectively online.	62	19	29	56.36	17.27	26.36			
	I am ready to create effective online study schedules at all times.	81	17	12	73.64	15.45	10.91			
Classroom learning	I feel that traditional learning is more effective compared to learning through an online platform.	7	12	91	6.36	10.91	82.73	55.45	10.30	34.24
	I can learn more effectively through classroom teaching.	8	16	86	7.27	14.55	78.18			
	I experience a feeling of social connection when interacting with other students in the classroom.	99	6	5	90.00	5.45	4.55			
	I dislike studying in a classroom (traditional teaching medium).	74	19	17	67.27	17.27	15.45			
	I learn better with teacher-guided classroom-based activities.	86	8	16	78.18	7.27	14.55			
	I learn better, when someone personally guides me toward offline learning.	92	7	11	83.64	6.36	10.00			
Online Interaction	I can easily get information about the work given by the teacher on Google Classroom.	100	7	3	90.91	6.36	2.73	64.09	10.22	25.68
	I am able to communicate effectively with others through online tools such as email, chat, and discussion forums.	85	9	16	77.27	8.18	14.55			
	A lack of resources makes it difficult for students and teachers to communicate effectively using the Blended learning approach.	18	7	85	16.36	6.36	77.27			
	I make the opinions and information others provide in online seminars part of my studies.	79	22	9	71.82	20.00	8.18			

Technology Use	I am comfortable using Excel and MS Office on a computer.	85	10	15	77.27	9.09	13.64	53.63	11.13	35.22
	I do not like to use technology in my studies.	23	10	77	20.91	9.09	70.00			
	I can do the assignments easily with the use of technology.	94	9	7	85.45	8.18	6.36			
	I am unable to identify valid facts to study from online websites.	34	20	56	30.91	18.18	50.91			
Learning Flexibility	I believe that all the study-related materials are readily available on online platforms.	87	8	15	79.09	7.27	13.64	86.66	6.06	7.27
	I want the freedom to study when and where I want.	95	10	5	86.36	9.09	4.55			
	I like to read at my own pace.	104	2	4	94.55	1.82	3.64			
Online Environment	I prefer to study online.	72	18	20	65.45	16.36	18.18	71.81	16.66	11.51
	I agree that remembering assignment due dates is more likely online.	78	22	10	70.91	20.00	9.09			
	I agree that students do not get a proper environment due to a lack of technically qualified teachers for teaching mixed methods.	87	15	8	79.09	13.64	7.27			

[Sources: SPSS & Excel Analysis]

*(SA- Strongly Agree, A- Agree, DA- Disagree, SDA- Strongly Disagree)

Dimension-wise Analysis

Dimension 1: Online Learning

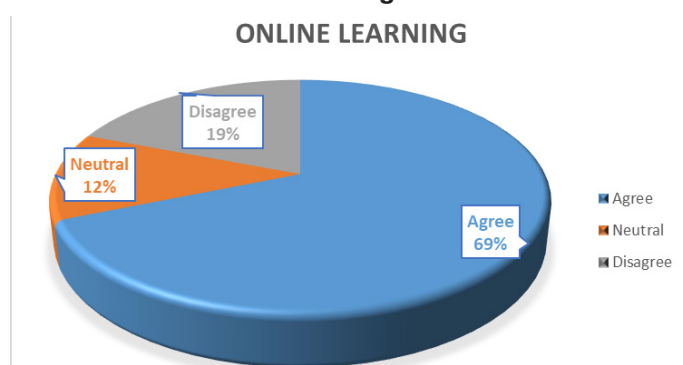


Figure 1: Online Learning

(Figure 1) The pie chart indicates that M.Ed. students' attitudes toward the online learning dimension of blended learning reveal that 69% agree, 12% are neutral, and 19% disagree. It suggests that students have access to online instructional materials and knowledge about online learning, making them inclined to prefer online study. Improving access to educational resources and technological tools online could further enhance the percentage of students with a favourable attitude.

Dimension-2: Classroom Learning

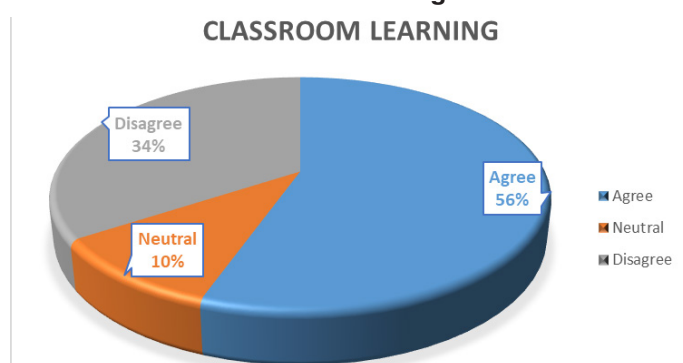


Figure 2: Classroom Learning

(Figure 2) The pie chart demonstrates that M.Ed. students' attitudes toward the classroom learning dimension of

blended learning indicate that 56% agree, 10% are neutral, and 34% disagree. To improve attitudes toward classroom learning, it is essential to make the learning environment more engaging and student-centred.

Dimension 3: Online Interaction

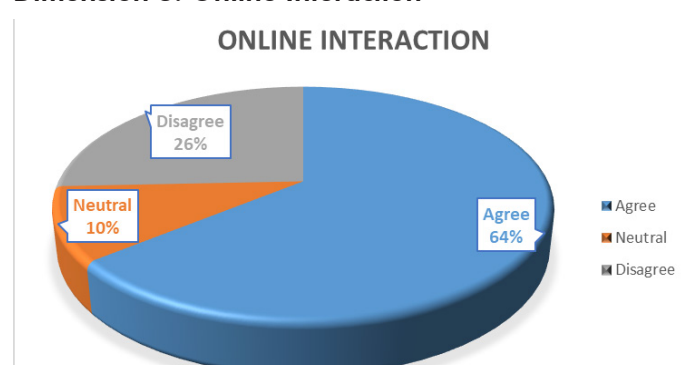


Figure 3: Online Interaction

(Figure 3) The pie chart indicates that M.Ed. students' attitudes toward the Online Interaction dimension of blended learning show that 64% agree, 10% are neutral, and 26% disagree. To enhance online interaction, it is crucial to increase the availability of technical tools and conduct workshops to improve knowledge and proficiency in their use.

Dimension 4: Technology Use

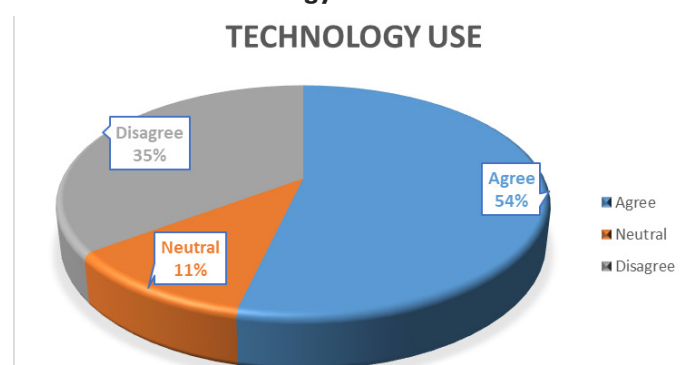


Figure 4: Technology Use

(Figure 4) The pie chart reveals that M.Ed. students' attitudes toward the Technology Use dimension of blended learning show that 54% agree, 11% are neutral, and 35% disagree. To enhance the use of technology in this context, it is essential to improve students' access to technological tools and offer workshops focused on technology utilization. These measures could lead to a more favourable attitude toward technology among students.

Dimension 5: Learning Flexibility

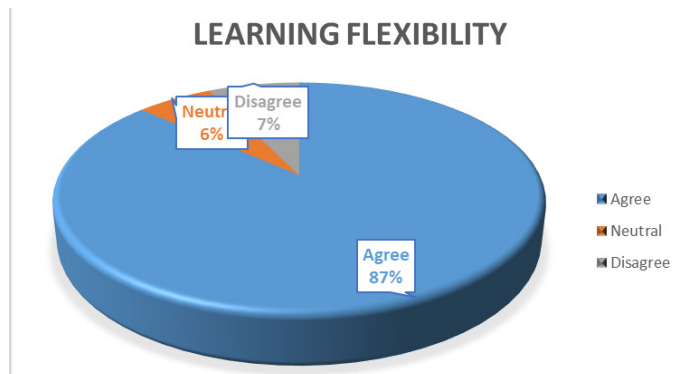


Figure 4: Learning Flexibility

(Figure 5) The pie chart illustrates that the attitudes of M.Ed. students toward the Learning Flexibility dimension of blended learning are predominantly positive, with 87% expressing agreement, 6% remaining neutral, and 7% disagreeing. The provision of flexibility in learning appears to contribute significantly to the students' favourable attitudes toward blended learning.

Dimension 6: Online Environment

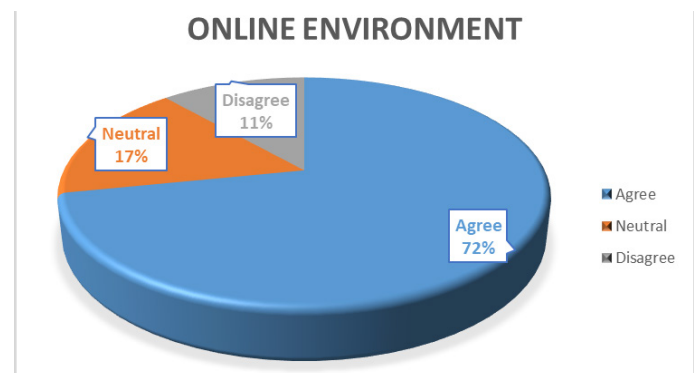


Figure 6: Online Environment

(Figure 6) The pie chart indicates that the attitudes of M.Ed. students toward the Online Environment dimension of blended learning are mainly positive, with 72% agreeing, 17% remaining neutral, and 11% disagreeing. Blended learning fosters a student-centered environment that supports their academic work and facilitates the completion of assignments.

Examining Students' Attitudes Towards Blended Learning

M.Ed. students' attitudes towards Blended learning were analysed based on Gender (Male/ Female), Locality (Rural/ Urban), and Academic Year (1st Year/2nd Year)

Ho1: An examination of the significance of the difference in the mean values of the scores obtained in the attitude of M.Ed. students towards Blended learning based on gender.

Table 2: t-test for the Mean Scores of male and female M.Ed. students

Gender	Number of Students	Mean	Standard Deviation	Standard Error	Degree Of Freedom	t-Value	Significance level
Male	54	91.14	9.79	1.33	100	0.42	0.05*
Female	56	90.42	7.57	1.01			

*not significant

t-table value - 1.98

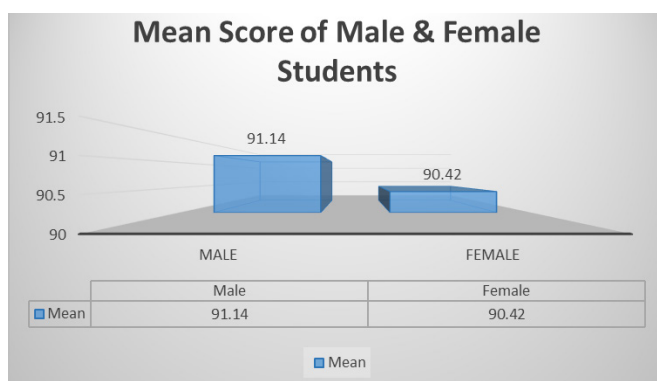


Figure 7: Mean Score of Male and Female Students

Table 2 presents a calculated t-value of 0.42, which falls below the critical threshold of 1.98 at the 0.05 significance level, as depicted in Figure 7. This result indicates the

absence of statistically significant differences in mean attitude scores toward blended learning between male and female M.Ed. students. Both gender groups demonstrated comparable familiarity with this instructional approach, as all participants are advanced learners enrolled at a prestigious university, Banaras Hindu University (BHU). The homogeneity in attitudes may be attributed to their shared educational experiences during the COVID-19 pandemic, when students participated in remote instruction for an academic term and completed assessments utilizing digital tools. Throughout subsequent semesters, learners engaged in hybrid formats combining face-to-face sessions with technology-mediated support, facilitating their transition to and acceptance of blended learning environments.

Ho2: An examination of the significance of the difference in the mean values of the scores obtained in the attitude of M.Ed. students towards Blended learning based on residence.

Table 3: *t*-test for the Mean Scores of rural and urban M.Ed. students

Residence	Number of Students	Mean	Standard Deviation	Standard Error	Degree Of Freedom	t-Value	Significance level
Rural	48	90.81	8.35	1.2	105	0.03*	0.05
Urban	62	90.75	9.03	1.14			

*not significant

t-table value-1.98

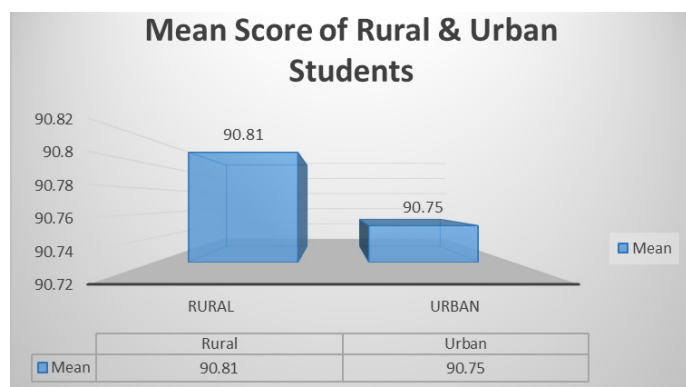
**Figure 8:** Mean Score of Rural and Urban Students

Table 3 reveals a calculated t-value of 0.03, below the critical value of 1.98 at the 0.05 significance level, as

shown in Figure 8. This demonstrates no statistically significant differences in mean attitude scores toward blended learning between rural and urban M.Ed. students. Despite their differing geographical backgrounds, learners from both settings demonstrated comparable familiarity with blended instructional approaches. All respondents possessed mobile devices utilized for academic purposes, indicating that technological accessibility does not limit their engagement with blended learning. This universal device ownership across diverse locations suggests equitable access to digital resources, enabling students, regardless of locality, to participate effectively in technology-enhanced educational environments and develop similar perspectives toward integrated learning models.

Ho3: An examination of the significance of the difference in the mean values of the scores obtained in the attitude of M.Ed. students towards Blended learning based on Academic Year.

Table 4: *t*-test for the Mean Scores of 1st and 2nd Year M.Ed. students

Academic Year	Number of Students	Mean	Standard Deviation	Standard Error	Degree Of Freedom	t-Value	Significance level
1 st Year	53	91.67	7.69	1.05	106	1.05	0.05
2 nd Year	57	89.94	9.54	1.26			

*not significant

t-table value- 1.98

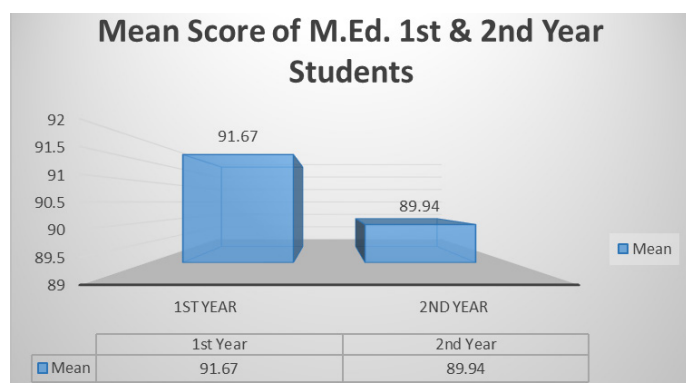
**Figure 9:** Mean Score of 1st & 2nd Year M.Ed. Students

Table 4 reveals that the calculated t-value is 1.05, lower than the critical value of 1.98 at the 0.05 significance level, as illustrated in Figure 9. This suggests no significant difference in the mean scores of M.Ed. students' attitudes toward blended learning based on their academic year, whether first or second. Both groups are well-acquainted with blended learning methods and have equal access to this topic within their curriculum. Additionally, they possess technical knowledge and participate in classes through

both online and offline formats.

Discussion

The findings of the present study reveal that M.Ed. students at Banaras Hindu University (BHU) hold an overall favourable attitude toward blended learning, with notable variation across dimensions and consistent agreement across gender, locality, and academic year subgroups.

The study found that learning flexibility emerged as the most positively received dimension with 87% agreement, while technology use received comparatively lower acceptance at 54%. This pattern aligns with the findings of Munir et al. (2021), who reported that Indonesian EFL university students similarly valued blended learning for its ability to make education more flexible, interactive, and conducive to self-paced study. The shared appreciation for flexibility across both contexts suggests that learner autonomy is a primary driver of blended learning acceptance regardless of cultural or institutional setting. The moderately positive overall attitude observed in this study is also consistent with Ayasrah and AlanSraween (2022), who found that students in Jordan held moderate levels of acceptance toward blended learning, with positive responses coexisting alongside awareness of practical limitations.

Regarding online learning, approximately 69% of M.Ed. students agreed with positive statements, appreciating the convenience, time management benefits, and access to rich instructional materials that online platforms provide. However, only 56% believed they could study more effectively online, indicating moderate confidence in the academic efficacy of the online mode. This is consistent with Smith and Hill's (2019) observation that learner outcomes including achievement, engagement, satisfaction, and motivation remain the most studied and contested aspect of blended learning research. Sharma et al. (2011) further support this finding by arguing that ICT does not replace the teacher but functions as a powerful support system, and when students are uncertain about studying more effectively online, they may be implicitly recognizing that technology-mediated learning is most productive when combined with human guidance, which is precisely the premise of blended instruction.

A striking 90% of students agreed that classroom settings foster a sense of community, and 83.64% reported learning better when personally guided, while simultaneously 82.73% disagreed that traditional learning is more effective than online platforms overall. This apparent tension is in fact theoretically coherent and reflects what Munir et al. (2021) describe as students valuing blended learning not as a replacement for the classroom but as an organisational system that supports the full learning process. Abbacan-Tuguic (2021) similarly found that students held positive attitudes toward blended learning while still appreciating structured face-to-face components, particularly for their interactivity and social connectedness. The high regard for teacher-guided activities in the present study also resonates with Sharma et al.'s (2011) argument that effective ICT use depends on the teacher evolving from a knowledge transmitter into a facilitator and coach.

Approximately 64% of students reported positive online interaction experiences, particularly through platforms such as Google Classroom, and notably 77.27% disagreed that a lack of resources severely hampers their ability to interact online. This distinguishes the present sample from students in less-resourced settings. Munir et al. (2021) found that Wi-Fi access and limited ICT equipment were the primary barriers for Indonesian EFL students, while the present sample appears to have achieved greater baseline access, likely attributable to the institutional context of BHU and the universal mobile device ownership confirmed among all respondents. Sugiharto et al. (2019) similarly found that pre-service teachers' readiness for blended collaborative learning was supported by everyday use of internet-based tools, which narrowed differences across student groups, a pattern that appears replicated here.

The technology use dimension received the lowest agreement rate at 54%, and 50.91% of students admitted difficulty identifying valid information from online sources, pointing to a significant digital literacy gap. Smith and Hill (2019) highlighted that blended learning research pays insufficient attention to the conditions that make technology use genuinely effective. The gap identified here, where students can operate technology but struggle to evaluate online content critically, reflects precisely this underexplored area. Sharma et al. (2011) stressed that effective ICT use depends not merely on access to tools but on meaningful

digital content and teachers trained to guide students skillfully. The finding that 79.09% of students acknowledged the negative impact of a shortage of technically qualified teachers further reinforces that pedagogical support for technology use remains a critical institutional gap.

Learning flexibility received the strongest endorsement across all dimensions, consistent with findings from multiple studies. Munir et al. (2021) reported that students valued blended learning for allowing them to work at their own pace and access materials remotely, while Abbacan-Tuguic (2021) found flexibility to be among the dimensions students felt most prepared for. In the present study, 94.55% of students preferred reading at their own pace, the single highest agreement across all 25 items, confirming that learner autonomy is central to blended learning's appeal among postgraduate students. Concerning the online environment, 72% of students favoured online study modes, and the structured task-management features of digital platforms were particularly valued, consistent with Munir et al.'s (2021) observation that students appreciate blended learning as a comprehensive support structure for managing the entire learning process.

The t-test results revealed no statistically significant differences in blended learning attitudes based on gender ($t = 0.42$), locality ($t = 0.03$), or academic year ($t = 1.05$), all falling below the critical value of 1.98 at the 0.05 significance level. The absence of gender-based variation mirrors Ayasrah and AlanSraween (2022), who found no significant gender differences in Jordan, and may be attributed to shared pandemic-era educational experiences that developed comparable digital familiarity among all students. The lack of rural-urban difference challenges assumptions about geographical digital divides and is supported by Abbacan-Tuguic (2021), who found that smartphone-based access equalised participation regardless of location. The absence of academic year differences mirrors Sugiharto et al.'s (2019) finding of no significant semester effect on blended learning readiness, explained by equal curriculum exposure, technical knowledge, and hybrid class participation across both cohorts at BHU.

Taken together, the findings suggest that M.Ed. students are well-positioned to engage with blended learning, but gaps in digital literacy and the shortage of technically trained teachers require sustained institutional investment, consistent with the wider literature's call for stronger teacher development and deliberate digital competency training (Smith & Hill, 2019; Sharma et al., 2011; Munir et al., 2021).

Conclusion

The study reveals predominantly favorable attitudes among M.Ed. students at Banaras Hindu University regarding blended learning. Participants valued the adaptability, convenience, and varied instructional materials offered through digital platforms, while simultaneously appreciating face-to-face engagement and structured guidance in physical classrooms. Statistical analysis revealed negligible attitude variations across gender, geographical location, and year of enrollment, reflecting consistent acceptance and competence with blended learning among all student groups. This uniformity suggests students possess adequate

capacity to embrace transforming educational frameworks combining technological and traditional instruction. The results validate blended learning as an instrumental approach for strengthening learner involvement, customized instruction, and interactive communication. These outcomes align with National Education Policy 2020 objectives promoting inclusive, learner-focused education through integrated blended models. The research underscores importance of sustained advancement in technological resources and educator preparation for successful execution. Ultimately, findings affirm that blended learning represents both a pragmatic response and a preferred option for contemporary educational contexts, equipping students with competencies essential for technology-integrated futures.

Implications for Further Studies

The present study has certain limitations that open avenues for further investigation. Since the sample size was limited, future research with a larger sample is recommended to improve the generalizability of the findings. As the study was confined to M.Ed. students of the Faculty of Education at Banaras Hindu University, similar studies may be carried out among M.Ed. students of other institutions as well. The present study examined only the attitudes of students toward blended learning; therefore, future studies may also explore the attitudes of college and university teachers toward blended learning. Moreover, the study considered only three variables, namely academic year, place of residence, and gender, and future researchers may include a wider range of variables to enrich the understanding of the topic. Additionally, similar investigations may be undertaken among undergraduate students in higher education settings to obtain more comprehensive and broader insights into the subject.

Limitations

This study was done on students in the M.Ed. Two years of the Faculty of Education, Banaras Hindu University, whose population is small, so the entire population has been included as a sample. It has been observed that some respondents have reacted against the statements without understanding or reading them. Respondents' responses to the study were collected using Google Forms.

Acknowledgement

The authors sincerely acknowledge all the participants for their valuable cooperation and responses during the study. The authors also express their gratitude to the concerned institution, teachers, and colleagues for their support, guidance, and encouragement throughout the completion of this research work.

Funding

There was no external funding received for this research work.

Ethical Approval

Ethical approval was not required for this study.

Informed Consent

Informed consent was obtained from all participants before collecting the data.

Data Availability

The data supporting the findings of this study are available upon reasonable request.

Conflict of Interest Statement

The authors declares no conflicts of interest.

AI Statement

Generative AI tools, such as OpenAI ChatGPT and Anthropic Claude AI, were utilized only for minor language editing and sentence clarity improvement. Solely the authors carried out all conceptual development, analysis, results, and discussions.

Authorship

The first author contributed to the conceptualization of the study, development of the research methodology, data collection, and preparation of the original manuscript draft. The second author contributed to the supervision of the research work, critically reviewed of the manuscript, and provided guidance in the interpretation of findings and final editing of the paper. Both authors have read and approved the final version of the manuscript for submission.

References

- Abbacan-Tuguic, L. (2021). Challenges of the New Normal: Students' Attitude, Readiness and Adaptability to Blended Learning Modality. *International Journal of English Literature and Social Sciences*, 6(2), 443–449. <https://doi.org/10.22161/ijels.62.65>
- Ahmed, K. (2025). Blended Learning: A Comprehensive Review of Recent Insights and Challenges. *Journal of Research in Education and Pedagogy*, 2(3), 334–345. <https://doi.org/10.70232/jrep.v2i3.64>
- Almekhlafi, A. G., Almeqdadi, F., & Alsadi, M. (2025). Student Perceptions of Blended Learning and Its Effectiveness in Higher Education. *Journal of Lifestyle and SDGs Review*, 5(2), e03960. <https://doi.org/10.47172/2965-730X.SDGsReview.v5.n02.pe03960>
- Amiruddin, A., Sunardi, S., & Setialaksana, W. (2024). Students' technological skills and attitudes toward HyFlex learning: The mediating role of online self-regulated learning, blended learning perception, and preferred learning modes. *Frontiers in Education*, 8, 1258298. <https://doi.org/10.3389/educ.2023.1258298>
- Angawi, M., & Tasir, Z. (2024). Blended Learning Research: A Systematic Review and Identification of Future Research Gaps. *International Journal of Academic Research in Progressive Education and Development*, 13(3), Pages 2993-3017. <https://doi.org/10.6007/IJARPED/v13-i3/22216>
- Arifin, A. Z., Widiastuti, A., & Sudrajat, S. (2025). The Global Trend of Blended Learning to Support

- Digitalization of Education: A Bibliometric Analysis. *Media Komunikasi FPIPS*, 24(2), 103–115. <https://doi.org/10.23887/mkfis.v24i2.101591>
- Ayasrah, S., & AlanSraween, M. S. (2022). Attitude of teachers and outstanding students towards blended learning in light of the COVID-19 pandemic in Jordan. *Pegem Journal of Education and Instruction*, 12(1), 57–66. DOI:10.47750/pegegog.12.01.26
- Balusamy, K., & Indrani, T. (2021). Attitude towards blended learning among school teachers in Tamil Nadu: A study. *International Journal of Creative Research Thoughts*, 9(12), 1–9. <http://www.ijcr.org/papers/IJCRT2112424>
- Banaras Hindu University. (n.d.). About BHU. <https://www.bhu.ac.in>
- Birbal, R., Ramdass, M., & Harripaul, C. (2018). Student teachers' attitudes towards blended learning. *Journal of Education and Human Development*, 7(2), 9–26. <https://doi.org/10.15640/jehd.v7n2a2>
- Bonk, C. J., & Graham, C. R. (2006). *The handbook of blended learning: Global perspectives, local designs*. San Francisco, CA: Pfeiffer Publishing. https://curtbonk.com/toc_section_intros2.pdf
- Cao, W. (2023). A meta-analysis of effects of blended learning on performance, attitude, achievement, and engagement across different countries. *Frontiers in Psychology*, 14, 1212056. <https://doi.org/10.3389/fpsyg.2023.1212056>
- Das, R. (2021). The attitude of students and teachers towards blended learning at the elementary level. *Ilkogretim Online - Elementary Education Online*, 20(5), 245–257. doi: 10.17051/ilkonline.2021.05.23 <http://ilkogretim-online.org>
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). SAGE Publications.
- Garrett, H. E., & Woodworth, R. S. (1981). *Statistics in psychology and education*. Vakils, Feffer and Simons Ltd.
- Graham, C.R. (2006) Blended Learning Systems: Definition, Current Trends, and Future Directions. In: Bonk, C.J. and Graham, C.R., Eds., *Handbook of Blended Learning: Global Perspectives, Local Designs*, Pfeiffer Publishing, San Francisco, 3-21. https://www.researchgate.net/publication/258834966_Blended_learning_systems_Definition_current_trends_and_future_directions
- Han, X. (2023). Evaluating blended learning effectiveness: An empirical study from undergraduates' perspectives using structural equation modeling. *Frontiers in Psychology*, 14, 1059282. <https://doi.org/10.3389/fpsyg.2023.1059282>
- Hrastinski, S. (2008). Asynchronous and synchronous e-learning. *Educause Quarterly*, 31(4), 51–55. https://www.researchgate.net/publication/238767486_Asynchronous_and_synchronous_e-learning
- Istenič, A. (2024). Blended learning in higher education: The integrated and distributed model and a thematic analysis. *Discover Education*, 3(1), 165. <https://doi.org/10.1007/s44217-024-00239-y>
- Khan, D. S. H. (2016). Attitude of Prospective Teachers towards Blended Learning Technology: A Normative Approach. *SMART MOVES JOURNAL IJELLH*, 4(6), 10. <https://ijellh.com/index.php/OJS/article/view/1438>
- Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Age International Publishers.
- Krasnova, T., & Vanushin, I. (2016). Blended Learning Perception among Undergraduate Engineering Students. *International Journal of Emerging Technologies in Learning (IJET)*, 11(01), 54. <https://doi.org/10.3991/ijet.v11i01.4901>
- Kumar, A., & Soni, C. (2023). Blended learning: A short overview. *National Journal of Education*, XXI(2), 203–211. <https://bhu.ac.in/Images/files/JULY%2023%2018.pdf>
- Kyei-Akuoko, C., Mensah, R. O., Kuusongno, D. D., Ebow Yalley, C., & Darko Amponsah, K. (2025). Evaluation of blended learning: Challenges, academic performance shifts, and the pros and cons in a selected Technical University. *Cogent Arts & Humanities*, 12(1), 2435713. <https://doi.org/10.1080/23311983.2024.2435713>
- Lalima, & Dangwal, K. L. (2017). Blended learning: An innovative approach. *Universal Journal of Educational Research*, 5(1), 129–136. <https://doi.org/10.13189/ujer.2017.050116>
- Lv, N., & Li, Z. (2024). The Effects of Blended Learning Environment on College Students' Learning Effectiveness: Exploring the Role of Behavioral Intentions and Self-Efficacy Through the UTAUT2 Model. *Sage Open*, 14(2), 21582440241251604. <https://doi.org/10.1177/21582440241251604>
- Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record*, 108(6), 1017–1054. <https://doi.org/10.1111/j.1467-9620.2006.00684.x>
- Mohammadi, M., Paasivara, M., & Kasurinen, J. (2025). Blended learning in higher education: Good practices in platforms and teachers support, enhancing students motivation. *Education and Information Technologies*, 30(18), 26001–26024. <https://doi.org/10.1007/s10639-025-13770-8>
- Munir, M., Muhayyang, M., Limbong, S., & Ariyani, A. (2021). Students' attitudes on blended learning-based instruction in Indonesian EFL classroom. *GNOSIS: An Interdisciplinary Journal of Human Theory and Praxis*, 4, 1–11. <https://gnosijournal.com/index.php/gnosi/article/download/110/120>

- Nayak, R. K., & Panda, H. (2018). Attitude of pupil teachers towards using blended learning strategies at secondary levels for developing social skills of students. *Journal of Emerging Technologies and Innovative Research*, 5(4), 450–455. <https://www.jetir.org/papers/JETIR1804403.pdf>
- Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Sciences Education*, 15(5), 625–632. <https://doi.org/10.1007/s10459-010-9222-y>
- Raymond, S. C. (2019). *High school teacher perception of blended learning* [Doctoral dissertation, Walden University]. Walden University ScholarWorks. <https://scholarworks.waldenu.edu/dissertations>
- Saboowala, R., & Manghirmalani, M. P. (2020). Perception of in-service teachers towards blended learning as the new normal in teaching-learning process post COVID-19 pandemic. *International Journal of Research and Analytical Reviews*, 7(2), 133–140. DOI:10.21203/rs.3.rs-56794/v1
- Sareen, S., & Mandal, S. (2024). Challenges of blended learning in higher education across global north-south: A systematic and integrative literature review. *Social Sciences & Humanities Open*, 10, 101011. <https://doi.org/10.1016/j.ssaho.2024.101011>
- Sharma, A., Gandhar, K., & Sharma. (2011). Role of ICT in the process of teaching and learning. *Journal of Education and Practice*, 2(5). <https://www.researchgate.net/publication/279640233>
- She, M., Xu, Y., Li, Z., & Hu, D. (2025). Exploring the determinants on continuance participation of college students toward blended learning: The stimulating role of course characteristics and instructor support. *Frontiers in Psychology*, 16, 1522810. <https://doi.org/10.3389/fpsyg.2025.1522810>
- Singh, H. and Reed, C. (2001) Achieving Success with Blended Learning. Centra Software. ASTD State of the Industry Report. American Society for Training and Development. <https://www.scribd.com/document/508892596/blend-ce>
- Smith, K., & Hill, J. (2019). Defining the nature of blended learning through its depiction in current research. *Higher Education Research & Development*, 38(2), 383–397. <https://doi.org/10.1080/07294360.2018.1517732>
- Sugiharto, B., Corebima, A. D., Susilo, H., & Ibrohim. (2019). The Pre-Service Biology Teacher Readiness in Blended Collaborative Problem Based Learning (BCPBL). *International Journal of Instruction*, 12(4), 113-130. <https://doi.org/10.29333/iji.2019.1248a>
- Tatnall, A. (Ed.). (2020). Information and Communication Technology (ICT) in Education. In *Encyclopedia of Education and Information Technologies* (pp. 931–931). Springer International Publishing. https://doi.org/10.1007/978-3-030-10576-1_300332
- Thiyagu, K. (2011). B.Ed. trainees' perceptions towards blended learning in teaching and learning of mathematics. *New Frontiers in Education*, 44(3), 210–215. https://www.academia.edu/7751142/B_ED_TRAINEES_PERCEPTIONS_TOWARDS_BLENDED_LEARNING_IN_TEACHING_AND_LEARNING_OF_MATHEMATICS
- Tong, D. H., Uyen, B. P., & Ngan, L. K. (2022). The effectiveness of blended learning on students' academic achievement, self-study skills and learning attitudes: A quasi-experiment study in teaching the conventions for coordinates in the plane. *Heliyon*, 8(12), e12657. <https://doi.org/10.1016/j.heliyon.2022.e12657>
- Yang, L., & Chano, J. (2025). The Impacts of Blended Learning on English Language Proficiency in Higher Education: A Systematic Literature Review. *Higher Education Studies*, 15(2), 83. <https://doi.org/10.5539/hes.v15n2p83>
- Yilmaz, Ö., & Malone, K. L. (2020). Preservice teachers perceptions about the use of blended learning in a science education methods course. *Smart Learning Environments*, 7(1), 18. <https://doi.org/10.1186/s40561-020-00126-7>
- Younas, M., El-Dakhs, D. A. S., & Jiang, Y. (2025). Knowledge construction in blended learning and its impact on students' academic motivation and learning outcomes. *Frontiers in Education*, 10, 1626609. <https://doi.org/10.3389/feduc.2025.1626609>
- Yu, Y., Che Tak, K. B., Bailey, R. P., Samsudin, N., & Ren, C. (2025). The Effects of Blended Learning on Learning Engagement in Physical Education Among University Students in China: The Mediating Role of Attitudes. *Sustainability*, 17(2), 378. <https://doi.org/10.3390/su17020378>
- Zurita, G., Hasbun, B., Baloian, N., & Jerez, O. (2015). A Blended Learning Environment for Enhancing Meaningful Learning Using 21st Century Skills. In G. Chen, V. Kumar, Kinshuk, R. Huang, & S. C. Kong (Eds.), *Emerging Issues in Smart Learning* (pp. 1–8). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-662-44188-6_1