

# Perception vs. Reality: Assessing Blended Learning in Undergraduate Education

Dr. Pratyusha Sarkar

Faculty, The Bhawanipur Education Society College, Kolkata 700020

## Abstract

Blended learning has become an increasingly prominent and popular teaching-learning approach in different levels of education especially in the post pandemic era (COVID-19). Blended learning is a pedagogical approach which has come with the innovation of science and technology. It combines face-to-face instruction with the online learning components to provide greater flexibility and accessibility for learners. This study examined the attitude of students and teachers towards blended learning and explored its practical implementation at higher educational institutions. Using a descriptive survey design, data were collected from undergraduate 264 students and 176 teachers through a structured attitude scale and questionnaire. The findings of the research revealed that majority of students and teachers hold a favourable attitude towards blended learning recognizing its flexibility, feasibility in evaluation, accessibility of teaching-learning resources and self-directed learning. However, despite this the actual use of blended learning strategies in regular classroom teaching-learning process was found to be limited and not fully aligned with its intended pedagogical potential. However, challenges such as limited technological exposure, insufficient training, low tech-literacy, lack of awareness, inadequate infrastructural facility of the institution, lack of interest in preparing digital teaching material were also found among both the teacher and students.

**Keywords:** Blended Learning, Attitude, Students, Teachers, Practice, Undergraduate level.

## Introduction

The advancement of science and technology has significantly impacted our life and living consequently the education system in last two decades. The application of digital technology in regular face-to-face classroom setting gave birth to a new concept which is popularly known as Blended learning. Blended learning is a method of instruction which caters the diverse needs of the students with varying academic backgrounds, learning needs and access to technology by integrating face-to-face and online mode of instruction. It also integrates authentic online resources with face-to-face classroom teaching to provide student-centered learning, improve student engagement and support in continuous learning beyond the classroom boundaries. Moreover, the government of India took some conspicuous efforts such as SWAYAM, MOOCs, Learning Management Systems and emphasized on digital education under the National Education Policy (NEP) 2020 to promote and incorporate blended learning at higher educational level. However, the success of this pedagogical strategy does not depend only on infrastructural availability but also on the attitude of students and teachers and their readiness to incorporate it in their regular teaching-learning process.

In any educational institutional setting, the major stakeholders are teachers (who facilitate the learning process) and students (who actually benefited). So, their roles become crucial for succeeding any instructional strategy in any educational level. Teacher's role is not only limited to teaching but also extend to educational planning, designing, organizing, facilitating and implementing in classroom. Hence, their attitude towards blended learning or inclination towards technology integration influence the extent and effectiveness of its use in everyday teaching-learning process. Likewise, the student's acceptance, participation and overall frame of mind influences the effectiveness of blended learning. In Indian context some factors low digital literacy rate, lack of interest, inadequate infrastructural condition of the institution, excessive workload, restricted access to technology tools, inadequate awareness of technological advancement play a considerable role in shaping one's attitude and practices. Thus, despite the government and policy level encouragement, the implementation of blended learning often varied substantially across the institution and discipline.

Furthermore, a need has been felt to examine how blended learning is being practiced at undergraduate institutions in relation to their attitude towards blended learning. Understanding the attitude of teachers and students towards blended learning and its practices such as technology usage, blended learning as a method of teaching-learning, catering diversified need of the learner, role of teacher, process of evaluation can provide valuable insights into the strength and challenges of its implementation. Examined through the national lens, this study has focused on undergraduate colleges of West Bengal, affiliated to University of Calcutta for understanding the attitude of teachers and students towards blended and its adoption in daily teaching-learning activities. By grounding the inquiry in this specific context, the study aims to generate context-sensitive insights that can inform more effective and sustainable blended learning practices in undergraduate education.

### Review of related literature

Researcher has reviewed a significant number of previous research work related to blended learning and mentioned some of the relevant and recent studies to establish the research gap and significance of the study.

**Akbarov, A. et.al. (2018)**, conducted a study to investigate the student's preference between traditional and BL environment, student preference in taking exams in digital or paper and pencil form. They employed correlational research method to conduct the study and used cross sectional data from 162 UG students of National Kazakh University. The researchers constructed a questionnaire to collect the necessary data from students. The data revealed that, students liked BL more than traditional school environment where English is usually taught. Another finding of the research students preferred taking English examination through paper pencil form to taking them in digital form.

**Abbacan- Tuguic, L. (2021)**, studied to explore students' attitude, readiness for learning their adaptability to a BL environment. 508 samples were taken using a self-developed online questionnaire and interviews were taken from 25 students for qualitative analysis. The mixed method study found that students had a positive attitude and demonstrated a moderate level of readiness to adopt BL. But there exists a negative correlation between the attitude of students and their readiness towards BL environment.

**Febriani, A. & Kuswaedani, R. (2022)**, conducted a study to explore high school EFL students' attitude towards using BL to support their English language learning during the pandemic. A quantitative research design was used, and data was collected from 32 students through a questionnaire. The data revealed that

high school EFL students had a neutral attitude towards BL. Also, research finding showed lowest effects for virtual learning.

**Nayak, K. R. & Panda, H. (2018)**, assessed 100 teachers' attitude towards BL from the Uttar Dinajpur district, West Bengal. Using a self-developed tool, the data was collected. The data revealed a significant difference in the attitude of male & female pupil-teachers regarding the role of BL in students' social development. The study concluded that BL plays a valuable role in fostering the social development of secondary-level students.

**Al-Saleh, R. S. S. (2018)**, assessed the teacher's attitude towards BL in Tabak City. 50 teachers were randomly selected for the research, and a tool was developed by the researcher for data collection. The findings revealed that attitude questionnaire indicated teachers' satisfaction and positive attitude towards BL.

**Luo, T. & Murray, A. (2018)**, tried to understand teachers' attitude towards the middle school's one-laptop-per-students (1:1) policy. For the study transcendental phenomenological approach was used and interview technique was employed to collect data. The study found that most teachers held a positive perspective and were receptive to incorporating always-on and connected technology to enhance teaching and learning in the classroom, as they had been exploring different methods of BL.

Several reviews of related literature have been conducted to identify the research gap and all the studies indicated an overall positive attitude of students and teachers towards blended learning. Although variations exist across different educational levels and contexts. While learners often prefer blended instruction over traditional methods, readiness and effective implementation remain inconsistent, with some studies reported a mismatch between attitude and preparedness. Moreover, most studies focused either on students or teachers separately, with limited attention to the relationship between attitude and actual practice. Hence, there is a clear need for comprehensive research examining both students' and teachers' attitudes and practices of blended learning at the undergraduate level to support effective and sustainable implementation.

### **Research objectives**

1. To compare the student's attitude and their practice of blended learning at undergraduate level.
2. To compare the teacher's attitude and their practice of blended learning at undergraduate level.

### **Research hypothesis**

1. H01 There is no significant difference between the student's attitude towards BL and its practice at UG level.
2. H02 There is no significant difference between the teachers' attitude towards BL and its practice at UG level.

### **Research methodology**

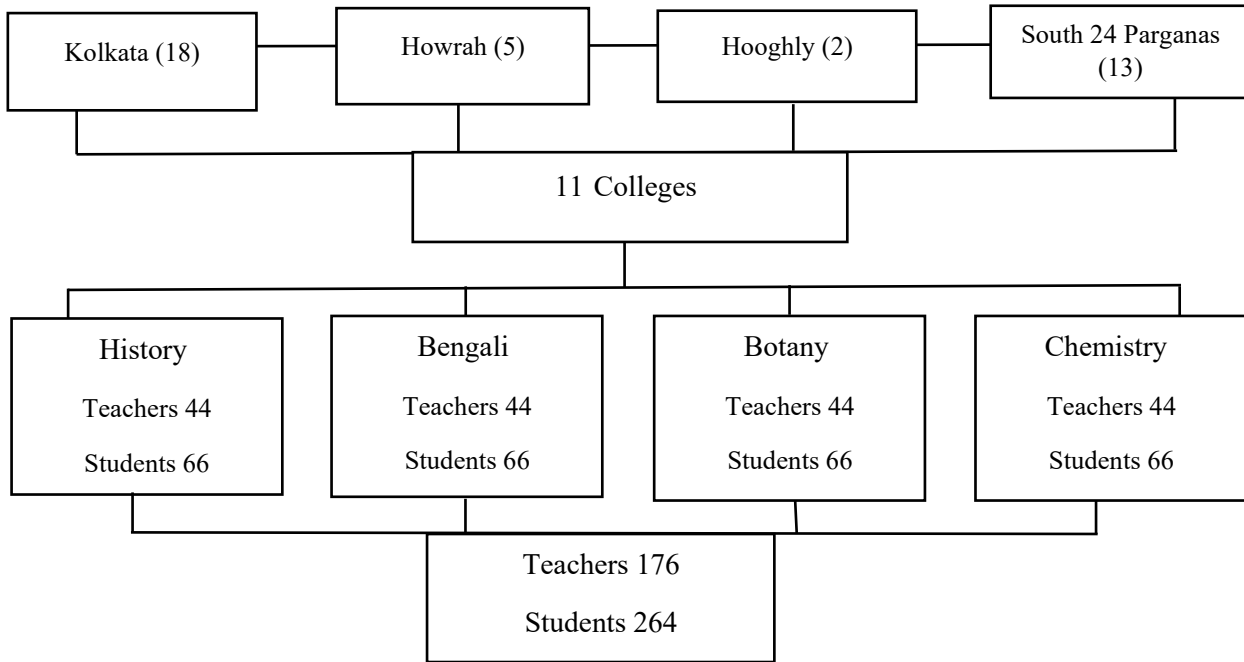
To conduct this study normative survey research design was adopted where the researcher used a self-constructed attitude scale and questionnaire to collect quantitative data from the undergraduate students.

### **Sample and sampling techniques**

Stratified random sampling technique was adopted to draw samples from the population. Out of 38 colleges affiliated to the University of Calcutta offering all the following subjects- Botany, Chemistry,

History, Bengali only 12 colleges were randomly selected from the four selected districts namely Howrah, Hooghly, Kolkata, South 24 Pargana. From Howrah district two (2), Hooghly district two (2), South 24 Pargana district three (3) and Kolkata district five (5) colleges are selected randomly by using lottery technique to draw the samples from the population. From these colleges, four teachers & six students were selected from each department.

**Fig.1. Colleges affiliated to the University of Calcutta (offering the following subjects- Bengali, History, Botany, Chemistry)**



### Tools used for this study

1. Attitude Scale for Teachers & for Students towards BL at UG level. (32 items)
2. Questionnaire for Teachers & for Students regarding practice of BL at UG level. (32 items).

### Attitude scale for teachers and students

The tool was constructed & validated by the researcher under the guidance of the supervisors. The tool has 32 items on 5-point Likert Scale and each item had 5 possible responses- 'Strongly Disagree', 'Disagree', 'Neutral', 'Agree', 'Strongly Agree'. Five items are negative items and rest of items are positive and based on responses, the marking was given from 1 to 5 i.e., Strongly Disagree to Strongly Agree. As the total score increases, the better the level of attitude towards BL. The 32 items of Likert-Scale were distributed over 5 factors namely Use of Technology, Method of Teaching-Learning, Students' Diversified Need, Role of Teachers, Process of Evaluation. The five factors and item numbers are given below:

### Reliability & Validity of the attitude scale

In this research the reliability was checked by using Cronbach's Alpha and the value was found to be 0.819 and 0.840 for the attitude scale of students and teachers respectively.

**Table.1. Result of Cronbach’s Alpha of attitude scale for students**

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Students	0.819	0.826	32
Teachers	0.840	0.856	32

The Cronbach’s alpha value of the attitude scale for both students and teachers were 0.819 and 0.840 which indicated that the internal consistency of the attitude scale is very high. As a result, the scale is considered to be highly reliable for the present study.

To scrutinize the face validity, researcher applied the Delphi Method, where based on the experts’ report the tool for measuring attitude was finalized. Initially the tool consisted 38 items but after considering the opinion of the subject experts six items were eliminated and Pilot study was conducted and, on its basis, few minor changes were made. Some linguistic error was corrected by the researcher under the guidance of supervisors.

**Questionnaire for teachers & student**

The tool was constructed and validated by the researcher with the assistance of the supervisors. The tool has 32 items on 2-point Scale and each of the item have 2 possible responses- Yes and No. Five items are negative items and rest of items are positive and based on the responses the marking were given from 0 and 1 i.e., No and Yes. As the total score increases, the better the level of practice of BL. The 32 items of 2-point scale were distributed over 5 factors namely

Use of Technology, Method of Teaching-Learning, Students’ Diversified Need, Role of Teachers, Process of Evaluation. The five factors and item numbers are given below:

**Table.2. Factor-wise item distribution of questionnaire**

Sl. No.	Factors	Sl. No. of Items	Total
1.	Use of Technology	1,2,3,15,28,29,30	7
2	Method of Teaching-Learning	4,5,6,7,8,9,26	7
3.	Students’ Diversified Need	10,11,12,13,14,25	6
4.	Role of Teachers	16,24,27	3
5.	Process of Evaluation	17,18,19,20,21,22,23,31,32	9
<b>Total</b>			32

To check the face validity of the questionnaire Delphi Method was applied and according to the experts report the tool was finalized.

In a two-point scale, respondents are provided with only two options. As the choices are limited, so they had to response spontaneously and that simply reflects their opinion at that particular moment, which may change over time & situation.

**Delimitations**

The present study is delimited to the following:

1. Colleges affiliated to the University of Calcutta.

2. Co-educational colleges offering the following subjects- Bengali, History, Botany and Chemistry.
3. Only teachers teaching at UG level and the students studying at UG level belonging to the following departments- Bengali, History, Botany and Chemistry.

**Attitude of students towards BL at UG level**

To find out the level of attitude of the UG students towards BL the researcher prepared a self-made attitude scale to draw the relevant data from the selected sample. Frequency distribution was done to categorize the data based on the raw score. Frequency distribution was done to categorize the data to facilitate statistical treatment. This categorization helped to understand the nature of attitude of the UG students towards BL. According to the total score obtained by the students in the ‘attitude scale’, the scores were categorized into six groups and corresponding frequencies were tabulated and presented in **Table.3**.

**Table.3. Frequency table depicting scores of the UG students towards BL**

Total Score Obtained by Students in Attitude Scale		
Range of Score	Frequency (f)	Percentage (%)
110-120	1	0.38
120-130	6	2.27
130-140	32	12.12
140-150	99	37.5
150-160	109	41.29
160-170	17	6.44
Total	264	100
<b>Mean</b>	148.57	
<b>Median</b>	149.24	
<b>Mode</b>	148.58	
<b>Standard Deviation</b>	8.65	

From the data presented in the **Table.3**, it is quite clearly visible that approximately 97% students scored above 130 and maximum number of students were found to belong in the 150-160 frequency range. Only a mere 3% students scored below 130 in the attitude scale.

The data also reveals that there is not much difference between the mean and median scores. This means that majority of the participants expressed favourable attitude towards BL. SD was found to be 8.65. This means that near about 10% students deviated from the mean score.

**Attitude of teachers towards BL at UG level**

To determine the attitude level of UG teachers towards BL, data were gathered through a survey method using a self-developed attitude scale administered to the UG teachers. The total score was reduced to a frequency distribution, mean, median and standard deviation of the data were presented in the **Table.4**.

The frequency table helped the researcher to understand the nature of attitude of the teacher teaching at UG level towards BL. According to the total score obtained by the teachers in the ‘attitude scale’ six categories were made and frequencies were tabulated and revealed in **Table.4**.

**Table.4. Frequency table depicting the attitude score of the UG teachers towards BL**

Total Score Obtained by Teachers in Attitude Scale		
Score	Frequency (f)	Percentage (%)
110-120	0	0
120-130	6	3.41
130-140	26	14.77
140-150	51	28.98
150-160	92	52.27
160-170	1	0.57
Total	176	100
<b>Mean</b>		
	148.23	
<b>Median</b>		
	150.80	
<b>Mode</b>		
	154.80	
<b>Standard Deviation</b>		
	8.61	

The data presented in the **Table.4**. revealed that approximately 3 percent teachers performed less than 130 and rest of the teachers performed really well in the attitude scale. Approximately percent 97 percent teachers scored more than 130 in the attitude test. This revealed that majority of the teachers showed highly favourable attitude towards BL.

**Comparison of students’ attitude & practice of BL**

To compare the students’ attitude and their practice of BL at UG level; Gamma Test were employed. Derived result has been presented in **Table.5**.

**Table.5. Gamma test for comparing of students’ attitude & practice of BL**

Gamma Test					
Items	Value	Remarks	Items	Value	Remarks
1.	0.294	Moderate Positive Association	18.	0.005	Negligible Positive Association
2.	0.388	Moderate Positive Association	19.	0.887	Very Strong Positive Association
3.	0.181	Weak Positive Association	20.	0.034	Negligible Positive Association
4.	0.377	Moderate Positive Association	21.	-0.227	Moderate Inverse Association
5.	0.138	Weak Positive Association	22.	0.080	Negligible Positive Association

6	0.114	Weak Positive Association	23.	0.329	Moderate Positive Association
7.	-0.084	Negligible Inverse Association	24.	-0.042	Negligible Inverse Association
8.	0.072	Negligible Positive Correlation	25.	0.162	Weak Positive Association
9.	0.027	Negligible Positive Correlation	26.	0.393	Moderate Positive Association
10.	0.362	Moderate Positive Association	27.	0.011	Negligible Positive Association
11.	0.233	Moderate Positive Association	28.	-0.023	Negligible Inverse Association
12.	0.034	Negligible Positive Association	29.	0.024	Negligible Positive Association
13.	0.291	Moderate Positive Association	30.	-0.149	Weak Inverse Association
14.	0.178	Weak Positive Association	31.	0.262	Moderate Positive Association
15.	0.513	Relatively Strong Positive Association	32.	0.650	Strong Positive Association
16.	0.379	Moderate Positive Association	<i>*Significant at 0.05 Level of Significance.</i>		
17.	0.147	Weak Positive Association			

For Comparing the attitude & practice of UG Students of BL, Gamma-test was conducted. And the result shown in **Table.5**. From the result, it could be concluded that, a moderately positive association (0.294) exists between the students’ opinion regarding the use of technology for making the teaching learning process interesting and practically using them in regular teaching-learning process. The data also revealed that students love to attend technology equipped classes for learning the lesson because a moderately positive association (0.388) was noted between students’ participation and interest towards technology equipped classes. Students believe that technology can be used as the supporting tool for regular teaching learning process but surprisingly it was noted that, they do not use the technology as the supporting tool sufficiently as because findings revealed a weak association (0.181). During an informal discussion with the students, researcher identified the possible reasons behind the weak association between interest and usage of technology and it includes lack of infrastructural facility of the college, lack of technological knowledge, lack of interest for using technology for teaching-learning on behalf of both teachers and students. A moderate positive association (0.377) was found between the attitude of students and their use of technological assistance in presenting the subject matter digitally but a weak positive association (0.138) was found in presenting majority of the subject matter digitally. In this context; as per the data revealed, during the interview with the students that majority of the students felt specially those belonging to science stream that most of the content of their subject cannot be presented digitally. The result also revealed a relatively strong positive association (0.471) between the attitude and practice in presenting the subject matter by using power point presentation. It means that a weak positive association (0.114) was noted in presenting the subject matter by using power point presentation mainly because though students

expressed extremely positive attitude towards the usage of power point presentation but because of lack of technological know-hows and lack of the interest of putting extra effort for making power point presentation from the part of the teachers' students do not use it properly. A negligible inverse association (-0.084) was noted between the attitude and practice of using multimedia in the power point presentation which means that Although students believe that multimedia should be included in PowerPoint presentations, they do not incorporate it into their own presentations. The data gathered during the interview, revealed the fact that in reality majority of the UG students are unaware of using technology for power point presentation because they have lack of knowledge & skill for making and using them. A negligible positive association (0.072 and 0.027) was noted between the attitude and practice in the context of audio or video recording of the teaching content by the teachers and sending them to students because majority of the colleges have no such facilities to record the learning content, teachers are more comfortable in face-to-face lecture method. Moreover, since there is no compulsion or strict regulation by the higher authority, so they do not feel urge to do it. In the context of increasing flexibility and self-learning moderate association (0.368 and 0.233) was noted between the attitude and practice of BL while negligible positive association (0.034) was found in the context of meeting individualistic need of the learner. Again, moderate positive association (0.291) and weak positive association (0.178) were noted between attitude of students towards BL and the practice of it in increasing self-pace learning, enhancing motivation because they do not get the sufficient exposure to technology so lack of technological knowledge and facilities can be the major reasons behind such kind of result. However, in the case of increasing attention level of the students a strong positive association was noted (0.513). Students strongly expressed that teacher should assist them in upgrading their technical know-hows but in reality, majority of the teachers usually fail to fulfil their expectation in this regard. It is perhaps the reason why; the result showed a moderate positive association (0.379) between the students' expectation and teachers' practicing them in reality in order to assist the students. But at the same time, it was also noted that some of the teachers were really helpful and they assisted their student to develop their requisite basic minimum technical know-hows. Feedback plays a very important role both for the qualitative and quantitative improvement of an individual and institution. Purpose of taking feedback is to bring desired positive changes or to identify more specifically the strength and weaknesses accordingly introduce good practices that will help to enhance the performance and make necessary adjustment for achieving better result. It was noted that feedbacks were taken by the teachers but not on the regular basis. Most importantly it was noted that modifications based on the feedback were rarely done, or even if they were done, it was not implemented in the truest sense so that it could be effective. Data are also showing a weak positive association (0.147) and negligible positive association (0.005). In the context of keeping in touch with the teachers a strong positive association (0.887) was found because students usually feel connected with the teachers even outside the classroom. A negligible positive association (0.034) was found in the attitude towards conducting regular online examination for reducing examination related fear and the practice of it because no such provisions are not there so both the students and teacher do not feel the necessity of it. Weak association (-0.227) was found in the context adopting unfair means in online examination and in conducting offline examination student have a negligible positive association (0.080) between the attitude and practice. A moderate positive association (0.329) was found in developing cooperative spirit among the learners and students can formulate their assignment with the cooperative of their peers and teachers. But the result showed negligible inverse association (-0.042) between attitude and practice of the teachers in regard to formulating assignments by adopting technical assistance as per requirements. In the context

of teachers help in formulating assignment weak positive association was found (0.162) because students feel teacher should help the students in formulating assignment but teachers do not help sufficiently to the students. In the context of attitude and practice of using digital library a moderate positive association (0.393) was noted among the students because in many cases students were found to be unaware about the existence of the digital library. Though it was found that most of the colleges do not have any provision for digital library but yet there are few colleges who has digital library facility with partial digital content. A negligible positive correlation (0.011) was observed between students' attitude and practices regarding online teacher-student interaction in addressing their diverse needs and sufficiency. In terms of online learning materials, students do not perceive online teaching materials as solely sufficient for learning, resulting in a negligible inverse association (-0.023). A weak inverse correlation (0.149) was found between students' attitude and practices in using technology in education, indicating its role in making student-teacher interactions more instrumental and mechanized. However, a moderate positive correlation (0.262) and a strong positive correlation (0.650) were noted in enhancing new-age education and improving students' efficiency for future job placements.

**Comparison of teachers’ attitude & practice of BL**

To compare the students’ attitude and their practice of BL at UG level; Gamma Test were employed. Derived result has been presented in **Table.6**.

**Table.6. Gamma test for comparison of teachers’ attitude & practice of BL**

Gamma Test					
Items	Value	Remarks	Items	Value	Remarks
1.	0.355	Moderate Positive Association	18.	0.155	Weak Positive Association
2.	0.115	Weak Positive Association	19.	0.155	Weak Positive Association
3.	-0.105	Weak Inverse Association	20.	-0.183	Weak Inverse Association
4.	0.380	Moderate Positive Association	21.	-0.224	Moderate Inverse Association
5.	0.390	Moderate Positive Association	22.	0.032	Negligible Positive Association
6.	0.390	Moderate Positive Association	23.	0.330	Moderate Positive Association
7.	0.369	Moderate Positive Association	24.	0.033	Negligible Positive Association
8.	0.158	Weak Positive Association	25.	0.425	Relatively Strong Positive Association
9.	0.149	Weak Positive Association	26.	0.466	Relatively Strong Positive Association
10.	0.299	Moderate Positive Association	27.	1.00	Perfect Positive Association

11.	0.481	Relatively Strong Positive Association	28.	-0.453	Relatively Strong Inverse Association
12.	-0.239	Moderate Inverse Association	29.	0.967	Very Strong Positive Association
13.	0.547	Relatively Strong Positive Association	30.	0.993	Very Strong Positive Association
14.	0.265	Moderate Positive Association	31.	0.546	Relatively Strong Positive Association
15.	0.265	Moderate Positive Association	32.	0.249	Moderate Positive Association
16.	-0.045	Negligible Inverse Association	<i>*Significant at 0.05 Level of Significance.</i>		
17.	-0.028	Negligible Inverse Association			

The Gamma-test was conducted for comparing UG teachers' attitude & practice of blended learning. The result of the test is shown in the **Table.6**. The result revealed that relationships exist between attitude and practice of UG teachers regarding use of technology in education. A moderately positive association (0.355) was observed between teachers' opinion in order to facilitate teaching-learning process, make it more engaging and the way they actually use technology for regular classroom instruction. However, the data also indicates that teachers do not use technological equipment sufficiently in the classroom, which may explain the weak positive association (0.115). UG teachers believe that technology can serve as a supporting tool for regular teaching, but they do not utilize it sufficiently for this purpose, leading to a weak inverse association (-0.105) between their attitude and practice of BL. Informal interviews with students revealed several factors contributing to this weak association, including inadequate infrastructure in colleges, limited technological knowledge, and a lack of interest among teachers. A moderate positive association (0.380) was found between teachers' attitude and their use of technology for digitally presenting subject matter, with a similar association (0.390) observed in presenting a majority of the subject content digitally. However, interviews highlighted that many teachers, particularly from the science stream, feel that a significant portion of their subject matter cannot be effectively presented digitally. Another moderate positive association (0.390) was noted between teachers' attitude and their use of Power Point presentations. While teachers have a highly positive attitude toward using Power Point, the lack of technological resources in colleges and excessive workload (both teaching and nonteaching responsibilities) contribute to only a moderate level of practice. Similarly, a moderate positive association (0.369) was found between teachers' attitude and their use of multimedia in Power Point presentations, indicating that while teachers believe multimedia should be incorporated, they do use it to some extent. A weak positive association (0.158 and 0.149) was found between teachers' attitude and practices regarding audio or video recording of teaching content and sharing it with students. This is primarily due to the lack of recording facilities in most colleges and teachers' preference for face-to-face lectures, which they find easier and more convenient than BL. Additionally, no formal regulations mandate such practices, reducing the perceived necessity. In the context of increasing flexibility and self-learning, moderate and relatively strong associations (0.299 and 0.481) were found between teachers' attitude and their BL practices.

However, a moderate inverse association (-0.239) was observed regarding meeting individual student needs, likely due to teachers' limited knowledge of information and technology. A relatively strong positive association (0.547) and moderate positive associations (0.265 and 0.265) were found between teachers' attitude and their use of technology to promote self-paced learning, enhance motivation, and improve student attention. While teachers strongly believe in helping students develop technological skills, many struggles to meet this need due to their own lack of knowledge, low interest, and workload constraints. The results also indicate a negligible negative association (-0.045), suggesting that while some teachers excel in assisting students with technological development, overall implementation remains inconsistent. Feedback is collected but not regularly, and modifications based on feedback are not effectively implemented, as shown by the negligible negative (-0.028) and weak positive (0.155) associations. In terms of maintaining teacher-student communication, a weak positive association (0.155) was found. However, a weak negative association (-0.183) was observed regarding attitude toward conducting regular online examinations to reduce exam-related anxiety. Since no formal provisions exist, both students and teachers do not perceive this as a necessity. A weak inverse association (-0.224) was also found concerning unfair practices in online exams, while a negligible positive association (0.032) was observed for conducting offline exams. A moderate positive association (0.330) was found between teachers' attitude toward fostering a cooperative spirit among learners and their belief that technology can facilitate peer collaboration in assignments. However, the data shows only a negligible positive association (0.033) between teachers' attitude and actual practices in using technology to ease assignment formulation. In contrast, a relatively strong positive association (0.425) was found regarding teachers' assistance in assignment preparation. Regarding digital library usage, a relatively strong positive association (0.466) was observed among teachers, but interviews revealed that most college libraries are not fully digitalized. A perfect positive association (1.00) was noted between students' attitude and practices in online teacher-student interactions for fulfilling diverse needs, indicating that teachers generally do not consider online interactions sufficient for student development. Additionally, students do not find online learning materials adequate for their studies, as reflected in the relatively strong inverse association (-0.453). Very strong positive associations (0.967 and 0.993) were found in the context of using technology in education, suggesting that students are becoming increasingly instrumental, and technology is mechanizing student-teacher interactions. A relatively strong positive association (0.556) and a moderate positive association (0.249) were found in making modern education more effective and preparing students for future job placements.

### Findings and Conclusion

The analysis revealed that the majority of both UG students and teachers demonstrated a highly favourable attitude toward BL and expressed readiness to integrate this instructional approach into regular teaching-learning practices at the undergraduate level. These findings are consistent with earlier studies conducted by Das (India, 2021), Akbarov et al. (Jordan, 2018), Dhas (India, 2017), Khan (India, 2016), and Benson et al. (UK, 2011), all of which reported positive attitudes among students and teachers toward BL across different levels of education. Despite this overall favourable attitude, the present study identified several factors contributing to a comparatively less favourable perception of BL among some respondents. These include lack of technological awareness, limited internet accessibility, and inadequate infrastructural facilities in colleges. Similar concerns were echoed in the study by Ullah et al. (Pakistan, 2017), which emphasized that infrastructural facilities and exposure to technological equipment significantly influence

students' attitudes toward BL. The researchers further noted that insufficient institutional technological support limits students' exposure, thereby affecting the effective acquisition of knowledge through online learning at the UG level.

To assess the extent of BL implementation at the undergraduate level, a self-developed and validated questionnaire was administered. The gamma test revealed a moderate positive correlation between attitude and practice among both students (0.373) and teachers (0.381). These findings indicate that as the attitude toward BL becomes more favourable, the actual practice of BL also increases. This result supports the notion that positive attitudes act as a facilitating factor for the adoption of blended instructional practices. However, the level of practice did not fully match the high level of positive attitude observed. In contrast, Abbacan-Tuguic (Philippines, 2021) reported a negative correlation between students' attitudes and readiness for BL, where students exhibited positive attitudes but only moderate readiness, suggesting contextual differences in institutional preparedness and support systems.

Informal interviews conducted with teachers and students further revealed that nearly all respondents used some form of technological support in their regular teaching–learning activities. Approximately 40 percent of students reported using 30–40 percent technological assistance in their learning process, while around 33 percent of teachers indicated a similar level of technological integration in their instructional practices. These findings resonate with the University Grants Commission (UGC) concept note on BL, which recommends a balanced integration of online and face-to-face instruction. According to UGC guidelines, online activities should not exceed 70 percent, and face-to-face interaction should constitute at least 30 percent of the total instructional process to ensure effectiveness at any educational level. Overall, the findings of the present study corroborate existing literature in establishing that UG students and teachers generally hold a positive attitude toward BL and recognize its pedagogical value. However, limitations related to technological infrastructure, internet accessibility, and institutional support continue to hinder the full realization of BL practices. The study reinforces the view that while blended learning is widely accepted in principle, its effective implementation requires systematic infrastructural development, technological training, and institutional readiness to bridge the gap between favourable attitudes and actual classroom practices.

## References

1. Akbarov, A. et.al. (2018), Students' Attitude toward Blended Learning in EFL Context, *Acta Didactica Napocensia*, Vol-11(1), pp: 61-68. Retrieved on 06.12.2019. [https://www.researchgate.net/publication/324596694\\_Students'\\_Attitudes\\_toward\\_Blended\\_Learning\\_in\\_EFL\\_Context](https://www.researchgate.net/publication/324596694_Students'_Attitudes_toward_Blended_Learning_in_EFL_Context)
2. 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*, Vol.6 (2), pp. 443-449. Retrieved on 15.04.2022. [https://ijels.com/upload\\_document/issue\\_files/65IJELS-10220219-Challenges.pdf](https://ijels.com/upload_document/issue_files/65IJELS-10220219-Challenges.pdf)
3. Febriani, A. & Kuswaedani, R. (2022), High School EFL Students' Attitudes towards Learning English Using Blended Learning during the Pandemic, *AI- Lisan: Journal Bahasa (e-Journal)*, Vol.7 (2), pp-2022. Retrieved on 13.02.2023.
4. [file:///C:/Users/hp/Downloads/Blended+225-237%20\(1\).pdf](file:///C:/Users/hp/Downloads/Blended+225-237%20(1).pdf)
5. Nayak, K. R. & Panda, H. (2018), Attitude of Pupil Teachers Towards Using Blended Learning Strategies at Secondary Levels for Developing Social Skill of Students, *Journal of Emerging*

- Technologies and Innovative Research*, Vol. 5(4), pp. 1082-1087. Retrieved on 04.05.2022. <https://www.jetir.org/papers/JETIR1804403.pdf>
7. Al-Saleh, R. S. S, (2018), EFL Teacher's Attitudes Towards Blended Learning in Tabuk, Saudi Arabia, *International Journal of Information Research and Review*, Vol. 05 (01), pp: 5065-5071. <https://www.ijirr.com/sites/default/files/issues-pdf/2605.pdf>
8. Luo, T. & Murray, A. (2018), Connected Education: Teachers' Attitudes towards Students Learning in a 1:1 Technology Middle School Environment, *Journal of Online Learning Research*, Vol. 4 (1), pp. 87-116. Retrieved on 30.07.2020. <https://files.eric.ed.gov/fulltext/EJ1174454.pdf>
9. Das, R. (2021), The Attitude of Students and Teachers towards Blended Learning at the Elementary Level, *Ilkogretim Online- Elementary Education Online*, Vol. 20(5), pp. 245-257. Retrieved on 07.06.2022. <https://www.bibliomed.org/mnsfulltext/218/2181612931569.pdf?1645629>
10. Khan, H. S. (2016), Attitude of Prospective Teachers towards Blended Learning Technology: A Normative Approach, *International Journal of English Language, Literature and Humanities*. Retrieved on 16.08.2020. <https://ijellh.com/OJS/index.php/OJS/article/view/1438/1395>
11. Benson, V. et.al. (2011), Educators' perceptions, attitudes and practices: blended learning in business and management education, *Research in Learning Technology*, Vol. 19 (2), pp. 143-154. Retrieved on 28.03.2023.
12. Ullah, O. et.al. (2017), Student's Attitude towards Online Learning at Tertiary Level, *PUTAJ-Humanities & Social Sciences*, Vol-25(12), pp:63-81. Retrieved on 12.04.2020. [https://www.researchgate.net/publication/324829386\\_Students'\\_Attitude\\_towards\\_Online\\_Learning\\_at\\_Tertiary\\_Level](https://www.researchgate.net/publication/324829386_Students'_Attitude_towards_Online_Learning_at_Tertiary_Level)