



**National Conference on Latest Innovations in Engineering,
Science, Management and Humanities (NCLIESMH – 2024)**

26th May, 2024, Raipur, Chhattisgarh, India.

CERTIFICATE NO : NCLIESMH /2024/C0524580

**Perception and Effectiveness of Blended Learning Among Secondary
School Students in Kolkata**

Piyali Paul

Research Scholar, Department of Education, Kalinga University, Raipur, Chhattisgarh, India.

ABSTRACT

Blended learning is a term used to describe educational programs that mix traditional classroom instruction with digital resources available online. The purpose of this research was to explore how secondary school pupils in Kolkata, West Bengal, view blended learning and what they think about it. Stratified random selection was used to pick 220 pupils from public and private schools, spanning urban and rural regions. An online questionnaire that was designed to be self-paced was used to gather data. The results show that most students had a good impression of blended learning and were well-informed about it. In comparison to both online and in-person learning, blended learning emerged as the technique of choice. There were no statistically significant variations in perception according to gender or region. Findings from the study stress the need of successfully incorporating blended learning into secondary school curricula to improve students' academic performance.

Keywords: *Blended Learning, Education, Secondary school, Perception, Awareness.*

I. INTRODUCTION

'Blended learning' first appeared in the context of corporate training in the corporate world; it then made its way to universities and colleges; and lastly, it ended up in language classrooms. Traditional classroom methods are supplemented with digital resources available online in a blended learning program. In addition to the teacher and student being physically present, students should also be able to direct the lesson's pace, location, direction, and timing to some extent. There is still a teacher present in the classroom when students go to school, but computer-mediated learning is gradually replacing traditional classroom practises in both content and delivery. An existing strategy for developing blended learning environments and standards for such settings were prerequisites to the development of mixed learning environments, which began with a reevaluation and revision of existing practises.

'Hybrid Learning' and the 'Flipped Classroom' are further names for it. It finds use in fields such as training and professional development as well. Blended learning techniques have the potential to raise student satisfaction, lower stress levels, and deepen their understanding. Teachers may engage with their students on a deeper level if they use this learning process to their advantage. Students will



National Conference on Latest Innovations in Engineering, Science, Management and Humanities (NCLIESMH – 2024)

26th May, 2024, Raipur, Chhattisgarh, India.

have more possibilities to succeed because of this. Online education gives students total freedom in terms of when, where, how, and how fast they learn. In addition to fostering autonomy, it promotes the development of abilities including planning, self-control, and self-regulation.

Because it blends instructional differentiation with blended learning, blended learning is also known as personalized learning. Blended learning offers students more chances to learn and perform better than traditional learning methods since it provides a more dynamic and flexible learning environment. Blended learning has been shown to improve student learning outcomes, however students lack the motivation to actively participate in this technologically enhanced learning environment. It is believed that the most common obstacles faced by students in a mixed learning environment include an absence of relevant knowledge and an unwillingness or reluctance to participate. Additionally, the majority of students struggle to adapt to blended learning systems, which ultimately leads to subpar results from these systems. According to Karaaslan and Kilic (2019), while creating course materials, it is important to think about each student's profile, their distinctive traits, and how much it will cost to offer the course. Blended learning encompasses a wide range of learning tools and resources, and it is best implemented in conjunction with classroom instruction and computer-mediated learning.

Blended learning systems, in general, combine the strengths of traditional classroom instruction with those of computer-assisted learning. Students can benefit from improved time management skills and access to high-quality online and in-person academic support when technology is a part of blended learning environments. Blended learning environments are rapidly expanding in the realm of higher education. The success or failure of a blended learning course is highly dependent on the mindset of its students. Research on blended learning has mostly come from developed nations. But there has been very little research in developing countries. Many faculty and students are hesitant to fully commit to blended learning when it is first introduced at their schools or colleges. The ability to continue learning and participate in blended learning environments is impacted by the histories and traits of learners, who are essential components of any learning process. It was shown that the way learners felt about blended learning greatly affected their level of motivation and pleasure.

II. REVIEW OF LITERATURE

Sarkar, Dhananjay. (2023) Blended learning is a cutting-edge idea that combines the benefits of traditional classroom instruction with those of technology-assisted learning, which includes both online and offline learning modes. It opens up possibilities for CAL, hands-on learning, and cooperative learning. A combination of highly motivated instructors and students, together with meticulous planning, a positive mindset, and large financial resources, is necessary for the effective implementation of blended learning. Because it integrates several methods, it is intricate and hard to arrange. This study delves into the concept of blended learning, identifying its key features and



National Conference on Latest Innovations in Engineering, Science, Management and Humanities (NCLIESMH – 2024)

26th May, 2024, Raipur, Chhattisgarh, India.

outlining the conditions necessary for its effective execution. Blended learning's introduction to India's school curriculum is also a cover-up. Blended learning is an important approach, and this research aims to show that.

Jayaraman, K et al., (2022) Blended learning is a term used to describe educational programs that mix conventional classroom instruction with digital resources available online. This research set out to do two things:(1) discover how secondary school students feel about blended learning, and(2) develop a method for measuring those feelings. Stratified random sampling was used to pick 895 secondary school students from the Kottayam District in Kerala. The investigators used a measure they created themselves to gauge how people felt about blended learning. Gender, location, instructional medium, school type, and administrative status were not found to be statistically differentiating factors across the groups. With the study's results come suggestions for more research and recommendations.

Id, Gusnita et al., (2021) The current research conducts an experimental study with 36 eleventh graders, applying the Blended Learning Model to the secondary school level. In one group, 18 students were taught using a blended learning paradigm that made use of visuwords as supplementary materials, whereas in the other group, the students were taught using a traditional, in-person approach. The researchers set out to do two things: (1) determine whether or whether the blended learning approach was successful in raising students' vocabulary performance, and (2) discover more about the students' perspectives on the topic. According to the study, the vocabulary accomplishment of both the experimental class and the control class increased depending on the presented context. Blended learning model's efficacy was average. Having said that, the experimental group's vocabulary grew more rapidly than the control groups. Additionally, the majority of students had a favorable impression of the blended learning approach. Their positive emotions toward the blended learning paradigm and the belief that their performance has an impact on their final grade provide credence to this view. It follows that a Blended Learning paradigm has an effect on student performance. In addition, the pupils' favorable impressions were supported by their high vocabulary performance grades.

Md. Mahasin Ali (2021) This study aims to examine how students at the University of Calcutta feel about blended learning. The research methodology used for the study is quantitative. There is no discernible difference in attitude toward Blended Learning between male and female Calcutta University students, according to the findings of the self-constructed attitude scale I used. In addition, Calcutta University students from rural areas and urban areas do not vary much in their attitudes towards Blended Teaching. The majority of college and university students believe that Blended Learning is a viable option. In their opinion, the majority of students would benefit from a hybrid approach, with some course material taught online and some delivered in a more traditional



National Conference on Latest Innovations in Engineering, Science, Management and Humanities (NCLIESMH – 2024)

26th May, 2024, Raipur, Chhattisgarh, India.

classroom setting. Students are generally in favor of the idea that Blended Learning will be beneficial for them. The majority of students believe that instructors will gain from using a Blended Learning approach in their classrooms. Blended learning is supposed to help students learn more effectively, according to most students. Students are generally of the opinion that the Blended Learning approach will allow for more adaptability in both the classroom setting and individual lessons. It is the opinion of several students that Blended Learning will be challenging for many pupils. Blended learning has its advocates, but some college students insist that traditional classroom instruction is the way to go.

Muhammad, Asif et al., (2020) Educators may enhance their capacity to teach by using technology in a timely and efficient manner, as generative adaption of technology has alleviated the strain on instructors. In light of this assumption, the current research sought to evaluate secondary school educators' use of Blended Learning (BL) strategies. To that end, researchers in the district of Tordher, Khyber Pakhtun Khwa (KPK), performed an empirical study of the boys' section of Government High School No. 1. The research included 120 ninth grade science students and 4 science instructors. A survey questionnaire and random interviews with 20 students were used to determine how students perceived their instructors' preparation, inventiveness, and feedback skill development procedures in the BL setting. The data were analyzed using descriptive statistics, and the answers were assessed using a 5-point based Likert scale. According to Creswell (2014), this study used the mixed-method research strategy known as the explanatory sequential approach. The research concluded that secondary school instructors should be encouraged to employ the BL approach rather than relying only on Information Communication Technology (ICT) or conventional methods of instruction since their practices improved in the BL setting.

Yapici, İ. Ü., & Akbayın, H. (2012) Finding out how high school students feel about blended learning is the main goal of this research. In the second half of the 2009–2010 school year, 47 ninth graders from Nevzat Ayaz Anatolian High School participated in the research as part of the biology class's "Classification of Living Things and Biodiversity" topic. Lessons were delivered in a manner compatible with the blended learning approach, using both online and in-person methods. The blended learning model's online component was a Learning Management System (LMS) called Moodle. There was a 10-week application period. In order to find out how students felt about blended learning, we used a scale and conducted interviews. Scale analysis revealed that their opinions were "highly" positive. Students' responses in the interviews showed that the blended learning model gave them many opportunities, such as time to prepare for classes, unlimited review of previously covered material, access to course materials regardless of location or time of day, opportunities to test their knowledge, and even communicate with their teachers and classmates outside of class. However, as the interviews showed, there were a number of issues, such as people's homes not having an Internet connection or having trouble playing the videos.



National Conference on Latest Innovations in Engineering, Science, Management and Humanities (NCLIESMH – 2024)

26th May, 2024, Raipur, Chhattisgarh, India.

III. RESEARCH METHODOLOGY

Research Design

This study used a descriptive research strategy to look at how high school students felt and what they said about the factors that were chosen for the investigation.

Population of the Study

Students from both urban and rural secondary schools in Kolkata, West Bengal, were included in the study's population. These schools were either public or private.

Sampling Technique

A stratified random sampling technique was employed to select the respondents.

Sample Size

The sample for the present study consisted of 220 secondary school students.

Sources of Data Collection

In order to provide a thorough analysis, the current study included data collected from both primary and secondary sources.

- **Primary Source:** Using a Google Forms-created self-structured online questionnaire, we obtained primary data from students at the secondary level.
- **Secondary Source:** Books, scholarly journals, papers, theses, dissertations, government studies, educational policies, and education-related official websites were among the many published and unpublished sources from which secondary data was culled.

Tool Used for Data Collection

A self-structured questionnaire was created and distributed using Google Forms for the purpose of data collection. After getting the relevant permits, 350 secondary school pupils from different schools in Kolkata, West Bengal were given the online questionnaire. All responders, regardless of gender, were given the identical questionnaire. Several replies were deemed incomplete or wrongly filled out and therefore eliminated throughout the evaluation process. In the end, 220 surveys were considered legitimate and full of useful information.

Statistical Techniques

Statistical methods such as the Mann-Whitney U Test and descriptive statistics like frequency, percentage, mean, and standard deviation were used to examine the tabulated and coded data.



National Conference on Latest Innovations in Engineering, Science, Management and Humanities (NCLIESMH – 2024)

26th May, 2024, Raipur, Chhattisgarh, India.

IV. DATA ANALYSIS AND INTERPRETATION

Table 1: Gender of The Respondents

Particulars	Frequency	Percentage
Male	56	25.5
Female	164	74.5
Total	220	100.0

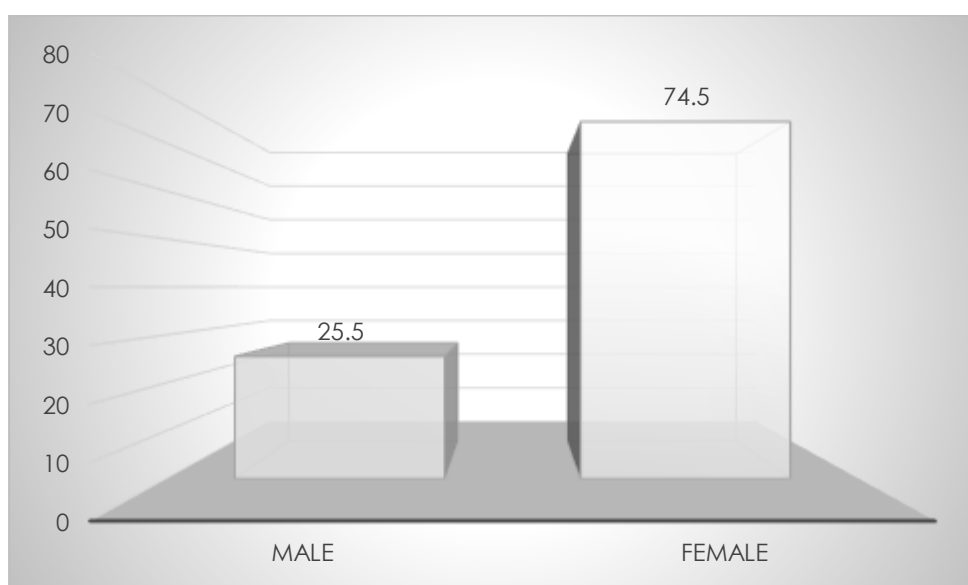


Figure 1: Gender of The Respondents

From the data in table1, we can deduce that out of 220 samples, 174 (74.5%) were female and 56 (25.5%) were male.

Table 2: Locality of The Respondents

Particulars	Frequency	Percentage
Rural	88	40.0
Urban	132	60.0
Total	220	100.0



National Conference on Latest Innovations in Engineering, Science, Management and Humanities (NCLIESMH – 2024)

26th May, 2024, Raipur, Chhattisgarh, India.

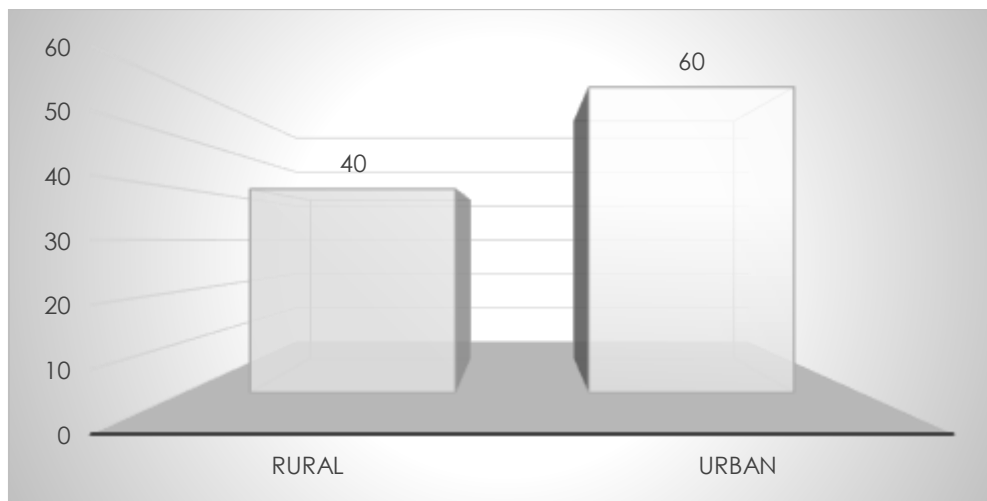


Figure 2: Locality of The Respondents

Respondents' geographic distribution is seen in Table 2. A total of 220 students were polled; 132 students, or 60%, reside in urban areas, while 88 students, or 40%, do so in rural areas.

Table 3: Awareness about Blended Learning

Particulars	Frequency	Percentage
Highly Aware	169	76.8
Aware	26	11.8
Little Aware	25	11.4
Total	220	100.0

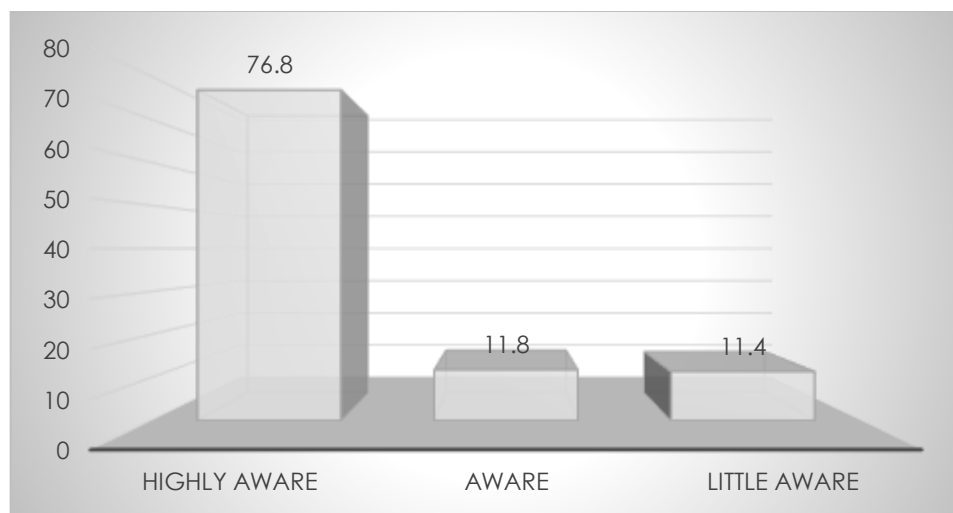


Figure 3: Awareness about Blended Learning



National Conference on Latest Innovations in Engineering, Science, Management and Humanities (NCLIESMH – 2024)

26th May, 2024, Raipur, Chhattisgarh, India.

Students' awareness of blended learning is seen in Table 3. Blended learning was mentioned by a large number of students (76.8%), out of 220 who participated in the survey. Among the pupils surveyed, 26 (11.8%) said they were "simply aware," while 25 (11.4%) said they knew very little about the idea.

Table 4: Attitude of Students Towards Different Learning Methods

Particulars	Frequency	Percentage
Online	47	21.4
Face to Face	81	36.8
Blended	92	41.8
Total	220	100

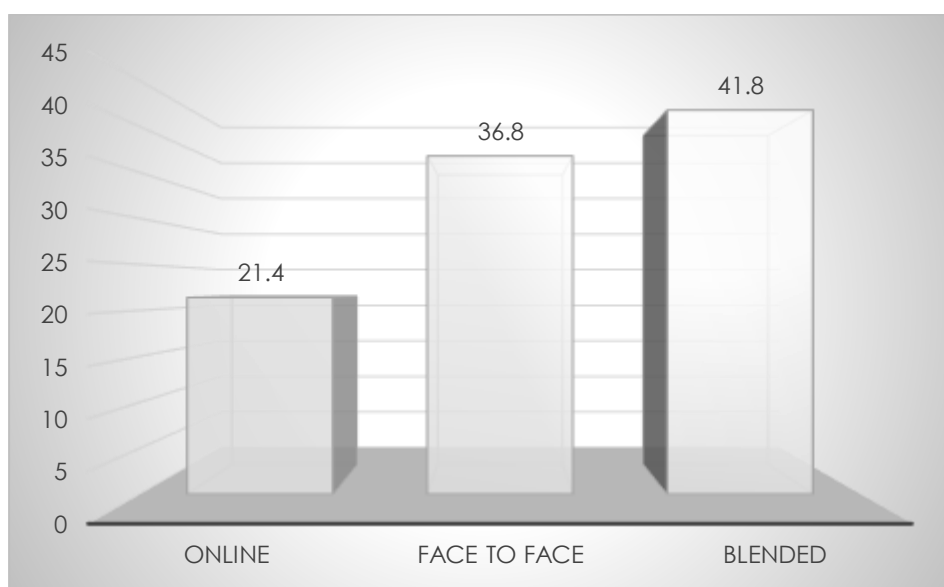


Figure 4: Attitude of Students Towards Different Learning Methods

The pupils' attitude towards various learning techniques is presented in Table 4. Blended learning was the most popular option among the 220 students that participated in the survey (92 students, or 41.8% of the total). While 47 students (21.4% of the total) chose online learning, 81 students (36.8% of the total) preferred in-person instruction.



National Conference on Latest Innovations in Engineering, Science, Management and Humanities (NCLIESMH – 2024)

26th May, 2024, Raipur, Chhattisgarh, India.

Table 5: Perception of Students on Blended Learning as a Promising Method of Learning

Particulars	Frequency	Percentage
Yes	82	37.3
No	50	22.7
Not sure	88	40.0
Total	220	100

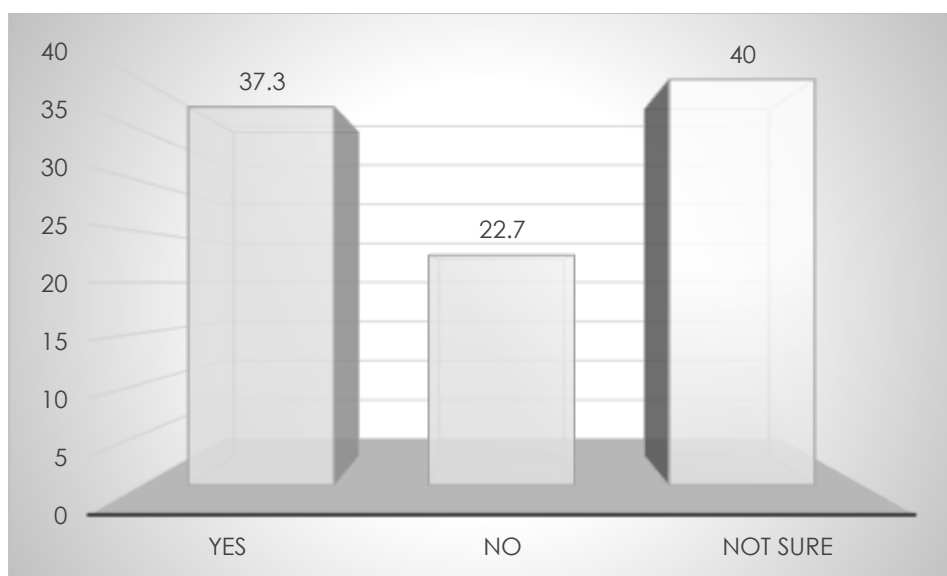


Figure 5: Perception of Students on Blended Learning as a Promising Method of Learning

Blended learning is seen as a promising mode of instruction by students, according to Table 5. Of the 220 students that participated in the survey, 82 (or 37.3%) gave affirmative responses. Fifty pupils, or 22.7% of the total, said No. The percentage of 88 students who answered "Not sure" was high, at 40.0%.

Table 6: Students' Perception towards Blended Learning

Particulars	Frequency	Percentage
High	98	44.5
Medium	76	34.5
Low	46	21.0
Total	220	100.0



National Conference on Latest Innovations in Engineering, Science, Management and Humanities (NCLIESMH – 2024)

26th May, 2024, Raipur, Chhattisgarh, India.

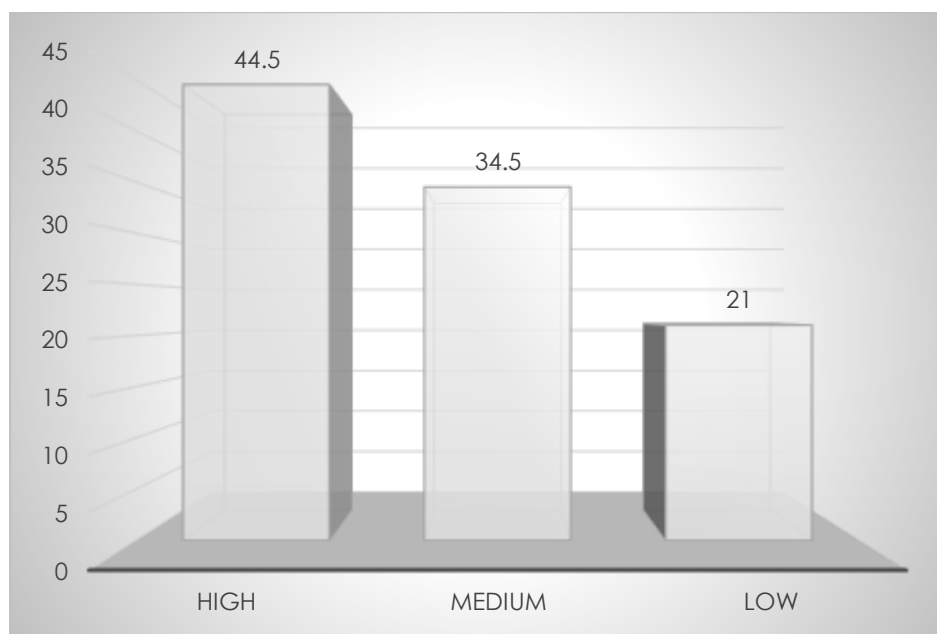


Figure 6: Students' Perception towards Blended Learning

Table 6 shows how students feel about blended learning as a whole. A total of 98 students (44.5%) out of 220 responders showed a high level of perception. The perception level was medium for 76 students (34.5%). Along the same lines, 46 students (21.0%) demonstrated a poor understanding.

Table 7: Gender-wise Difference in Perception towards Blended Learning

Gender	Mean	Std. Deviation	Mean Rank	Sum of Ranks	Z	P-value
Male	8.30	2.24	81.20	3060.00	-.831	.410
Female	7.92	2.38	73.45	8264.00		

A comparison of students' perceptions towards blended learning depending on gender is presented in Table 7. A standard deviation of 2.24 indicates that male students had an average perception score of 8.30, whereas a standard deviation of 2.38 indicates that female students had an average score of 7.92. The average rank for men is 81.20, while it's 73.45 for women. A p-value of 0.410 and a Z-value of -0.831 suggest that there is no statistically significant difference in perception between male and female students.



National Conference on Latest Innovations in Engineering, Science, Management and Humanities (NCLIESMH – 2024)

26th May, 2024, Raipur, Chhattisgarh, India.

Table 8: Locality-Wise Difference in Perception towards Blended Learning

Locality	Mean	Std. Deviation	Mean Rank	Sum of Ranks	Z	P-value
Rural	7.85	2.31	104.20	9170.00	-0.564	0.573
Urban	8.10	2.28	112.45	14855.00		

Based on their location, students' perceptions of blended learning are compared in Table 8. Urban students have a slightly higher mean perception score of 8.10 with a standard deviation of 2.28 than rural students, who have a score of 7.85 with a standard deviation of 2.31. Rural students have an average rank of 104.20, whereas urban students have an average rank of 112.45. There is no statistically significant difference in perception between students in rural and urban areas, according to the Z-value of -0.564 and p-value of 0.573.

V. CONCLUSION

Blended learning is more popular than both conventional in-person and entirely online techniques, which shows that students are open to new ways of learning that use technology. Blended learning is just as effective and acceptable across all demographic groups, according to the results, which also show that students' perceptions are unaffected by gender and location. The significance of incorporating blended learning methodologies into schools to enhance engagement, comprehension, and learning outcomes is highlighted by these observations. In order to meet the demands of a varied student body and encourage the development of skills appropriate to the modern world, educators and policymakers in the field of education should prioritize the creation of well-organized blended learning programs.

REFERENCES

1. Adistana, G. A. E., & Dwiyoogo, W. D. (2016). The influence of blended learning station-rotation (cooperative vs. competitive) and cognitive style towards intellectual skill in management construction. *International Journal of Management and Administrative Sciences*, 3(5), 1–7.
2. Adu, S., & Ohemeng, P. (2015). Students' perception of blended learning environment: A case study of the University of Education, Winneba, Kumasi Campus, Ghana. *International Journal of Education and Development Using Information and Communication Technology*, 11(1), 80–100.
3. Ali, M. M. (2021). Students attitudes toward blended teaching among students of the University of Calcutta. *International Journal of Advanced Research*, 9(7), 267–274.
4. Alsahhi, N. R., Eltahir, M., & Al-Qatawneh, S. S. (2019). The effect of blended learning on the academic achievement of ninth grade students in science and their attitudes towards its use. *Heliyon*, 5, 1–10. <https://doi.org/10.1016/j.heliyon.2019.e02095>.



**National Conference on Latest Innovations in Engineering,
Science, Management and Humanities (NCLIESMH – 2024)**

26th May, 2024, Raipur, Chhattisgarh, India.

5. Banyen, W., Viriyavejakul, C., & Ratanaolarn, T. (2016). A blended learning model for learning achievement enhancement of Thai undergraduate students. *International Journal of Emerging Technologies in Learning*, 11(04), 48–55.
6. Das, R. P., & Das, K. (2021). Perception towards online/blended learning at the time of COVID-19 pandemic: An academic analytics in the Indian context. *Asian Association of Open Universities Journal*, 16(1), 41–60.
7. Id, G., Salija, K., & Atmowardoyo, H. (2021). The effectiveness of blended learning model for teaching vocabulary at secondary school. *Celebes Journal of Language Studies*, 1(1), 64–76.
8. Jayaraman, K., Jayalakshmy, P., & Suresh, K. (2022). Secondary school students' attitude towards blended learning. *International Journal of Health Sciences*, 6(S2), 7336–7345.
9. Lam, J. Y. C. (2015). Examining student experience of blended learning from the perspective of community of inquiry framework. *AAQU Journal*, 10(2), 81–99.
10. Muhammad, A., Edirisingha, P., Ali, R., & Shahzad, S. (2020). Teachers' practices in blended learning environment: Perception of students at secondary education level. *Journal of Education and Educational Development*, 7(2), 286–306.
11. Pallavi Ughanda, & Shailesh Badre. (2020). Blended learning: A study on student's perception about suitability of the framework for higher education. *The Online Journal of Distance Education and e-Learning*, 8(2), 72–79.
12. Ranjan, P. (2020). Is blended learning better than online learning for B.Ed students? *Journal of Learning for Development*, 7(3), 349–366.
13. Sarkar, D. (2023). Blended learning: A necessity for Indian education system. *International Journal of Financial Management Research*, 5(4), 1–11.
14. Sharma, A., & Sharma, S. (2020). Effect of blended learning on achievement in English of IX graders in relation to self-efficacy. *International Journal of Interdisciplinary and Multidisciplinary Research*, 5(9), 467–476.
15. Yapici, İ. Ü., & Akbayın, H. (2012). High school students' views on blended learning. *Turkish Online Journal of Distance Education*, 13(4), 125–139.