



RESEARCH ARTICLE

EFFECTIVENESS OF BLENDED-LEARNING FOR TEACHING-LEARNING OF ENGLISH AT SECONDARY LEVEL IN WEST BENGAL

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Abstract

This research seeks to evaluate the differences in learning outcomes in the environments of Blended Learning and Traditional Learning for English as a second language among secondary level students in West Bengal. With the increasing tendency of learners to solve educational problems using electronic gadgets and access e-materials from anywhere, it is imperative for educational institutions to emphasize Blended Learning which combines online and traditional face-to-face teaching methods, shows promise in improving students' academic achievements. Three hundred students from five schools under the W. B. B. S. E. were selected randomly to partake in this study. This research examined the effectiveness of Blended Learning by comparing it with traditional classroom learning, using evaluation scores from two selected lessons. The findings revealed that pass rates were significantly higher in the Blended Learning environment. This research confirms that Blended Learning not only enhances academic performance but also positively influences students' motivation, attitude, and self-esteem. The results highlight the necessity of adequate infrastructure to support Blended Learning practices, suggesting that investments in technology and teacher training are crucial for successful implementation. The conclusions drawn from this research provide a basis for future research on Blended Learning at secondary level.

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Introduction:-

The emergence of digital technology has greatly transformed the educational landscape, presenting new scopes and challenges for teaching and learning. The integration of ICT in education, particularly through Blended Learning, is becoming significantly essential. Blended Learning combines conventional in-person teaching combined with online learning elements, forming a hybrid model that utilizes the advantages of both methods. This research aims to investigate the impact of Blended Learning on teaching English as a second language at secondary level students in West Bengal, India.

Now-a-days, there has been an increasing tendency among learners to utilize electronic gadgets and access educational materials online. This shift necessitates a corresponding adaptation in teaching methodologies. Blended

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Learning offers a viable solution by integrating digital tools and resources with conventional teaching practices. It allows for greater flexibility, accessibility, and engagement, which can lead to improved academic outcomes.

This study focuses on students of secondary level under the WBBSE. This research compares the achievements of students instructed by Blended Learning with those instructed using traditional classroom methods. By examining evaluation scores from selected lessons, this study seeks to determine the impact of Blended Learning on students' academic achievements, motivation, attitude, and self-esteem. According to a study on the readiness for online teaching-learning, educators and students show significant preparedness and adaptability for integrating online elements in education, which supports the effectiveness of Blended Learning approaches (Olurinola & Hassan, 2022).

Rationale of the Study:

The rationale behind this study stems from the need to address the evolving educational landscape and the growing importance of digital literacy. Traditional teaching methods, since effective in certain contexts, may not fully address the varied requirements of contemporary learners. Integration of digital tools in the classroom can enhance the learning experience by providing interactive, multimedia-rich content that can be accessed anytime and anywhere.

Blended Learning has been shown to improve student participation and motivation, which are main factors for academic achievements. By combining classroom instruction with online learning, students benefited from the immediate feedback and personalized attention of traditional teaching while also enjoying the flexibility and resources available through digital platforms.

In West Bengal, like many other regions, there is a pressing need to improve educational outcomes at the secondary level. This study aims to provide empirical evidence on the utility of Blended Learning in this research work, offering insights that can inform educational policies and practices. By identifying the infrastructure requirements and training needs for successful implementation, the study also seeks to guide schools and educational authorities in making informed decisions about adopting Blended Learning.

Emergence of the Study

The emergence of this study is driven by several key factors:

Technological Advancements:

The rapid development of technology has made digital tools and resources more accessible and affordable. This has opened up new possibilities for enhancing the teaching and learning process.

Changing Learner Preferences:

Today's students are digital natives who are familiar with using technology in their daily lives. They often prefer learning methods that incorporate digital elements, which can make education more engaging and relevant.

Educational Challenges:

Traditional teaching methods may not adequately address the diverse needs of all students, particularly in large and resource-constrained classrooms. Blended Learning can offer a more personalized and flexible approach to education.

Policy Initiatives:

Governments and educational institutions are increasingly recognizing the importance of digital literacy and the need to integrate technology into the curriculum. This study aligns with broader policy initiatives aimed at improving educational outcomes through innovative teaching strategies.

Empirical Evidence:

An increasing amount of research supporting the benefits of Blended Learning. However, more context-specific studies are needed to understand its impact in different educational settings. This research seeks to fill this gap by providing evidence from the secondary education context in West Bengal.

By investigating the comparative effectiveness of Blended Learning and traditional teaching methods, this study seeks to contribute to the broader discourse on educational innovation. It aims to provide actionable insights that can help educators and policymakers enhance the quality of education and better prepare students for the demands of the 21st century.

Objectives of The Research are as follows:

- 1.To determine the relation between Blended Learning and the academic achievements of secondary level students.
- 2.To identify the infrastructure requirements necessary for the effective implementation of Blended Learning practices at the secondary level.

Research Questions are as follows:

- (i) What is the impact of Blended Learning on the academic achievements of secondary level students?
- (ii) How does the availability of technological resources influence the adoption and effectiveness of Blended Learning practices among secondary level students?

Blended Learning



Source8: Benefits of Blended Learning You Might Have Missed by Jackson Best, 3P Learning.

Two hypotheses are as follows:

Hypothesis1: There is a significant relation between Blended Learning and achievements of pupils at secondary level.

Hypothesis2: There are requirements of infrastructure development to understand Blended Learning practices at Secondary level students.

Methodology:-

Research Design:

The research adopted an experimental and survey design, which combines qualitative and quantitative data to provide consequential and proper information. This method was chosen for its time efficiency and its ability to engage participants who are central to the research objectives. Experimental research involves examining multiple variables and studying groups under various conditions. Researchers can manipulate these variables to observe the resulting effects, aiding in the testing of theories, creation of new products, and making discoveries. While experimental research is deemed the most dependable method for testing hypotheses about human cognition and emotions, it can be time-intensive, and researchers must consider ethical implications.

Sample:

The sample consisted of 300 students at secondary level enrolled under W.B.B.S.E. during academic year 2023. The students were randomly selected and divided into two groups:

1. Control Group (Traditional Learning)
2. Experimental Group (Blended Learning)

The participants were from five different schools, and they are from 14 to 15 years old.

Procedure:

1. **Selection of Lessons:** Two lessons from the textbook "BLISS" for Class IX, as recommended by the WBBSE, were chosen:

Lesson 1: "Bhola Grandpa"

Lesson 3: "Autumn"

2. **Teaching Methods:**

Control Group: Traditional classroom teaching using a blackboard, chalk, and duster.

Experimental Group: Blended Learning method incorporating digital tools such as PowerPoint presentations, YouTube videos, Google search engine, online dictionary, and text-related images.

3. **Implementation:**

The experimental group received online classes scheduled on Saturdays and Sundays via Google Meet. Information and links were shared through a WhatsApp group.

The control group received traditional classroom instruction.

4. **Evaluation:**

After completing the teaching sessions, students were assessed using a questionnaire designed by the researcher and standardized by two secondary school teachers and two resource persons.

The evaluation was conducted online using a Google Form for the experimental group.

Collection of Data:

Achievement tests conducted to both the experimental and control groups. Questionnaires for gathering information on students' perceptions, teachers' perceptions, and the institutions' infrastructure.

Data Analysis:

Data analysis involved comparing the mean scores of the experimental and the control groups using statistical methods. Z-scores were calculated to determine the significance of the differences between the groups.

Tools of Research

1. **Questionnaires:** A structured questionnaire was composed by the researcher and standardized by educational experts. This was used to gather qualitative data from students' and teachers' regarding their perceptions of Blended Learning.
2. **Achievement Tests:** Standardized tests based on the two selected lessons from the textbook "BLISS" were used to measure students' learning outcomes.
3. **Digital Tools for Blended Learning:** PowerPoint presentations, YouTube videos, Google search engine, Online dictionary, WhatsApp for communication and information sharing, Google Meet for online classes, Google Forms for online assessments
4. **Statistical Tools:** Mean and standard deviation calculations, Z-score calculations to test the hypotheses

This methodology and the use of various tools provided a comprehensive approach to evaluating the effectiveness of Blended Learning compared to conventional teaching methods in improving learning outcomes at secondary level students in West Bengal.

Data Analysis and Interpretation of achievement Tests:

To test these hypotheses, a comparison was conducted between Blended Learning and Traditional Teaching method of a second language through a table as shown in Table 1 to Table 5.

School 1:- Jhawkhali High School (HS):

Jhawkhali High School(HS), Block - Kulpi, South 24 Pgs, W. B., India			
Class-Room Teaching (Control Group)		Blended Mode Teaching (Experimental Group)	
Mean	SD	Mean	SD
8.16666	3.1631	13.8	2.5650
Z- Score: 7.571			

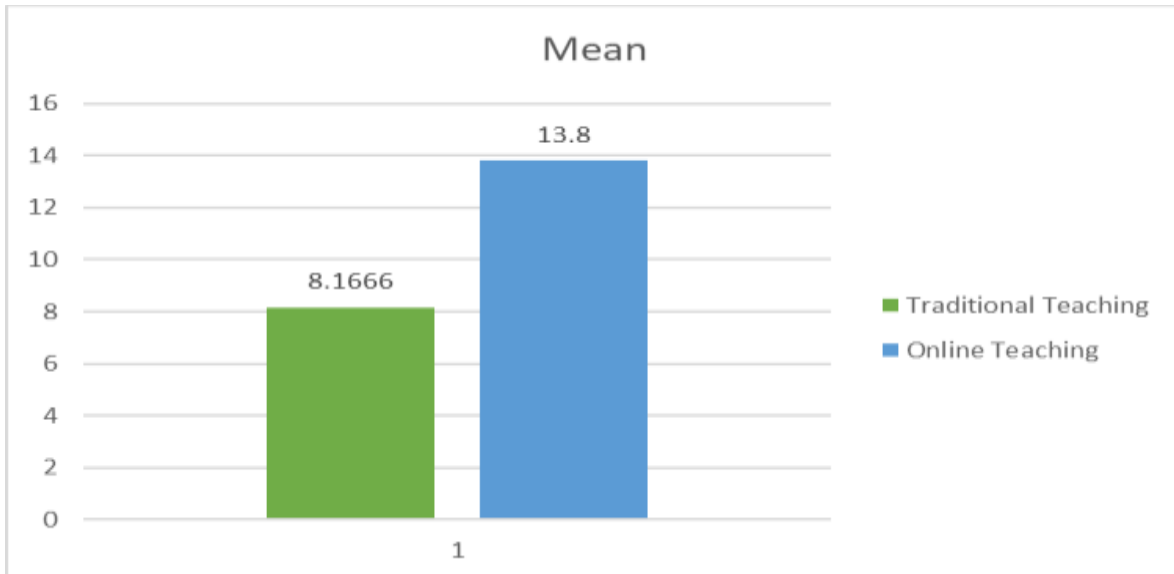


Figure 1:- Comparison of mean scores obtained by Traditional Teaching (Control Group) and Blended Mode Teaching (Experimental Group) in the achievement test by Bar Graph.

Result Analysis and Interpretation: -

Z-Score= 7.571 > Critical Value at 1% significant level=2.58 & 5% sig. level=1.96; So, there is significant difference between two groups. Since the mean of the experimental group is more than the control group, teaching by Blended Learning is more effective than the Traditional method.

In addition to the achievement tests, interviews were carried out with Head of the Institutions, English teachers and students to collect more information on the facilities and understanding of Blended Learning.

School 2:- Protapnagar Giridhari High School (HS):

Protapnagar Giridhari High School(HS), Block - Sonarpur, South 24 Pgs, W. B., India			
Class-Room Teaching (Control Group)		Blended Mode Teaching (Experimental Group)	
Mean	SD	Mean	SD
7.7333	3.1286	14.9666	2.4280
Z- Score: 5.8648			

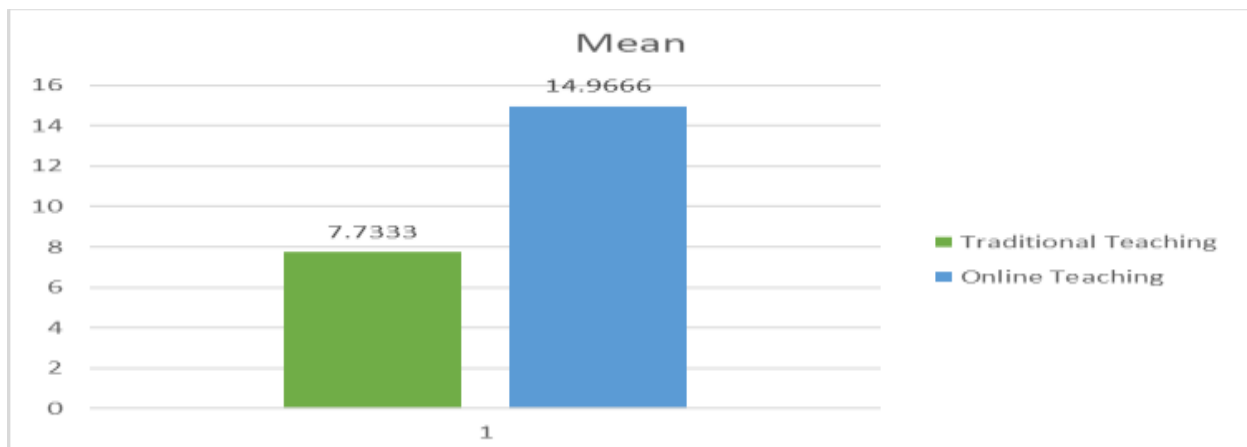


Figure 2:- Comparison of mean scores obtained by Traditional Teaching (Control Group) and Blended Mode Teaching (Experimental Group) in the achievement test by Bar Graph.

Result Analysis and Interpretation:-

Z-Score= 5.8648 > Critical Value at 1% significant level=2.58 & 5% sig. level=1.96; So, there is significant difference between two groups. Since the mean of the experimental group is more than the control group, teaching by Blended Learning is more effective than the Traditional method.

School3:- Gorkhara Vidyamandir High School (HS):

Gorkhara Vidyamandir High School (HS), Block - Sonarpur, South 24 Pgs, W. B., India			
Class-Room Teaching (Control Group)		Blended Mode Teaching (Experimental Group)	
Mean	SD	Mean	SD
7.63333	2.47028	13.6333	3.04544
Z- Score: 8.3822			

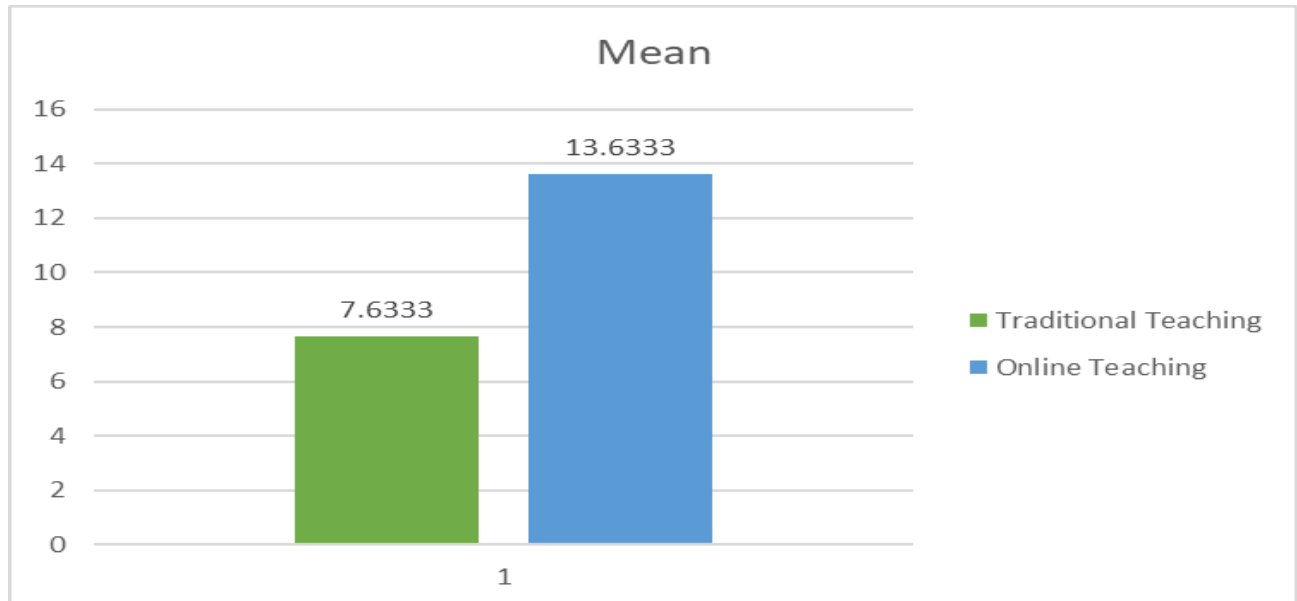


Figure 3:- Comparison of mean scores obtained by Traditional Teaching (Control Group) and Blended Mode Teaching (Experimental Group) in the achievement test by Bar Graph.

Result Analysis and Interpretation:

Z-Score= 8.3822 > Critical Value at 1% significant level=2.58 & 5% sig. level=1.96; So, there is significant difference between two groups. Since the mean of the experimental group is more than the control group, teaching by Blended Learning is more effective than the Traditional method.

School4:- Laskarpur Rabindra Vidyapith for Girls'(HS):

Laskarpur Rabindra Vidyapith for Girls'(HS), Block - Sonarpur, South 24 Pgs, W. B., India			
Class-Room Teaching (Control Group)		Blended Mode Teaching (Experimental Group)	
Mean	SD	Mean	SD
8.1666	2.6663	13.13333	1.96053
Z- Score: 8.224			

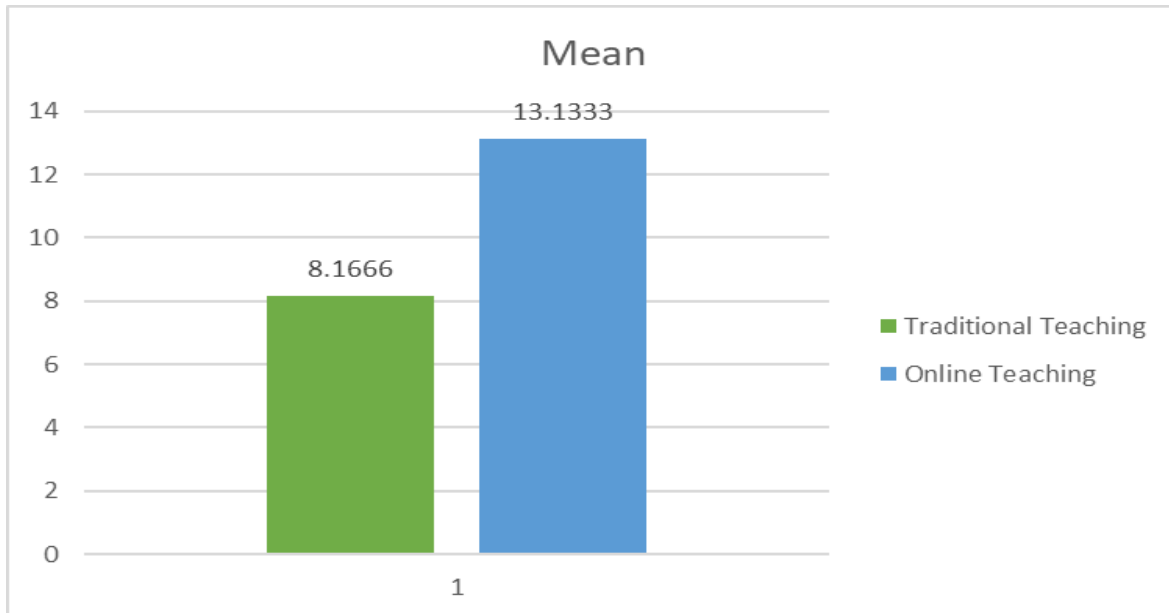


Figure 4:- Comparison of mean scores obtained by Traditional Teaching (Control Group) and Blended Mode Teaching (Experimental Group) in the achievement test by Bar Graph.

Result Analysis and Interpretation:

Z-Score= 8.224 > Critical Value at 1% significant level=2.58 & 5% sig. level=1.96; So there is significant difference between two groups. Since the mean of the experimental group is more than the control group, teaching by Blended Learning is more effective than the Traditional method.

School5:- Mallikpur Girls’ High School (HS):

Mallikpur Girls’ High School (HS), Block - Barupur, South 24 Pgs, W. B., India			
Class-Room Teaching (Control Group)		Blended Mode Teaching (Experimental Group)	
Mean	SD	Mean	SD
7.7666	2.64813	13.5	2.5427
Z- Score: 8.558			

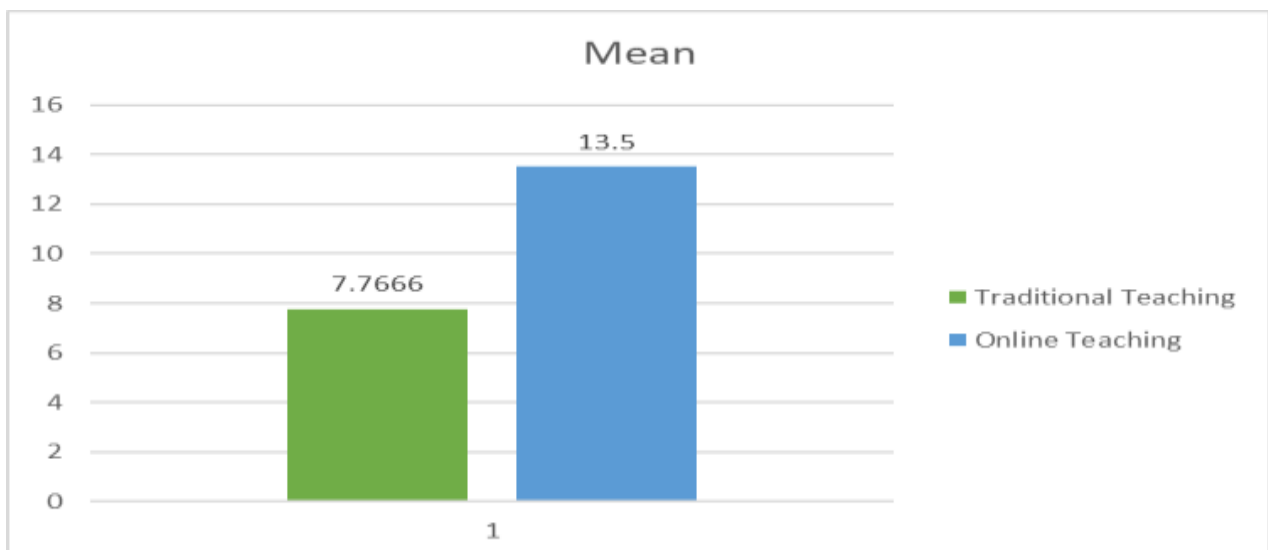


Figure 5:- Comparison of mean scores obtained by Traditional Teaching (Control Group) and Blended Mode Teaching (Experimental Group) in the achievement test by Bar Graph.

Result Analysis and Interpretation:-

Z-Score= 8.558 > Critical Value at 1% significant level=2.58 & 5% sig. level=1.96; So, there is significant difference between two groups. Since the mean of the experimental group is more than the control group, teaching by Blended Learning is more effective than the Traditional method.

Table:- Z-Scores of Control Group and Experimental Group from five schools:

SL. NO.	Name of the School	Z- Scores
1	Jhawkhalihat High School (HS)	7.571
2	Protapnagar Giridhari High School(HS)	5.8648
3	Gorkhara Vidyamandir High School (HS)	8.3822
4	Laskarpur Rabindra Vidyapith for Girls'(HS)	8.224
5	Mallikpur Girls' High School (HS)	8.558



Figure 6:- Comparison of Z-Scores obtained by Students of class IX from 5 Schools in the achievement test by Bar Graph.

Based on the feedback of Head of the Institution, concerned teachers and students aim to gather comprehensive insights into the state of infrastructures and their impact on Blended Learning for teaching learning process of a Second Language at Secondary Level in West Bengal

Findings at a Glance:**Effectiveness of Blended Learning:**

Across all five schools, students in the experimental group (Blended Learning) consistently outperformed those in the control group (Traditional Learning).

Mean scores for Blended Learning were significantly higher, indicating better student comprehension and retention.

Statistical Significance:

The Z-scores for all five schools were significantly higher than the critical values at both 1% and 5% significance levels, confirming that the differences in performance were not due to chance.

Specific Z-scores were as follows:

Jhawkhalihat High School: 7.571

Protapnagar Giridhari High School: 5.8648

Gorkhara Vidyamandir High School: 8.3822

Laskarpur Rabindra Vidyapith for Girls: 8.224

Mallikpur Girls' High School: 8.558

Impact of Infrastructure and Access:

Schools with better infrastructure and access to technology (e.g., Protapnagar Giridhari High School and Mallikpur Girls' High School) showed higher Z-scores.

In schools with limited access to computers and the internet, Blended Learning was still more effective, though the Z-scores were relatively lower.

Student Engagement:

Students participating in Blended Learning were more engaged, as indicated by their eager participation in online classes and completion of online assessments.

Use of digital tools such as PowerPoint presentations, YouTube videos, and online dictionaries contributed to a richer learning experience.

Affective Factors:

Blended Learning positively influenced motivation, attitude, and self-esteem among students, contributing to better performance.

Recommendations:-

Implementation of Blended Learning:

Educational institutions should adopt Blended Learning to enhance students' academic achievements. This includes blending conventional classroom instruction with online teaching.

Infrastructure Improvement:

Schools should invest in improving technological infrastructure to support Blended Learning. This includes providing computers, reliable internet access, and training for both teachers and students.

Teacher Training:

Professional development programs need to be offered to provide teachers with the skills required for the effective implementation of Blended Learning.

Access to Digital Resources:

Schools should ensure that Students can access to e-learning materials and resources both at school and at home, as highlighted by various studies. During the COVID-19 pandemic, online learning became a crucial method for continuing education, with students using the internet daily to access learning resources, conduct research, and complete assignments from home (Imsa-ard, 2020; Bond et al., 2021) (Frontiers). Additionally, the flexibility of online learning allows students to access materials asynchronously, which enables them to study at any time and place, fostering a self-paced learning environment (Adedoyin & Soykan, 2020; Gautam, 2020) (Frontiers).

Further Research:

Continual research on the long period of time impacts of Blended Learning on different subjects and grade levels is recommended to fully understand its benefits and limitations.

Conclusion:-

This study demonstrates that Blended Learning is significantly more effective than conventional teaching methods for teaching a second language at the secondary level in West Bengal. The findings consistently show that students in the experimental group (Blended Learning) performed better than those in the control group (Traditional Learning) across various schools, indicating a substantial improvement in learning outcomes. The statistical analysis revealed that the Z-scores for all five schools were significantly higher than the critical values at both 1% and 5% significance levels, confirming the effectiveness of Blended Learning. The data suggest that BLS not only enhances

comprehension and retention but also positively impacts students' motivation, attitude, and self-esteem. The study highlights the importance of technological infrastructure and access to digital resources in maximizing the benefits of Blended Learning. Schools with better technological facilities and internet access reported higher performance improvements. However, even in schools with limited resources, Blended Learning still showed better outcomes compared to traditional methods. Students' engagement was notably higher in the Blended Learning environment, as evidenced by their enthusiastic participation in online classes and assessments. The use of digital tools, such as PowerPoint presentations, YouTube videos, and online dictionaries, enriched the learning experience and made educational content more accessible and engaging.

In conclusion, Blended Learning offers a promising approach to improving secondary education outcomes in West Bengal. By integrating online and traditional teaching methods, educational institutions can provide a more flexible, interactive, and effective learning environment. The positive results of this study provide a strong foundation for future research and implementation of Blended Learning at secondary level education.

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