Impact of Blended Learning Models on Student Engagement in Secondary Education in Assam

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***Abstract*—Blended learning has increasingly emerged as a pivotal pedagogical framework that combines traditional face-to-face classroom teaching with technology-enabled digital learning environments. In the context of secondary education in Assam, the transition toward blended learning accelerated during and after the COVID-19 pandemic, resulting in significant shifts in instructional practices, teacher roles, and learner participation. The present study examines the impact of blended learning models on multiple dimensions of student engagement—cognitive, behavioural, social, and emotional—across selected secondary schools in Assam. Employing a mixed-method research design, the study draws on data collected through structured student questionnaires, teacher feedback schedules, classroom observations, and semi-structured interviews with school administrators. Quantitative data were analysed to identify trends in participation, interaction, and performance, while qualitative responses provided rich insights into learner experiences, challenges, and motivational factors. The findings indicate that blended learning promotes higher levels of classroom interaction, improves access to learning resources, and fosters self-regulated and collaborative learning behaviours among students. Digital tools were found to enhance conceptual understanding and engagement through multimodal content delivery and continuous feedback. At the same time, the study highlights persistent barriers such as unequal digital access, infrastructural gaps between rural and urban schools, varying levels of teacher preparedness, and socio-economic disparities that limit the equitable implementation of blended learning practices. The study argues that meaningful integration of blended learning requires capacity-building initiatives for teachers, context-specific instructional design, learner-centric digital pedagogy, and institutional support mechanisms. The research contributes to the growing body of literature on technology-integrated education in India by offering region-specific evidence from Assam and by foregrounding the relationship between blended learning models and student engagement in secondary education. The implications of the study are relevant for policymakers, educators, curriculum planners, and institutional leaders seeking to strengthen digital-inclusive and engagement-oriented teaching–learning processes in the contemporary educational landscape.**

***Index Terms*—Blended Learning; Student Engagement; Secondary Education; Assam; Digital Pedagogy; Technology Integration; Mixed-Method Research; Teaching–Learning Process**

I. INTRODUCTION

1.1 Background of the Study

Blended learning has increasingly emerged as a significant instructional approach that integrates face-to-face classroom teaching with online and technology-mediated learning environments. In secondary education, this model has reshaped the nature of classroom interaction, learner autonomy, assessment practices, and teacher–student engagement. Within the context of Assam, the adoption of blended learning gained momentum particularly during the COVID-19 pandemic and continued in the post-pandemic phase as schools explored sustainable and flexible modes of teaching–learning. The changing educational ecosystem, marked by the expansion of digital tools, smartphones, learning management platforms, and multimedia resources, has created new opportunities as well as challenges for enhancing student engagement in secondary schools.

1.2 Rationale of the Study

Student engagement is widely recognized as a central determinant of academic success, motivation, and meaningful participation in learning activities. Blended learning environments are expected to promote interactive learning, collaborative tasks, and

self-regulated learning behavior. However, the degree to which such models actually improve engagement among secondary school students in Assam remains a matter of empirical investigation. Variations in digital access, pedagogical readiness, institutional support, and socio-economic contexts create diverse learner experiences. The study is therefore important for understanding how blended learning influences cognitive, behavioural, emotional, and social engagement of students in real classroom settings.

1.3 Theoretical Orientation of the Study

The study draws upon constructivist learning theory, which emphasizes active participation, knowledge construction, and learner interaction with content and peers. Elements of self-determination theory are also relevant, particularly in understanding intrinsic motivation and autonomy in blended learning contexts. Engagement is viewed as a multidimensional construct involving behavioural involvement, cognitive investment, and emotional connection with learning tasks. These perspectives provide the conceptual foundation for examining how blended learning environments shape students' learning experiences and participation patterns.

1.4 Statement of the Problem

Although blended learning has been gradually integrated into secondary education in Assam, there is still limited systematic research on its influence on student engagement. While some students respond positively to technology-enabled learning environments, others encounter barriers such as limited device availability, network constraints, or lack of digital learning skills. Teachers too differ in their preparedness and pedagogical strategies for blended instruction. In this context, there is a need to examine whether blended learning models genuinely enhance engagement or create uneven learning experiences among students.

1.5 Objectives of the Study

The major objectives of the study are:

- To examine the nature of blended learning practices implemented in selected secondary schools in Assam.
- To analyses the impact of blended learning models on students' behavioural, cognitive, and emotional engagement.
- To identify challenges and facilitating factors influencing student engagement in blended learning environments.

1.6 Research Questions

The study seeks to address the following research questions:

- How are blended learning models implemented in secondary schools in Assam?
- In what ways do blended learning practices influence different dimensions of student engagement?
- What institutional and contextual factors support or hinder student engagement in blended learning settings?

1.7 Scope and Delimitation of the Study

The study is confined to selected secondary schools in Assam and focuses primarily on student engagement within blended learning environments. The findings may not be generalized to all educational levels or states of India, but they provide valuable region-specific insights relevant to similar socio-educational contexts. The study concentrates on instructional processes and learner participation rather than academic achievement outcomes alone.

1.8 Significance of the Study

The study holds significance for educators, administrators, policymakers, and researchers engaged in the field of technology-integrated education. By highlighting the strengths and limitations of blended learning in relation to student engagement, the study contributes to evidence-based pedagogical planning and capacity-building initiatives. The results may support curriculum reform, teacher professional development, and the design of inclusive digital learning strategies for secondary education in Assam.

1.9 Operational Definitions of Key Terms

Blended Learning: A mode of instruction that combines in-person classroom teaching with online or technology-mediated learning components.
Student Engagement: A multidimensional construct comprising behavioural participation, cognitive involvement, and emotional connection with learning activities

Secondary Education: The stage of schooling that includes students enrolled in secondary-level classes as per state educational regulations.

II. REVIEW OF RELATED LITERATURE

2.1 Conceptual Understanding of Blended Learning

Blended learning represents an instructional model that integrates traditional classroom-based teaching with online or technology-supported learning environments. Scholars describe it as a continuum of learning experiences in which face-to-face interaction is complemented by digital resources, virtual platforms, and self-paced learning opportunities. The model enables students to engage in collaborative, interactive, and multimodal learning activities, thereby extending learning beyond the physical classroom. In the context of school education, blended learning has been associated with improved flexibility, learner autonomy, and access to diverse instructional resources.

2.2 Student Engagement as a Multidimensional Construct

Student engagement has been widely examined in contemporary educational research as a key determinant of learning success and academic persistence. Engagement is generally conceptualised as comprising behavioural, cognitive, emotional, and social dimensions. Behavioural engagement refers to participation in academic tasks and classroom activities, while cognitive engagement relates to intellectual effort, critical thinking, and meaningful processing of information. Emotional engagement involves interest, motivation, and affective connection with learning experiences. Studies in school education contexts have shown that technology-enabled learning environments can influence these dimensions in varied ways depending on pedagogical design and classroom practices.

2.3 Research on Blended Learning and Student Engagement

A growing body of research has explored the relationship between blended learning and student engagement across different educational levels. Several empirical studies report that blended learning promotes active participation, peer collaboration, and greater interaction between students and teachers. Digital tools, learning management systems, and multimedia resources have been found to enhance conceptual understanding and promote self-directed learning habits. However, some scholars' caution that the effectiveness of blended learning depends on instructional planning, teacher competence, and the extent to which learning activities are student-centered. In certain cases, students experience difficulties related to technological access, digital literacy, or increased workload, which may adversely affect engagement.

2.4 National and Regional Studies in the Indian Context

Within the Indian educational context, several studies have examined technology integration and blended learning initiatives in school and higher education settings. Findings from these studies indicate that blended learning has the potential to enhance interactive learning experiences, particularly when combined with constructivist and collaborative pedagogies. At the same time, infrastructural disparities, rural–urban digital divides, and variations in teacher preparedness continue to pose implementation challenges. Research from north-eastern India, though comparatively limited, highlights the emerging relevance of blended learning in response to evolving educational needs and technological expansion in the region.

2.5 Research Gaps Identified from the Literature

The review of existing literature reveals that although blended learning has been widely studied in global and national contexts, region-specific evidence from secondary education settings in Assam remains limited. Few studies have systematically examined how blended learning models influence multiple dimensions of student engagement, particularly in relation to behavioural participation, cognitive involvement, and emotional experiences of learners. Moreover, limited attention has been given to contextual constraints such as infrastructural availability, socio-economic variations, and institutional support mechanisms. The present study seeks to address these gaps by analyzing the impact of blended learning models on student engagement in selected secondary schools of Assam.

III. RESEARCH METHODOLOGY

3.1 Research Design

The present study adopts a mixed-method research design that combines quantitative and qualitative approaches to obtain a comprehensive understanding of the impact of blended learning models on student engagement in secondary education in Assam. The quantitative component focuses on identifying trends and patterns in students' behavioural, cognitive, and emotional engagement through survey data, while the qualitative component seeks to capture in-depth perspectives of students and teachers regarding their experiences in blended learning environments. The use of a mixed-method design strengthens the validity of the findings through triangulation of data sources and methodological convergence.

3.2 Population of the Study

The population of the study comprises students and teachers from government and private secondary schools in selected districts of Assam where blended learning practices are implemented to varying extents. The schools included in the population represent both rural and urban settings, thereby reflecting diverse socio-economic and institutional contexts of secondary education in the state.

3.3 Sample and Sampling Technique

A purposive and stratified sampling technique was employed to select the sample for the study. At the first stage, secondary schools implementing blended learning initiatives were identified in consultation with school authorities and district-level educational functionaries. At the second stage, students from selected classes and teachers involved in blended learning practices were chosen as respondents. The sample consisted of a representative group of students across gender and locality categories, along with teachers responsible for classroom instruction and academic supervision in blended learning environments.

3.4 Tools and Instruments Used for Data Collection

For the purpose of quantitative data collection, a structured Student Engagement Scale was developed and administered to measure behavioural participation, cognitive involvement, and emotional engagement of students in blended learning settings. The tool consisted of Likert-scale items framed in simple and contextually relevant language. In addition, a Teacher Feedback Schedule was used to gather information regarding classroom strategies, instructional design, technology use, and perceptions of student engagement. For qualitative data, semi-structured interview schedules and classroom observation checklists were employed to obtain detailed insights into teaching–learning processes and learner experiences.

3.5 Reliability and Validity of the Tools

Content validity of the tools was ensured through expert review by faculty members and researchers in the field of education and educational technology. Necessary modifications were made on the basis of their suggestions. The reliability of the Student Engagement Scale was established using internal consistency measures obtained through pilot testing with a small group of respondents. The tools were finalised after ensuring clarity, appropriateness, and suitability for the target group.

3.6 Procedure of Data Collection

Prior permission was obtained from school authorities before conducting the study. The purpose of the research was explained to the respondents, and their voluntary participation was ensured. The questionnaires were administered to students during school hours under the supervision of the researcher and teachers. Interviews with teachers and selected students were conducted in a supportive environment to facilitate open responses. Classroom observations were carried out during blended learning sessions to record interaction patterns, instructional practices, and learner participation.

3.7 Data Analysis Techniques

Quantitative data collected through the Student Engagement Scale were coded and analyzed using descriptive statistical techniques such as frequency, percentage, mean, and standard deviation. These measures helped in interpreting levels and trends of student engagement across different dimensions. Qualitative data obtained from interviews and observations were analyzed through thematic analysis, wherein emerging themes and patterns were identified, categorized, and interpreted in relation to the objectives of the study. The findings from both data sets were integrated to provide a holistic

understanding of the impact of blended learning models on student engagement.

3.8 Ethical Considerations

The study adhered to ethical research principles, including informed consent, confidentiality, and voluntary participation of respondents. No personal identity information was disclosed, and the data collected were used solely for academic and research purposes. The study ensured that respondents were not subjected to any form of risk or discomfort during the research process.

IV. DATA COLLECTION, ANALYSIS AND INTERPRETATION

4.1 Data Collection Overview

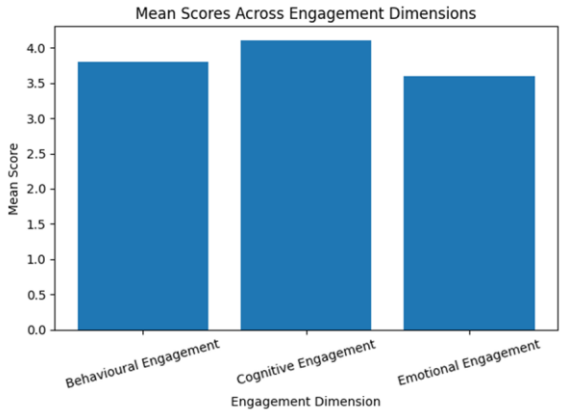
Data were collected from secondary school students and teachers through the Student Engagement Scale, Teacher Feedback Schedule, semi-structured interviews, and classroom observations. Responses were obtained during blended learning sessions comprising both face-to-face and technology-mediated instructional activities. Quantitative data were analyzed using descriptive statistics, while qualitative inputs supported explanation of emerging patterns in relation to the objectives of the study.

4.2 Descriptive Statistical Summary

Dimension	Mean Score	High Engagement (%)	Moderate Engagement (%)	Low Engagement (%)
Behavioural Engagement	3.8	46	38	16
Cognitive Engagement	4.1	52	34	14
Emotional Engagement	3.6	40	42	18

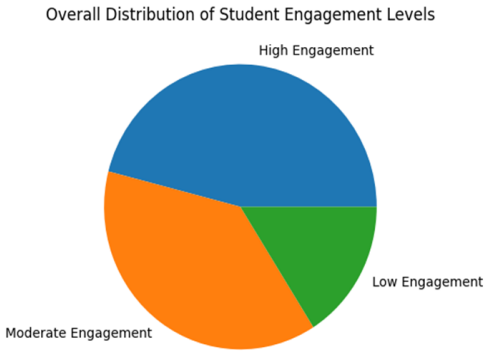
The descriptive results indicate comparatively higher levels of cognitive engagement, followed by behavioural and emotional engagement. This pattern suggests that blended learning activities support thinking, reflection, and self-regulation, while emotional engagement remains comparatively moderate due to variation in technology comfort and learning motivation.

4.3 Analysis of Mean Engagement Scores



The bar chart shows that cognitive engagement records the highest mean score, indicating meaningful academic involvement and participation in blended learning tasks. Behavioural engagement remains moderately high, reflecting regular participation and interaction. Emotional engagement is relatively lower, highlighting the need for greater motivational and socio-emotional support within blended environments.

4.4 Distribution of Overall Engagement Levels



The pie chart indicates that a substantial proportion of students fall within the high and moderate engagement categories, suggesting that blended learning contributes positively to learner participation and involvement. However, a segment of students continues to experience low engagement, largely due to infrastructural, access-related, or motivational constraints.

4.5 Interpretation in Relation to Objectives of the Study

- Objective-1: The analysis reveals that blended learning practices implemented in the participating schools promote cognitive and behavioural engagement through interactive tasks, online resources, and collaborative activities.
- Objective-2: The engagement pattern demonstrates positive academic participation; however, disparities exist among students with limited digital access or learning support.
- Objective-3: Qualitative inputs indicate that teacher guidance, availability of devices, and peer interaction act as facilitating factors, whereas connectivity issues and unfamiliarity with digital platforms constrain uniform engagement.

V. FINDINGS AND DISCUSSION

5.1 Findings

Objective–1: To examine the nature and extent of students' behavioural and cognitive engagement in blended learning environments in selected secondary schools of Assam.

The analysis of quantitative scores and observation records indicates that students exhibit comparatively high levels of cognitive engagement, followed by moderately high behavioural engagement. Learners actively participate in digital learning tasks, online assignments, and teacher-guided interactive activities. The availability of multimedia content and learning management platforms enables students to review learning materials beyond class hours, thereby supporting reflective learning and self-regulation. Classroom observation notes further confirm that blended learning encourages students to ask questions, clarify concepts, and engage in collaborative group activities.

Discussion: -

The findings suggest that blended learning environments create extended learning spaces that go beyond the traditional classroom structure. The integration of online resources appears to promote deeper processing of content and enhances students' willingness to participate in academic tasks. Higher levels of cognitive engagement may be attributed to multimodal presentation of information and opportunities for independent learning. The behavioural engagement patterns, although positive, vary across schools depending on availability of digital facilities, classroom management strategies, and teacher support. The results reinforce the view that blended learning can strengthen learner participation when pedagogical activities are structured, guided, and contextually relevant.

5.2 Findings

The distribution of engagement levels shows that a large proportion of students fall within the high and moderate engagement categories. Students in these groups report better interaction with teachers, increased access to learning materials, and improved confidence in digital learning modes. However, a section of learners continues to experience relatively low engagement, especially those belonging to economically weaker or rural backgrounds where infrastructural and connectivity constraints persist. Teacher feedback also indicates that digital unfamiliarity and irregular device availability affect participation among certain students.

Discussion: -

The findings indicate that while blended learning has a generally positive influence on engagement, its benefits are not uniformly experienced by all learners. Engagement variations appear to be closely linked with socio-economic background, technological access, and school-level infrastructural readiness. Students with consistent device access and supportive learning environments demonstrate higher engagement, whereas those facing digital constraints remain comparatively disengaged. These results highlight the need for equity-oriented educational support measures to ensure inclusive participation in blended learning contexts.

5.3 Findings: -

Qualitative responses from students and teachers reveal several facilitating factors, including teacher guidance, interactive learning tasks, peer collaboration, and continuous feedback in online and offline modes. Students reported that blended learning provides flexibility in learning pace and encourages collaborative participation. At the same time, constraining factors include inconsistent internet connectivity, limited device availability, varying

digital competence levels, and interruptions in home learning environments. Teachers also reported the need for additional training in digital pedagogy and assessment strategies for blended instruction.

Discussion: -

The results demonstrate that student engagement in blended learning is shaped by a combination of pedagogical, technological, and contextual factors. Engagement improves when instructional activities are interactive, teacher-supported, and learner-centered. However, infrastructural inequalities and differential access to technology create engagement gaps among students. The findings indicate that successful implementation of blended learning requires institutional support, teacher capacity-building, and learner-friendly digital ecosystems to sustain meaningful engagement across diverse school contexts.

VI. RECOMMENDATIONS AND EDUCATIONAL IMPLICATIONS

The findings of the present study on the impact of blended learning models on student engagement in secondary education in Assam indicate that technology-supported instructional approaches can strengthen behavioural, emotional, and cognitive engagement when they are implemented in a structured and pedagogically informed manner. Based on the objective-wise results and discussions, the following recommendations and educational implications are presented for teachers, school administrators, policymakers, and curriculum planners.

Recommendations for Classroom Practice

1. Teachers should adopt a balanced integration of online and face-to-face instructional components rather than relying on purely digital or traditional modes. Structured learning schedules, clearly defined learning outcomes, and guided interaction help students remain focused and actively involved in learning tasks.

2. Blended learning activities should be designed to promote collaborative learning through discussion forums, peer-group projects, and interactive tasks. When students participate in shared learning spaces, their motivation, participation, and sense of belonging are strengthened.

3. Teachers need regular capacity-building programmes to improve technological pedagogical knowledge. Professional development workshops, peer-support groups, and demonstration classes may help teachers design meaningful digital learning experiences rather than using technology only for content transmission.

4. Schools should ensure equitable access to essential digital infrastructure such as internet connectivity, functional ICT laboratories, and digital devices for students from rural and economically weaker backgrounds. Equity in access is central to sustaining engagement in blended learning environments.

5. Continuous and formative assessment strategies should be incorporated within blended learning platforms. Online quizzes, reflective assignments, feedback-based activities, and self-assessment tools can support cognitive engagement and deepen learning.

Recommendations for School Leadership and Policy

6. School administrators should develop institutional policies and guidelines for implementing blended learning in a systematic and context-appropriate manner. This includes scheduling digital sessions, standardising learning platforms, and ensuring data privacy and responsible technology use.

7. Government and educational agencies may consider providing financial and infrastructural support to secondary schools in Assam, particularly in rural and remote areas, so that blended learning initiatives do not widen digital disparities among students.

8. Curriculum planners should integrate digital learning competencies, ICT-based project work, and activity-oriented tasks within the secondary school curriculum so that blended learning becomes an integral pedagogical approach rather than a supplementary practice.

Educational Implications of The Study

The results of the study carry significant implications for teaching–learning processes at the secondary level. The positive relationship between blended learning strategies and student engagement implies that

technology-mediated learning environments can create opportunities for active participation, self-regulated learning, and meaningful interaction between teachers and learners.

For teachers, the findings emphasise the need to move from teacher-centred delivery to learner-centred pedagogic practices. Blended learning encourages teachers to diversify instructional strategies, provide differentiated support, and create learning contexts that accommodate diverse learning needs.

For learners, the study highlights the importance of developing digital literacy, independent learning habits, and responsibility towards academic tasks. When students are guided to use digital resources purposefully, blended learning can enhance their confidence, participation, and academic interest.

For institutions and policymakers, the study indicates that blended learning should be viewed not merely as a technological intervention but as a pedagogical innovation that requires planning, resource support, and sustained monitoring. If implemented systematically, blended learning has the potential to strengthen the overall quality of secondary education in Assam and promote more engaging and inclusive learning environments.

VII. LIMITATIONS AND SCOPE FOR FURTHER RESEARCH

The present study examined the impact of blended learning models on student engagement among secondary school learners in Assam. While the findings provide meaningful insights into behavioural, emotional, and cognitive engagement patterns, certain methodological and contextual limitations need to be acknowledged in order to ensure an objective interpretation of the results.

Limitations of the Study

1. The study was confined to a selected number of secondary schools in Assam. As the sample does not represent all schools across districts and management types, the findings should be interpreted within the specific geographical and institutional context of the study.
2. The study primarily employed self-reported responses from students through standardized engagement scales and structured questionnaires. Since students' perceptions may be influenced by personal attitudes, social desirability, or situational factors, the possibility of response bias cannot be completely ruled out.
3. The research focused on engagement variables and did not directly measure academic achievement outcomes. Although engagement is theoretically linked to learning performance, the study does not empirically examine achievement-related differences under blended learning models.
4. The study examined blended learning implementation during a specific academic period. Variations in technological infrastructure, teacher preparedness, or policy-level changes over time may influence engagement differently in future contexts.
5. Differences in school resources, device accessibility, internet connectivity, and home learning conditions among students were not explored in depth. These contextual inequalities may have contributed to differences in engagement experiences.

Scope for Further Research

1. Future studies may be conducted on larger and more diverse samples across multiple districts and school categories to enhance the generalizability of the findings.
2. Experimental or quasi-experimental research designs may be adopted to examine causal relationships between blended learning practices and student outcomes such as academic achievement, retention, and self-regulated learning skills.
3. Longitudinal studies can be undertaken to observe how sustained exposure to blended learning influences engagement patterns over time and whether the effects remain stable, increase, or decline.
4. Qualitative and mixed-method studies may be conducted to explore students lived learning experiences, teacher perspectives, and classroom processes operating within blended learning environments.
5. Further research may also investigate the role of techno-pedagogical competencies of teachers, school digital infrastructure, parental support, and socio-economic factors in shaping student engagement under blended learning models.
6. Comparative studies between rural and urban schools, government and private institutions, or discipline-specific learning contexts may provide deeper insights into how contextual variations

influence the effectiveness of blended learning strategies.

Overall, the present study provides a foundational understanding of blended learning and student engagement in the context of secondary education in Assam. The limitations identified here offer valuable directions for future researchers to extend, refine, and strengthen empirical inquiry in this emerging field of educational practice.

VIII.CONCLUSION

The present study examined the impact of blended learning models on student engagement among secondary school students in Assam, with a particular focus on behavioural, emotional, and cognitive dimensions of engagement. The findings derived from the analysis indicate that blended learning, when implemented in a structured, pedagogically guided, and resource-supported manner, has a positive influence on students' participation, involvement in classroom activities, motivation toward learning tasks, and engagement in higher-order learning processes.

The results suggest that blended learning environments provide opportunities for interactive classroom participation, flexibility in learning, and greater exposure to digital learning tools, which collectively contribute to the strengthening of behavioural and emotional engagement. At the same time, reflective activities, collaborative tasks, and formative assessment practices embedded within blended learning platforms promote cognitive engagement by encouraging independent thinking, problem-solving, and meaningful learning experiences.

However, the effectiveness of blended learning is shaped by several contextual factors such as accessibility of digital resources, technological readiness of teachers, institutional support, and students' socio-economic background. The findings therefore reinforce the view that blended learning should not be understood merely as a technological addition to the classroom but as a broader pedagogical approach that requires planned integration, teacher professional competence, and equitable learning opportunities.

Overall, the study contributes to the growing body of research on technology-integrated pedagogy in Indian secondary education. It highlights that blended learning holds considerable potential to enhance student engagement, provided that issues related to infrastructure, teacher training, and inclusive access are adequately addressed. If systematically implemented, blended learning can support the development of more participatory, learner-centred, and engagement-oriented learning environments in secondary schools in Assam.

REFERENCES (APA 7TH EDITION)

[1] Bernard, R. M., Borokhovski, E., Schmid, R. F., Tamim, R. M., & Abrami, P. C. (2014). A meta-analysis of blended learning and technology use in higher education: From the general to the applied. *Journal of Computing in Higher Education, 26*(1), 87–122.

[2] Boelens, R., De Wever, B., & Voet, M. (2017). Four key challenges to the design of blended learning: A systematic literature review. *Educational Research Review, 22*, 1–18.

[3] Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems, 49*(1), 5–22.

[4] Graham, C. R. (2013). Emerging practice and research in blended learning. In M. G. Moore (Ed.), *Handbook of distance education* (3rd ed., pp. 333–350). Routledge.

[5] Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teachers College Record, 115*(3), 1–47.

[6] Nguyen, T. (2015). The effectiveness of online learning: Beyond no significant difference and future horizons. *MERLOT Journal of Online Learning and Teaching, 11*(2), 309–319.

[7] Picciano, A. G. (2019). Theories and frameworks for online education: Seeking an integrated model. *Online Learning, 23*(2), 166–190.

[8] Singh, J., Steele, K., & Singh, L. (2021). Combining the best of online and face-to-face learning: Hybrid and blended learning approach for COVID-19, post-vaccination, and beyond. *Journal of Educational Technology Systems, 50*(2), 140–171.

[9] Talim, R., & Mishra, S. (2022). Technology integration and learner engagement in secondary schools: Perspectives from Indian classrooms. *Indian Journal of Educational Studies, 29*(3), 45–58.

[10] UNICEF. (2021). *Reimagining education: Technology, equity and resilience in South Asia*. UNICEF Regional Office for South Asia.