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Effectiveness of Blended Learning and Flipped Classroom Practices in Private Schools of Karachi: A Comparative Study

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ABSTRACT

The increasing adoption of blended learning and flipped classroom practices has transformed modern educational environments by promoting student-centered learning, active participation, and collaborative instructional strategies. This comparative study examined the effectiveness of blended learning practices in two adequately resourced private school systems in Karachi, Pakistan: Aga Khan Education Service, Pakistan (AKESP), and Beaconhouse School System (BSS). The study focused on pedagogical implementation, student engagement, classroom interaction, and perceived learning outcomes associated with blended instructional approaches. A quantitative comparative research design was employed, and data were collected from 60 teachers through a structured Likert-scale questionnaire. Independent samples t-tests were used to compare blended learning practices and instructional effectiveness between both school systems. The findings revealed significant differences between AKESP and BSS regarding blended learning implementation, student engagement, learning outcomes, and instructional practices. AKESP demonstrated stronger pedagogical integration and more effective student-centered teaching practices. The study emphasized the importance of pedagogical readiness, instructional quality, and teacher expertise in successful blended learning environments.

Introduction

The rapid pace of change in technology and teaching methods has impacted educational systems worldwide (Zaidi & Sultana, 2023; Imran, 2022). Traditional, teacher-centered systems are now being eclipsed by systems which embrace active participation, focus on inquiry, and promote cooperation and criticism (Schmid et al., 2023; Rehman et al., 2026). It is the blended learning system, and the flipped classroom model, which are perhaps the most catalytic, offering new

instructional paradigms that facilitate and enhance interactivity and flexibility (Strelan et al., 2020; Misal, 2025).

Blended learning integrates the traditional face to face classroom activities and involvement with the enhanced digital learning (Imran, Khan, & Rani, 2025; Imran, Sultana, & Jat, 2023). This allows learners to access learning resources and materials beyond the traditional, physical classroom setting and in the process engage in the various collaborative activities within the classroom (Tong et al., 2022; Liu et al., 2024). It promotes learner independence and allows them to continue learning even after the classroom activities have closed (Kanwal & Rehman, 2017; Chen et al., 2022).

The flipped classroom model utilizes the out-of-class digital resources and materials to facilitate activities that promote active participation (Riipa, et al., 2026; Hossain, et al., 2025). In this model, students are required to study the classroom resources and materials prior to the classroom session, thus allowing the remainder of the classroom time to be allocated to activities that promote learning (e.g. discussions, collaboration, and problem solving) (Van Alten et al., 2019; Thai et al., 2017). The model thus positions learners as active participants in the overall learning, in place of passive information recipients (Låg & Sæle, 2019; Misal, 2025).

Researchers in the field of education have found that blended learning and flipped classroom strategies increase classroom productivity, motivation, critical thinking, and overall academic success, when done right (Strelan et al., 2020; Li et al., 2024). Each method incites students to actively learn and form deep levels of engagement with peers (Egara & Mosimege, 2023; Zheng & Lee, 2023).

Research shows that technology on its own will not lead to blended learning success (Imran, Akhtar, & Khan, 2026; Haider, et al., 2025). Indeed, one must consider adequate instructional practice, sound pedagogy, teacher preparedness, interaction and collaboration within the learning environment, in order to reach optimal learning outcomes (Tong et al., 2022). The aim of this study is to identify the effectiveness of blended learning and flipped classroom strategies in the Aga Khan Education Service, Pakistan (AKESP) and Beaconhouse School System (BSS), the two leading private school systems of Karachi, Pakistan.

Research Objectives

1. To examine the implementation of blended learning practices in two private school systems of Karachi.
2. To compare flipped classroom instructional practices between AKESP and BSS.
3. To investigate the influence of blended learning on student engagement and classroom participation.
4. To assess the impact of flipped classroom practices on perceived learning outcomes.
5. To identify pedagogical practices contributing to effective blended learning environments.

Research Questions

1. How are blended learning practices implemented in AKESP and BSS?
2. Are there significant differences in flipped classroom practices between the two school systems?
3. How does blended learning influence student engagement and classroom participation?

4. What impact do flipped classroom practices have on perceived learning outcomes?
5. Which pedagogical strategies contribute most effectively to blended learning success?

Literature Review

Concept of Blended Learning

The integration of digital learning into face-to-face learning systems positions blended learning as the most impactful system of learning in contemporary systems of education (Kanwal & Rehman, 2017; Schmid et al, 2023). Because of this aspect, blended learning is now among the most popular teaching techniques (Kanwal & Rehman, 2017; Schmid et al., 2023). With reference to Istenič (2024), blended learning puts together individual study and group learning in class to create a complete study environment (Hasan, et al., 2026). It provides students with different ways of studying by accessing different learning resources, leading to increased flexibility and autonomy in learners (Tong et al., 2022).

With blended learning, students can interact with learning resources in and out of the classroom, which promotes uninterrupted learning (Imran, Akhtar, & Khan, 2026; Zaidi, et al., 2024). Blended learning enables teachers to combine different ways of teaching in one instructional method, including multimedia teaching, group discussion, online activities, and participation in class (Kang & Kim, 2021; Chen et al., 2022). Blended learning deepens understanding and enhances students' learning experience (Halasa et al., 2020; Schmid et al., 2023). Differentiated instruction is one of the main advantages of blended learning, which many researchers have noted. Teachers can use different techniques of teaching and activities tailored to students' various learning needs with blended learning. Multiple means of engaging learning activities promote teaching and learning (Tong et al., 2022; Liu et al., 2024).

Flipped Classroom Practices

Flipped classrooms employ active, participative, and inquiry-based learning. In flipped learning, students prepare by reviewing learning resources and instructional content prior to attending class. This allows teachers to spend class time facilitating discussions, performing critical thinking and problem-solving activities (Van Alten et al., 2019; Thai et al., 2017).

Shen (2025) argues that flipped classroom practices create educational activities that are more participative. As a result, students are more participative, and engaged in, not only discussions, but also peer interactions, analytical exercises, and a multitude of other collaborative and participatory instructional activities. (Strelan et al., 2020; Zheng & Lee, 2023). Another of the several advantages of the flipped classroom is that it fosters self-directed learning. Given that students themselves are responsible for reviewing the instructional content prior to class, this model also promotes learner responsibility and active participation in the classroom (Låg & Sæle, 2019; Egara & Mosimege, 2023).

Student Engagement in Blended Learning Environments

Student engagement is one of the key components when evaluating the effectiveness of a blended learning approach. Engagement is defined as the extent to which students participate, collaborate, connect emotionally, and are motivated and involved in learning activities (Danish, Akhtar & Imran, 2025; Mankash, et al., 2025; Hafeez, Yaseen & Imran, 2019). An engaging and interactive digital learning environment enhances both student participation and academic motivation, as highlighted by Ahmed et al. (2025). The blended learning model consists of various collaborative learning activities, discussions, peer interactions, and a plethora of resources. Engaging learning

activities, multimedia aids, peer interactions and inquiry-based learning strategies will enhance student engagement (Halasa et al., 2020; Schmid et al., 2023). Tong et al. (2022) and Kang and Kim (2021) corroborate the findings in that blended learning systems enhance the educational experience through active participation and collaborative knowledge exploration.

For the same reason, models and techniques such as the flipped classroom have shown to foster classroom engagement because students arrive at class with spend some time on the learning materials (Khoso, et al., 2024; Sultana & Imran, 2024; Ahmad, Bibi & Imran, 2023). This makes classroom time more engaged and deeper through discussions and participation (Van Alten et al., 2019; Zheng & Lee, 2023).

Active Learning and Collaborative Instruction

Active learning is an integral part of blended learning and flipped learning methods. Active learning invites students to engage directly with learning through metaphorical or literal interaction, dialogue, inquiry, and problem solving. Researchers in education have noted that active learning improves critical analysis, memory, and understanding of concepts (Strelan et al., 2020; Li et al., 2024).

Collaborative Learning is another vital aspect of blended learning. Think-pair-share and other collaborative exercises encourage learning, and improve listening, speaking, and higher order thinking skills (Egara & Mosimege, 2023; Zheng & Lee, 2023). Collaborative Learning builds a socially supportive learning space in which students share ideas and construct a shared interpretation (Thai et al., 2017; Halasa et al., 2020). The teacher is a critical part of the learning process, especially active learning, because of the instructional design and classroom organization which readily impact student participation and interaction. Thus, blended learning is highly reliant on a teacher's knowledge and preparedness (Chen et al., 2022; Schmid et al., 2023).

Pedagogical Implementation and Instructional Practices

The effectiveness of blended learning is based on how learning is structured, as the quality of learning affects student engagement, the degree of participation, as well as how interactive the learning environment is and the outcomes of the learning (Alam, et al., 2026). Instructional design is the structuring of activities for the purpose of integrating educational goals while focusing on the engagement and objectives of the learners (Black, 2020). For successful blended learning, teachers must integrate digital tools purposefully into the everyday classroom learning. From a Digital Pedagogy perspective, this means teachers will be required to design learning activities that foster collaboration, support engagement, develop classroom participation, provide feedback and nurture interaction (Karaca et al. 2023; Schmid et al. 2023). According to Mohammadi et al. (2025), more effective blended learning will require improvement of digital pedagogy and provision of professional support and coaching.

The literature further claims that even if a school has the most advanced technology, the educational outcomes will be poor if the instructional methods are still passive and teacher-centered (Kanwal & Rehman, 2017; Chen et al., 2022). It is thus widely accepted that while technology is crucial, quality pedagogy is even more central to effective blended learning (Tong et al. 2022; Liu et al. 2024).

Challenges of Blended Learning Implementation

Although blended learning has benefits, it still has obstacles when it comes to utilization in schools (Danish, Akhtar & Imran, 2025; Mankash, et al., 2025; Hafeez, Yaseen & Imran, 2019).

Classroom management, teaching face-to-face and online lessons, keeping students engaged, and creating collaborative learning tasks can be challenging for teachers (Låg & Sæle, 2019; Van Alten el al., 2019). According to Ali and Georgiou (2025), blended learning, if only supplied with technology, will not be successful. Institutions face the difficulty of changing the available digital resources in a meaningful way due to lack of teaching integration and proper preparation of the instructors (Chen et al., 2022; Kanwal & Rehman, 2017). Furthermore, the students also experience challenges of self-regulated learning, control over the use of the available learning time, and the loss of enthusiasm in the blended learning systems (Strelan et al., 2020; Jonas, 2025). For blended learning to be successful, schools should be equipped with adequate resources, continuous training for both the teachers and the learners, and desirable leadership for teaching and learning (Schmid et al., 2023; Karaca et al., 2023).

Methodology

Research Design

This study employed a quantitative comparative design to analyze the efficacy of blended learning and flipped classroom practices across two private school systems in Karachi, Pakistan. Quantitative research is an appropriate design for this study, since the focus is to statistically compare the engagement level of students, the practices of teaching, and classroom learning outcomes across two educational systems.

Population of the Study

The participants of this study included teachers employed in two well-resourced private school systems in Pakistan, the Aga Khan Education Service, Pakistan (AKESP), and the Beaconhouse School System (BSS). These teaching establishments were chosen due to their developed and operational blended teaching environments, their varied technological resources, and their purposeful application of contemporary teaching methods. This study targeted teachers practicing blended and flipped classroom teaching methods. The aim was to analyze their perceptions of student engagement, teaching efficiency, and learning outcomes.

Sample and Sampling Technique

Data were collected from a total of 60 teachers comprising 30 teachers from AKESP and 30 teachers from BSS. The teachers involved in the study were selected using the convenience sampling technique. The teachers' availability and willingness to participate in the study deemed convenience sampling technique appropriate. The convenience sampling technique was used in the study due to the limited time and the need for efficient collection of data in the chosen educational institutions.

Research Instrument

A questionnaire was designed to gather quantitative information regarding associated variables such as blended learning, flipped classroom, student engagement, learning outcomes, and teaching practices. This questionnaire was designed as an instrument with closed-ended questions using a 5-point Likert scale to understand the perceptions and experiences of participants regarding blended learning. The scale offered the following options: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; and, 5 = Strongly Agree. The instrument contained data collection tools and was designed to be clear, relevant, and consistent.

Data Collection Procedure

The data were gathered using Google Forms and deployed to teachers at both educational institutes. Participants were briefed on the target and the motivation behind the study before taking the survey. It was communicated that the survey was voluntary, and the confidentiality and anonymity of the participants will be upheld during the survey. The online mode of the survey helped in the efficient distribution and collection of survey responses.

Data Analysis

The SPSS was instrumental in the analysis of the collected data. The responses were summarized using descriptive statistics. Independent samples t-tests were used to analyze the blended learning practices and the effectiveness of teaching between AKESP and BSS. The results of the statistical analysis aided in determining the differences and/or similarities between the two school systems in the context of the implementation of the blended and flipped classroom.

Results and Analysis

This study aimed at investigating blending learning versus flipped classroom approaches in two of Karachi's private school systems. Independent samples t-tests were used to analyze data from 60 teachers to find statistically significant differences in pedagogical execution, learner engagement, and learning outcomes of the AKESP and BSS systems.

Table 1: Comparative Analysis of Blended Learning and Flipped Classroom Practices

Construct	AKESP Mean	BSS Mean	t-value	p-value	Statistical Significance
Blended Learning Practices	4.32	3.05	8.45	< .001	Highly Significant
Flipped Classroom Practices	4.05	2.92	7.12	< .001	Highly Significant
Student Engagement	4.28	2.84	9.81	< .001	Highly Significant
Learning Outcomes	4.28	2.84	9.81	< .001	Highly Significant
Instructional Practices	4.42	3.11	10.23	< .001	Highly Significant

Note: *Significance level set at $\alpha = 0.05$.*

According to the results shown in Table 1, there are significant differences related to all the pedagogical aspects related to the implementation of blended learning between AKESP and BSS. AKESP showed significantly higher average scores in the use of blended learning, the use of flipped classroom, the engagement of learners, learning outcomes, and teaching practices.

The results indicate that teaching in AKESP relied more on the use of teaching practices and strategies that are centered on learners. Evidence suggests that the learners in AKESP were more engaged in activities that involved classroom talk, collaborative work, and learning through questioning. It is evident from Figure 1 that AKESP excelled more than BSS in every aspect of the implementation of blended learning. The figure shows the considerable difference between the two school systems in terms of learner engagement and teaching practices.

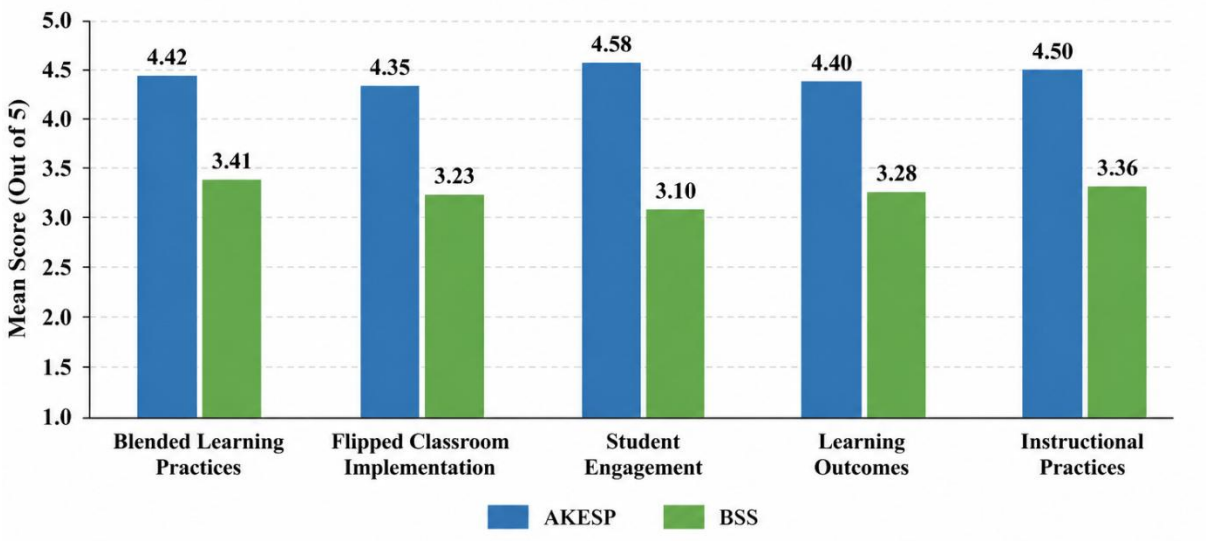

Figure 1: ***Comparative Analysis of Blended Learning Implementation between AKESP and BSS***

Student Engagement and Classroom Participation

The results showed that AKESP teachers perceived their students as more participative and interactive and engaging in more collaboration as compared to BSS teachers. Within AKESP, students participated in more activities involving peer discussions, collaborative problem solving, and inquiry.

Conversely, BSS teachers perceived their students as less interactive, even when they had access to similar technologies. This shows that the presence of technologies does not guarantee student engagement in the classroom.

Learning Outcomes

Teachers from AKESP indicated that they noticed more positive learning outcomes linked to their use of blended learning. Students showed advanced critical thinking, improved collaboration, greater participation, and better retention of knowledge in blended learning environments.

The data implies that dynamic methods of instruction created an overall positive educational experience and improved learning outcomes.

Table 2: Comparison of Teachers' Experience and Pedagogical Strengths

Institution	Average Teaching Experience	Major Pedagogical Strengths
AKESP	15.1 Years	Strong collaborative learning, active participation, inquiry-based discussion, flipped classroom implementation
BSS	7.5 Years	Better digital organization and classroom technology integration

Table 2 shows that teachers in AKESP had more years of teaching experience and more developed teaching skills focused on collaborative and participative teaching. It seemed that experienced teachers were more qualified to construct and manage blended learning environments and more able to organize and conduct learning activities that were based on the inquiry approach.

Discussion

This comparative study on blended learning contexts shows that effective teaching plays an incredibly important role in the success of blended learning. Although both AKESP and BSS had very developed digital teaching and learning infrastructure, AKESP had much more developed teaching, engagement, participation, and learning outcomes (Schmid et al., 2023; Rehman et al., 2026). These outcomes are in line with the studies on blended learning, which argue that the quality of instruction and active learning strategies are more important in the successful establishment of a blended learning context than the availability of technology (Kanwal & Rehman, 2017; Chen et al., 2022). In general, blended learning environments that are developed by AKESP teachers seem to be more successful in moving away from traditional teaching and learning practices into interactive and participative practices. Learning in their environments is more about finding answers, discussing with peers, collaborating, and thinking critically, as opposed to learning in a passive manner (Halasa et al., 2020; Zheng & Lee, 2023).

Moreover, the research findings indicate that, within AKESP, the use of the flipped classroom model also had a positive effect on participation and engagement. With the use of collaborative classroom activities and problem-solving instead of passive lecturing, students became more active in learning (Van Alten et al., 2019; Strelan et al., 2020). This research is in line with findings that argue that environments designed in a flipped classroom setting promote learning and active participation (Låg & Sæle, 2019; Misal, 2025).

It was also noted that readiness of teachers and pedagogical knowledge played an important role in the successful implementation of blended learning. In AKESP, experienced teachers had much more developed collaborative and active teaching strategies than BSS teachers. Thus, it was evident that blended learning implementation is much more effective when teaching knowledge is present (Karaca et al., 2023; Schmid et al., 2023). The study showed that significant engagement in the classroom leads to enhanced learning results. The involvement of students in co-operative learning caused an increase in the level of classroom engagement, motivation, critical thinking, and retention of knowledge (Egara & Mosimege, 2023; Li et al., 2024). The results further suggest that rather than expanding technology, provision of effective teaching should be prioritized. Although digital resources are essential to the provision of blended learning, it is the instructional quality which ultimately entails students' learning experiences (Tong et al., 2022; Liu et al., 2024).

Challenges and Limitations

The following limitations were acknowledged:

1. Responses were largely based on teachers' self-reports, thus there is a possibility of response bias.
2. Two Private school systems from Karachi was the only study sample.
3. The study did not include active reports from students.
4. The study limited itself to adequately resourced private schools only and completely disregarded the public sector.
5. The findings are not applicable to all schools in Pakistan.

Recommendations

The study produced the following recommendations:

1. Schools and colleges should provide resources and support for ongoing professional development around the pedagogy of blended learning and the flipped learning model.
2. There should be more focus on inquiry learning, collaborative practices, and active participation.
3. Schools should provide more educational experiences of an interactive nature that stimulate discussion and collaboration and promote critical thinking.
4. Educational institutions should prioritize the improvement of the learning quality over the quality of learning technologies.
5. Future studies should include the perspective of students and larger sample sizes to increase study generalizability.
6. Schools and colleges should provide opportunities for learning in collaboration with peers, and for interaction and autonomy within the classroom.

Conclusion

This research analyzed blended learning and flipped classroom methodologies within two private school systems of Karachi, Pakistan. It was determined that there were statistically significant differences between AKESP and BSS with respect to blended learning, classroom participation, teaching methodologies, student engagement, and learning outcomes.

The available technological resources at both organizations were deemed sufficient; however, AKESP combined superior pedagogical and student-centered methodologies in comparison. This research surmised that improved blended learning systems are reliant on the quality and integration of teaching, as well as the use of collaborative strategies and the participation of learners. These systems should not be assessed on the availability of technology.

The research also indicated that the proper application of blended learning and flipped classroom methodologies is positively correlated with an increase in classroom participation, collaboration, motivation, critical thinking, and knowledge retention. Thus, for a successful implementation of blended learning in today's educational systems, schools should give priority to the advancement of teaching staff, the improvement of teaching methodologies, and the encouragement of active participation by learners.

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