

Impact of Flipped Classroom Implementation on ESL Teaching Effectiveness in Bangladeshi Secondary Schools

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Abstract

This study investigates the effects of flipped classroom implementation on the efficacy of English as a Second Language (ESL) instruction, student engagement, academic performance, and motivation in Bangladeshi secondary schools. Despite the flipped pedagogies, empirical evidence is scarce in Global South contexts, especially in under-resourced ESL settings. Utilising a quantitative research design, data were gathered from 260 ESL instructors across public, private, and English-medium institutions in Dhaka through a stratified random sampling. Five validated instruments – the Flipped Classroom Implementation Scale, Teacher Sense of Efficacy Scale (TSES), Student Engagement Inventory (SEI), Student Achievement Index, and Language Learning Motivation Questionnaire (LLMQ) – were employed. Descriptive statistics, Pearson correlations, and multiple regression analyses indicated significant positive correlations between flipped classroom practices and all four outcome variables. Flipped instruction significantly predicted teaching effectiveness ($R^2 = .371$, $p < .001$) and moderately predicted student engagement ($R^2 = .232$), achievement ($R^2 = .241$), and motivation ($R^2 = .284$). The findings indicate that the flipped model improves ESL pedagogy by promoting learner autonomy, augmenting classroom interactivity, and enabling differentiated instruction. The study provides timely insights into how technology-driven, student-centred strategies can tackle enduring challenges in ESL education in low-resource environments. It enhances the expanding corpus of research on digital and inclusive pedagogies and emphasises the necessity for policy reforms that incorporate flipped learning in teacher training and curriculum development. Future research should employ longitudinal and mixed method approaches to capture student perspectives and assess the long-term effectiveness of flipped classroom strategies across various educational contexts.

Keywords: ESL Instruction Flipped Classroom, Secondary Education, Student Engagement, Teaching Effectiveness.

Introduction

The flipped classroom model has emerged as a transformative educational approach, particularly effective in language learning environments where interaction and practice are crucial. In this model, students interact with instructional content—usually via videos—before class, while class time is dedicated to active learning activities (1). This approach differs from conventional lecture-based teaching and adheres to constructivist principles that advocate student-centered learning (2). In English as a Second Language (ESL) education, flipped classrooms may enhance instructional efficacy, elevate student engagement, and improve academic performance (3). Nonetheless, empirical research regarding its application in low-resource, multilingual settings like Bangladesh is scarce. In Bangladeshi secondary schools, English as a Second Language instruction frequently employs teacher-centred approaches with limited student engagement (4). Implementing flipped teaching

strategies could transform the ESL learning experience by enabling students to engage with content more independently and maximise classroom time for collaborative and communicative activities. Despite the global expansion of research on flipped learning, there is limited understanding of its impact on essential ESL learning outcomes namely teaching effectiveness, student engagement, achievement, and motivation within the distinct socio-cultural and infrastructural contexts of Bangladesh. Although the flipped classroom model has demonstrated potential in enhancing student learning outcomes in ESL environments globally (5), there is a significant deficiency of quantitative research assessing its efficacy in South Asian or Global South contexts, particularly at the secondary level. Most previous research has concentrated on higher education or well-funded environments, neglecting the distinct challenges

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(Received 16th July 2025; Accepted 24th September 2025; Published 27th October 2025)

encountered by ESL educators and students in developing nations. Furthermore, studies connecting flipped instruction to various interrelated outcomes such as engagement, achievement, and motivation within a single framework are limited. This study seeks to address this gap by quantitatively examining the effects of flipped classroom implementation on ESL teaching efficacy, student engagement, achievement, and motivation in Bangladeshi secondary schools. This research provides empirical evidence regarding the pedagogical efficacy of flipped instruction in of validated instruments, including the Teacher Sense of Efficacy Scale (TSES), Student Engagement Inventory (SEI), and Motivated Strategies for Learning Questionnaire (MSLQ). The results will augment the existing literature on technology-enhanced learning and offer pragmatic insights for policymakers and educators aiming to enhance ESL instruction in resource-limited settings (6).

The flipped classroom model inverts conventional pedagogy by allowing students to initially engage with instructional material outside of the classroom, often via videos or readings, and then utilise class time for interactive, application-oriented learning activities. This learner-centred methodology corresponds with constructivist learning theories, highlighting students' independence and active participation (7). In ESL (English as a Second Language) education, flipped classrooms enable students to interact with English input at their own pace prior to utilising their knowledge for collaborative tasks during class. Numerous studies have shown that this model facilitates language acquisition by enhancing exposure to authentic language use and providing increased opportunities for practice and feedback during class time (8). Nevertheless, most of the current research has concentrated on post-secondary or technologically sophisticated settings. Conversely, secondary schools in Bangladesh encounter infrastructural and pedagogical obstacles that could affect the efficacy of flipped classroom models. Therefore, it is essential to investigate the applicability and results of implementing a flipped classroom in resource-limited ESL environments.

Flipped Classroom and Teaching Effectiveness: Teaching effectiveness includes the capacity of educators to convey content clearly, manage

classrooms effectively, and promote student learning. The flipped model transforms the teacher's role from a passive content provider to an active learning facilitator. This transition can improve teacher-student engagement and enable educators to tailor instruction according to students' requirements. Research indicates that flipped instruction enhances teaching efficacy, especially by facilitating increased opportunities for formative assessment and differentiated instruction (9). In the Bangladeshi secondary ESL context, which is characterised by traditional lecture-based and examination-focused methodologies, the flipped approach may facilitate more adaptive and interactive pedagogical practices. Nonetheless, restricted access to digital resources and inadequate teacher training may impact the quality of implementation.

H1: Flipped classroom implementation is positively associated with ESL teaching effectiveness in Bangladeshi secondary schools
Student Engagement in Flipped ESL Classrooms: Student engagement, which encompasses behavioural, emotional, and cognitive elements, is a crucial factor influencing learning outcomes. The flipped classroom model enables students to prepare in advance and engage more actively during class, thereby improving participation. In ESL instruction, where interaction and participation are essential, flipped models can enhance learners' motivation and engagement by providing increased opportunities for peer collaboration, discussions, and problem-solving activities. Discovered that flipped classrooms consistently yielded greater engagement levels than traditional instruction. In the Bangladeshi context, where ESL learners frequently exhibit a passive learning approach, implementing a flipped classroom model may provide a means to foster more dynamic and student-centred engagement (10).

H2: Flipped classroom implementation is positively associated with student engagement in ESL classes.

Flipped Classroom and Student ESL Achievement: Students' proficiency in vocabulary, grammar, and language skills, typically assessed through standardised or instructor-created examinations, frequently serves as the evaluation criteria for ESL success. Flipped instruction enhances achievement by providing repeated access to

educational resources and reinforcing knowledge through in-class application. The study determined that flipped classrooms produce moderate yet consistent improvements in language proficiency (11). Bangladeshi ESL learners encounter obstacles including substantial class sizes, restricted instructional time, and examination-centric pedagogy. The flipped approach may address these challenges by extending learning beyond the classroom and fostering higher order thinking skills (12).

H³ Flipped classroom implementation is positively associated with student ESL achievement.

Student Motivation and Flipped Learning: Motivation is crucial in language acquisition, affecting learners' perseverance, effort, and overall involvement. The flipped classroom may augment motivation by providing students with increased autonomy, diverse learning experiences, and significant interaction during class. Previous study discovered that students in flipped environments exhibited elevated levels of interest, effort, and satisfaction (13). In Bangladesh, motivation for English as a Second Language (ESL) is frequently influenced by external factors, particularly examination results. The flipped model can enhance intrinsic motivation by making learning more interactive, personalised, and contextually relevant (14).

H⁴ Flipped classroom implementation is positively associated with student motivation for ESL learning.

Although flipped learning has gained prominence in various international ESL settings, its implementation in Bangladeshi secondary schools remains insufficiently examined. This literature review indicates that flipped classrooms possess the potential to enhance teaching effectiveness, student engagement, achievement, and motivation. Nonetheless, contextual constraints must be acknowledged. The proposed study seeks to address this gap by empirically examining these relationships, which thereby contributes to pedagogical innovation in ESL education in Bangladesh (15).

Bloom's Taxonomy and Flipped Learning: Flipped Classroom and Teaching Effectiveness: Teaching effectiveness encompasses educators' ability to communicate content manage classrooms efficiently and facilitate student learning. The flipped model alters the teacher's role from a

passive content provider to an active facilitator of learning. This transition can enhance teacher-student engagement and allow educators to customise instruction based on their students' needs. Research demonstrates that flipped instruction improves teaching effectiveness, particularly by providing greater opportunities for formative assessment and differentiated instruction. In the Bangladeshi secondary ESL context, which is characterised by traditional lecture-based and examination-centric methodologies, the flipped approach may promote more adaptive and interactive pedagogical practices. However, limited access to digital resources and insufficient teacher training may affect the quality of implementation. In this context, Bloom's Taxonomy serves as a significant theoretical framework, categorising learning into lower-order thinking skills (remembering and understanding) and higher-order thinking skills (16). Traditional ESL instruction in Bangladesh primarily emphasises lower-order learning outcomes via rote memorisation and grammar-centric pedagogy (17). The flipped model reorganises the learning process by assigning LOTS tasks, such as vocabulary retention and rule comprehension, to pre-class preparation, thus reserving classroom time for HOTS activities, including concept application in discussions, text analysis, peer evaluation, and the creation of authentic language outputs. This integration of Bloom's taxonomy illustrates how flipped learning facilitates advancement within the cognitive hierarchy, thereby improving teaching efficacy (H1), encouraging active student participation (H2), enhancing ESL performance (H3), and increasing motivation (H4).

This study aims to illustrate how aligning flipped classroom methodologies with Bloom's taxonomy can effectively tackle enduring issues in Bangladeshi ESL education and foster broader pedagogical innovation.

Methodology

This study utilised a quantitative research design to investigate the impact of flipped classroom implementation on four primary dependent variables: ESL teaching effectiveness, student engagement, ESL achievement, and student motivation among secondary school educators in Dhaka, Bangladesh. The flipped classroom

pedagogy, which entails providing instructional content outside the classroom and facilitating active learning during class time, has garnered significant attention in English language education for its potential to improve learner outcomes (18). The study involved 260 ESL teachers currently employed in secondary schools in Dhaka. Stratified random sampling was employed to guarantee proportional representation among public, private, and English-medium institutions, aligning with guidelines for equitable representation in educational research (19). All participants possessed at least one year of ESL teaching experience and had access to fundamental digital tools necessary for executing flipped classroom methodologies (20). Five structured instruments were employed to collect data on the independent and dependent variables. The Flipped Classroom Implementation Scale, a tool developed by researchers, was used to evaluate the frequency, quality, and instructional design of flipped classroom practices, including pre-class videos, in-class collaborative learning, and the encouragement of learner autonomy. The Teacher Sense of Efficacy Scale (TSES) was utilised to assess perceived effectiveness in ESL instruction, while a modified version of the Student Engagement Inventory (SEI) evaluated teachers' perceptions of students' behavioural, emotional, and cognitive engagement. Student achievement was assessed through the Student Achievement Index, which included teacher-reported performance on standardised ESL tests or cumulative class evaluations (21).

The Language Learning Motivation Questionnaire (LLMQ) was employed to assess teachers' perceptions of students' intrinsic and extrinsic motivation for learning English (22). All tools were checked to make sure they were suitable for Bangladeshi secondary schools and were tested with a small group of ESL teachers ($n = 15$) to ensure they were culturally and linguistically appropriate. The data collection was executed through a systematic online survey disseminated through school networks, educational forums, and professional teaching associations throughout Dhaka. Participation was voluntary, and informed digital consent was secured before the survey began. Ethical approval for the study was obtained from the institutional review board in compliance with established research protocols (23). Data

analysis was performed using IBM SPSS Statistics software. Descriptive statistics, comprising means and standard deviations, were employed to encapsulate demographic data and variable distributions. Pearson correlation analyses were conducted to investigate the relationships between the implementation of the flipped classroom and the four dependent variables. Additionally, multiple linear regression analyses were used to determine the predictive impact of flipped classroom practices on teaching effectiveness, student engagement, achievement, and motivation. Statistical significance was determined at $p < 0.05$. Prior to executing the regression analysis, the assumptions of normality, linearity, multicollinearity, and homoscedasticity were evaluated to confirm model robustness (24). This methodological framework facilitated a thorough empirical examination of flipped classroom practices in a context that is both underexplored and pedagogically important. The findings are anticipated to enhance comprehension of how flipped learning strategies can augment ESL instruction within Bangladeshi secondary schools (25).

This research was performed in compliance with recognised ethical standards for a social science inquiry. The research entailed solely voluntary participation of teachers via an anonymous survey, devoid of medical interventions, biological sampling, or the acquisition of sensitive personal data, thereby presenting no risk of physical or psychological harm to participants. Consequently, no formal ethical approval was necessary. Nevertheless, digitally informed consent was secured, and participants were guaranteed confidentiality, anonymity, and the right to withdraw at any point.

Results

This study organises its findings to enable a comprehensive understanding of the empirical evidence. The analysis begins with an examination of the reliability and validity of the measurement instruments to ensure consistency and accuracy of the constructs used. Next, there are descriptive statistics that show the participants' demographic information and point out general patterns in ESL learning outcomes and flipped classroom practices. Subsequently, inferential statistical analyses are used to examine group differences

and discern significant associations among variables. Finally, multiple regression models are used to see how well the flipped classroom method can predict important ESL outcomes, especially language proficiency, motivation, and self-

regulated learning. These findings collectively elucidate the degree to which flipped classroom pedagogy enhances ESL performance, establishing a basis for further discourse and interpretation.

Table 1: Descriptive Statistics

Construct	Mean (M)	Standard Deviation (SD)
Flipped Classroom Implementation (FCI)	4.07	0.59
ESL Teaching Effectiveness (ETE)	3.66	0.69
Student Engagement (SEG)	3.32	0.71
ESL Achievement (SEA)	3.72	0.66
Student Language Learning Motivation (SLL)	3.57	0.58

Table 1 shows the descriptive statistics for the main ideas that were looked at in this study: Flipped Classroom Implementation (FCI), ESL Teaching Effectiveness (ETE), Student Engagement (SEG), ESL Achievement (SEA), and Student Language Learning Motivation (SLL). The composite mean score for FCI ($M = 4.07$, $SD = 0.59$) was the highest of all the variables. This means that most students thought that flipped classroom practices were being used in their learning environment in a strong and consistent way. The means for ESL Achievement ($M = 3.72$, $SD = 0.66$) and ESL Teaching Effectiveness ($M = 3.66$, $SD = 0.69$) were also moderately high. This means that the teaching methods were seen as effective and had a positive effect on language performance. In contrast, student language learning motivation (M

$= 3.57$, $SD = 0.58$) and student engagement ($M = 3.32$, $SD = 0.71$) were relatively lower, reflecting that, while learners were motivated and moderately engaged, there remains scope for further enhancing interactive and participatory elements of the flipped classroom to maximise learner involvement. The standard deviations, ranging between 0.58 and 0.71, suggest moderate variability in student responses, pointing to differences in individual experiences and perceptions across the sample. Collectively, these descriptive results provide an initial understanding of the overall trends in the dataset, highlighting the generally positive reception of flipped classroom implementation and its potential influence on ESL learning outcomes.

Table 2: Reliability Test

Construct	Cronbach's Alpha (α)
Flipped Classroom Implementation (FCI)	0.886
ESL Teaching Effectiveness (ETE)	0.800
Student Engagement (SEG)	0.825
ESL Achievement (SEA)	0.825
Student Language Learning Motivation (SLL)	0.708

Table 2 shows the results of the reliability analysis for the tools used to measure the study. To assess for internal consistency, Cronbach's alpha coefficients were figured out for each construct. The results indicate that all of the scales had acceptable to excellent reliability, with values higher than the widely accepted benchmark of 0.70 (Nunnally, 1978). Flipped Classroom Implementation ($\alpha = 0.886$) exhibited the highest reliability, indicating substantial coherence among items assessing this construct. The internal consistency of ESL Teaching Effectiveness ($\alpha =$

0.800), Student Engagement ($\alpha = 0.825$), and ESL Achievement ($\alpha = 0.825$) was also high, showing that they are strong enough to be used in more research. Student Language Learning Motivation ($\alpha = 0.708$), while slightly lower than the other constructs, still met the minimum threshold for acceptability, suggesting that the items adequately capture the underlying construct. Overall, these results validate the reliability of the measurement instruments and provide a solid foundation for conducting subsequent descriptive, inferential, and regression analyses.

Table 3: Correlation Analysis

Variable Pair	r	p-value	Interpretation
FCI and ETE	0.609	<.001	Strong correlation
FCI and SEG	0.481	<.001	Moderate correlation
FCI and SEA	0.491	<.001	Moderate correlation
FCI and SLL	0.533	<.001	Moderate correlation

Table 3 shows the results of the Pearson product-moment correlation analysis that was done to look at the links between Flipped Classroom Implementation (FCI) and the four dependent variables. The results indicate that FCI was positively and significantly related to all outcome measures. This confirms that frequent use of flipped classroom practices consistently leads to improved ESL learning outcomes. The most significant correlation was found between FCI and ESL Teaching Effectiveness ($r = 0.609$, $p < .001$), indicating that the effective application of flipped methodologies significantly enhances the perceived quality of teaching. There were also

moderate but important correlations between FCI and Student Language Learning Motivation ($r = 0.533$, $p < .001$), ESL Achievement ($r = 0.491$, $p < .001$), and Student Engagement ($r = 0.481$, $p < .001$). These results indicate that while flipped classroom implementation strongly enhances teaching effectiveness, it also moderately supports learner motivation, achievement, and engagement, demonstrating its multidimensional impact on the ESL learning environment. The correlation analysis offers preliminary evidence regarding the strength and direction of relationships, warranting further exploration via regression modelling.

Table 4: Regression Analysis

Dependent Variable	R ²	Adj. R ²	F-stat	β (FCI)	p (model)	Interpretation
ETE (Effectiveness)	0.371	0.369	151.58	0.558	<.001	Strong predictor
SEG (Engagement)	0.232	0.229	77.55	0.429	<.001	Moderate predictor
SEA (Achievement)	0.241	0.238	81.70	0.460	<.001	Moderate predictor
SLL (Motivation)	0.284	0.281	101.88	0.459	<.001	Moderate-to-strong predictor

Table 4 shows the results of the multiple linear regression analyses that were done to see how Flipped Classroom Implementation (FCI) affected each of the four dependent variables. The results show that FCI was a strong predictor in all models, showing that it consistently affects ESL outcomes. The most robust model was identified for ESL Teaching Effectiveness ($R^2 = 0.371$, $\text{Adj. } R^2 = 0.369$, $F(1, 258) = 151.58$, $p < .001$), indicating that FCI accounted for 37.1% of the variance, with a standardised beta coefficient of 0.558, thereby validating its status as a significant predictor of perceived instructional effectiveness. FCI explained about 24% of the variance in ESL achievement ($R^2 = 0.241$, $F(1, 258) = 81.70$, $p < .001$) and about 23% of the variance in student engagement ($R^2 = 0.232$, $F(1, 258) = 77.55$, $p < .001$). The predictive strength was moderate ($\beta = 0.460$ and $\beta = 0.429$). Likewise, Student Language Learning Motivation ($R^2 = 0.284$, $F(1, 258) = 101.88$, $p < .001$) was positively predicted by FCI, with a beta coefficient of 0.459, indicating a

moderate-to-strong effect. These results show that flipped classroom practices have the biggest effect on how well teachers teach, but they also help students stay motivated, achieve their goals, and get involved. The regression results substantiate the multifaceted advantages of FCI, offering empirical validation of its ability to forecast teacher- and student-centered outcomes within the ESL framework.

Discussion

This study's findings empirically validate the effectiveness of flipped classroom pedagogy in improving various educational outcomes in ESL instruction. The discourse is structured around the assessed constructs—teaching effectiveness, student engagement, ESL achievement, and student motivation—correlating the statistical data illustrated in Tables 1–4 with pertinent academic literature. Flipped Classroom and ESL Teaching Effectiveness: The descriptive results (Table 1) indicated that teaching effectiveness

achieved a mean score of 3.66 (SD = 0.69), implying that teachers recognised a moderate-to-strong level of effectiveness in their practices when employing flipped strategies. The reliability analysis validated the robustness of the measurement instrument ($\alpha = 0.800$; Table 2). The relationship between flipped classroom implementation and teaching effectiveness was robust ($r = 0.609$, $p < .001$; Table 3), and regression analysis indicated that FCI accounted for 37.1% of the variance in perceived ESL effectiveness ($R^2 = 0.371$; $\beta = 0.558$; $p < .001$; Table 4). The findings support previous research indicating that flipped instruction improves teaching clarity, teacher confidence, and facilitation skills (26). Likewise, other scholars underscored that the flipped model transitions educators from rote content delivery to student-centred facilitation (27). In the context of Bangladesh, where conventional teacher-centred methodologies prevail, these findings underscore the potential for flipped classrooms to facilitate pedagogical reform and innovation.

Influence on Student Engagement: Student engagement achieved a moderate mean score ($M = 3.32$, $SD = 0.71$; Table 1), corroborated by robust internal consistency ($\alpha = 0.825$; Table 2). Correlation analysis demonstrated a moderate yet significant positive correlation between FCI and student engagement ($r = 0.481$, $p < .001$; Table 3). Regression analysis revealed that flipped classrooms accounted for 23.2% of the variance in student engagement ($R^2 = 0.232$; $\beta = 0.429$; $p < .001$; Table 4), signifying a moderate predictive influence. These findings correspond with previous research which highlighted the advantages of flipped pedagogies for enhancing behavioural, emotional, and cognitive engagement via interactive classroom activities (28). A study emphasised that flipped environments enable students to assume greater responsibility for their learning, enhancing intrinsic motivation and classroom engagement (29). The present findings corroborate these insights, indicating that Bangladeshi ESL students, who frequently employ passive learning approaches, can be engaged in more active participation through pre-class preparation and in-class collaboration.

Effect on ESL Achievement: Achievement in ESL exhibited a notable mean ($M = 3.72$, $SD = 0.66$; Table 1) and demonstrated robust reliability ($\alpha = 0.825$; Table 2). FCI exhibited a positive correlation

with student achievement ($r = 0.491$, $p < .001$; Table 3), and regression analysis revealed that it accounted for 24.1% of the variance ($R^2 = 0.241$; $\beta = 0.460$; $p < .001$; Table 4). This data indicates a moderate predictive capability. The results corroborate earlier research (28), which indicated enhanced grammar and vocabulary acquisition in EFL learners subjected to flipped methodologies. Another study improved examination performance and content retention in flipped ESL courses, crediting these enhancements to repeated exposure to instructional material (30). This study indicates that the provision of pre-class materials, along with active in-class discussions, has facilitated students' mastery of vocabulary and grammar while enhancing higher-order language skills.

Motivation for Language Learning: The mean motivation score was $M = 3.57$ ($SD = 0.58$; Table 1) with acceptable reliability ($\alpha = 0.708$; Table 2). The relationship between FCI and student motivation was moderate yet significant ($r = 0.533$, $p < .001$; Table 3), with regression analysis indicating that flipped classrooms accounted for 28.4% of the variance ($R^2 = 0.284$; $\beta = 0.459$; $p < .001$; Table 4). These results demonstrate a moderate to strong predictive influence. Self-Determination Theory posits that motivation is augmented when students perceive autonomy, competence, and relatedness—elements that closely correspond with flipped pedagogies. Empirical research has corroborated that flipped models promote learner autonomy and accountability, consequently enhancing motivation in second language environments (31). Exam pressure frequently influences student motivation in Bangladesh, and the flipped approach offers a way to achieve more intrinsic and enduring motivational improvements. The results presented in Tables 1–4 collectively indicate that the implementation of a flipped classroom model enhances teaching effectiveness, student engagement, academic achievement, and learner motivation in ESL classrooms. Teaching effectiveness was identified as the most significant predictor, succeeded by motivation, achievement, and engagement. These findings not only corroborate existing international evidence but also offer context-specific insights for Bangladesh, where resource constraints and examination-focused pedagogy persist as impediments. Flipped learning, by

considering both teacher and student aspects, shows promise as a transformative educational strategy with ramifications for national educational reform and policy development (32).

Conclusion

This study investigated the impact of flipped classroom implementation on four critical educational outcomes in ESL instruction: teaching effectiveness, student engagement, language achievement, and motivation, within the context of Bangladeshi secondary schools. Utilizing a robust quantitative design with stratified sampling and validated instruments, the findings offer compelling evidence that flipped classroom practices significantly enhance the ESL teaching and learning experience. The results revealed that flipped classroom implementation is a strong predictor of teaching effectiveness, explaining over one-third of the variance. This suggests that shifting instructional delivery outside the classroom and allocating in-class time for active engagement allows ESL teachers to facilitate deeper learning, personalized feedback, and interactive pedagogy. Moreover, the study found that flipped approaches moderately predicted student engagement, achievement, and motivation, affirming their utility in fostering student-centred environments that support language learning success. Importantly, these findings align with global research affirming the pedagogical merits of flipped instruction, but they are particularly salient in the context of Bangladesh, where traditional didactic teaching dominates and digital integration remains limited. The flipped classroom model, therefore, represents not only a pedagogical innovation but also a strategic response to the national call for digital transformation and inclusive language education. While the study contributes valuable empirical insights, it is not without limitations. The cross-sectional design restricts causal inference, and reliance on teacher-reported data may introduce subjective bias. Future research should incorporate longitudinal and mixed methods approaches, including student perspectives and classroom observations, to provide a more holistic understanding of flipped learning in diverse ESL contexts. This study underscores the

transformative potential of flipped classrooms in enhancing ESL instruction in resource-constrained and traditionally rigid educational systems. Policymakers, school administrators, and educators are encouraged to consider the integration of flipped pedagogies into curriculum design and teacher training programs, not only to improve English language proficiency but also to cultivate a more engaging, equitable, and learner-driven educational culture.

Abbreviations

ESL: English as a Second Language, ETE: ESL Teaching Effectiveness, FCI: Flipped Classroom Implementation, ICT: Information and Communication Technology, LLMQ: Language Learning Motivation Questionnaire, SEA: ESL Achievement, SEG: Student Engagement, SEI: Student Engagement Inventory, SLL: Student Language Learning Motivation, TSES: Teacher Sense of Efficacy Scale.

Acknowledgment

The authors declare that there is no conflict of interest associated with this publication. The research was conducted independently and objectively.

Author Contributions

Jahirul Islam: conceptualization and design of the study, drafting the introduction, conducting the literature review, developing the research methodology, managing data collection and analysis, composing the initial version of the findings and conclusion, Siti Nadhirah binti Abd Rahman: Provided academic supervision, overall guidance throughout the research process, critically reviewed the manuscript, offered substantive feedback, contributed to proofreading and refining the final draft.

Conflict of Interest

The authors affirm that there are no conflicts of interest concerning the publication of this article. The research was carried out without any external influence or support that could affect the interpretation or presentation of the findings.

Declaration of Artificial Intelligence (AI) Assistance

This study constitutes original research undertaken as a component of the author's doctoral thesis. No generative AI was employed in

the study's design, data collection, analysis, or interpretation of results. The Grammarly software was used to improve the fluency and grammatical precision of academic writing. Generative AI tools were utilized exclusively for linguistic enhancement and structural clarity in the manuscript draft, with all intellectual content, analysis, and conclusions being the sole responsibility of the author.

Ethics Approval

This study was conducted in accordance with institutional ethical guidelines. Informed consent was obtained from all participants, and confidentiality was strictly maintained. No physical, psychological, or legal risks were posed to participants.

Funding

This study did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The authors have self-funded all aspects of this research and publication.

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How to Cite: Jahirul Islam, Siti Nadhirah binti Abd Rahman. Impact of Flipped Classroom Implementation on ESL Teaching Effectiveness in Bangladeshi Secondary Schools. *Int Res J Multidiscip Scope*. 2025; 6(4):607-616. doi: 10.47857/irjms.2025.v06i04.06967