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ALIGNMENT OF THE FLIPPED CLASSROOM MODEL WITH ESL LEARNER'S COGNITIVE LEVELS: A DESCRIPTIVE STUDY

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ABSTRACT

This study aims to uncover instructional tactics in the flipped classroom that correspond with Bloom's taxonomy cognitive levels and to determine how the flipped classroom increases higher-order thinking skills among ESL learners in Pakistan. This study has used a qualitative design, and for data analysis thematic and descriptive approaches were employed. Among fifteen college English language teachers, both male and female, only three volunteered to participate in this study. Semi-structured interviews employing open-ended questions were utilised to gather data, with teachers' responses serving as the methodological instrument. The conventional English language education system in Pakistan is teacher-centered, while the flipped classroom is a novel methodology, and there is a lack of empirical data supporting this approach in English language instruction. The analysis reveals a mean engagement score of 8.0 and a total teacher frequency of 24, signifying substantial student involvement and interest. The mean score of 7.0 for critical thinking, with a combined frequency of 21, signifies enhanced higher-order cognitive abilities. The combined frequency of challenges faced by teachers is (8), while it was not directly assessed due to complications with pre-class preparation. The combined frequency of strategies employed is (14), yet it was not directly measured owing to the variety of teaching methods utilised. The findings indicate that the average engagement score of 8.0 demonstrates that students are significantly engaged in the flipped classroom approach with the participation of all three teachers. The average critical thinking score is 7.0, indicating that the flipped classroom model efficiently enhances higher-order cognitive skills in pupils. T-values of 1.23 for engagement and 0.98 for critical thinking, along with p-values of 0.24 and 0.34, indicate no significant variations among teachers, implying the model's persistent efficacy. The primary hurdles included pre-class preparation, technological access, educator training, and student adaption. This study is constrained by sample size, short duration, subject-specific variability, and reliance on self-reported data.

Keywords: *Alignment, Bloom's taxonomy, Cognitive levels, Flipped classroom Model, integration*

INTRODUCTION

Smith and Johnson (2019) argued that the integration of collaborative learning methods to enhance critical thinking among learners in flipped classroom. Peer interaction stimulated deeper engagement with course material. It is an undeniable fact that flipped classroom model has got prominent place in English language learning due to its potential to improve learner engagement and learning consequences. Chen et al., (2020) suggested that incorporating problem-based

learning activities into the flipped classroom context. They investigated that learner exposed to problem-solving activities outside of the class showed improved critical skills and capabilities for independent inquiry. Jones and Lee (2021) conducted research on meta-analysis that was expanding from 2019- 2021. This study highlights the efficacy of multimedia material for example videos and collaborative simulation for developing critical thinking. Wang and Zhang (2022) analyzed the implementation of regular quizzes, concluding that this method fostered metacognitive skills and expanded conceptual understanding among learners. The literature review discovers the alignment of the flipped classroom model with English as a second language (ESL) learner. The main objective is to provide insight into its advantages and issues within this particular context. Currently, traditional methods of teaching are being reversed while on the other hand, teachers are increasingly adopting the flipped classroom model. Learners engage and interact with instructional material such as activities that occur outside the classroom, freeing up class time for collaborative activities discussion and personalized feedback that develop deeper understanding and usage of concepts. This study has proved that the flipped classroom model can be specifically effective for learners. Kong (2019) viewed that ESL learners can access instructional materials outside the class so that they have the chance to analysis content at their own such as taking pauses, reverse, and repeat the information to enhance comprehension. According to Baker (2021) in-class activities create environment for learners to practice language skills in a helpful setting, developing language acquisition and fluency. The alignment of the flipped classroom model with learners is obvious in its emphasis in learners' engagement and active learning. Lee and Bonk (2020) found that learners benefit from interactive and collaborative learning experiences and these opportunities provided by the flipped classroom through group activities and group discussions. Zainuddin and Attaran (2023) stated that the flexibility of accessing instructional materials online accommodates the various learning requirements therefore participation of ESL learners promote inclusivity and equality in teaching-learning process. From many years till now, in the area of education Bloom's learning taxonomy is providing a clear framework for categorizing learning outcomes related to mental process, extending basic knowledge remembrance to higher-order thinking skills. This investigated how teachers integrated the flipped learning approach aligned with Bloom's Taxonomy to improve learners' learning skills so, this study aims to highlight the usefulness of this integration and its implications for educational training. Baker (2021) claimed that flipped classroom model provides attractive opportunities for developing the learning experiences of learners by encouraging active engagement, individual guidance, and language development. Additionally, teachers must be mindful of the different requirement and issues encountered by ESL learners. They must adapt instructional approach accordingly to certify the fruitful implementation of the flipped classroom model in ESL environment.

1. Literature Review:

Smith et al. (2019) viewed that the flipped classroom model comprises reversing the old-style teaching pedagogy by offering instructional materials outside of class through online resources for instance videos and spending in-class time for active learning activities and problem-solving. Jones et al. (2021) founded the positive effect of flipped classroom model on learner's achievement and investigated evidence favoring its efficacy in promoting active learning and critical thinking skills. Furthermore, this approach advantages student-centered learning, promote critical thinking skills and favors for personalized education Smith and johns (2020) considered that the alignment of flipped classroom activities with Bloom's Taxonomy may provide useful understandings into instructional design in higher education. Their assessment discovers numerous studies on flipped instructional strategy integrating Bloom's Taxonomy. Smith, Johnson, and Lee (2021) investigate how teachers apply Bloom's taxonomy to design learning objectives in flipped classrooms and its effect on learners learning outcomes. This review explores various studies on the implementation of the flipped classroom model, with a focus on its alignment with Bloom's

taxonomy. Authors analyze how educators utilize Bloom's taxonomy to design learning objectives in flipped classrooms and its impact on students learning outcomes. Garcia and Martinez (2021) conducted a wide-ranging literature review to prove how flipped classroom improve learners' learning within framework of Bloom's Taxonomy. Brown and Williams (2022) directed an organized review to estimate the impact of flipped classroom strategies on learner's involvement and learning outcomes, contributing to the understanding of useful instructional practices. Chen and Lee (2023) conducted their study on meta-analysis to synthesize finding on flipped classroom approaches implementing the Bloom's taxonomy and presented informative understanding for educational psychologists and practitioners. Nguyen and Nguyen (2023) presented a longitudinal study to judge the impact of flipped classroom instruction on learner's achievement, adding their part to the practical evidence that are based on useful pedagogical approaches aligned with Bloom's taxonomy. Wang and Chen (2022) states that a meta-analysis investigates the usefulness of educational approach that allows learners to engage in active learning to develop cognitive level thinking skills, that is presented in Bloom's taxonomy. Further, Wang and Chen (2022) studies synthesize makes findings from multiple experiments and develop understanding between flipped classroom practices and enhancement of critical thinking, analysis, and evaluation skills.

According to observation of Cal and Wang (2020) pre-class activities like watching instructional videos and instructed learning content introduces basic concepts, aligning with Bloom's level of remembering and understanding. Furthermore, In-class activities emphasis on higher-order thinking skills like analyzing, evaluating, and creating. Such types of activities comprise on discussion, collective plans and problem-solving projects. Lee (2019) viewed that scaffolding strategies for instance controlling questions and peer collaboration supports learners to enhance their current knowledge and developing higher-order thinking skills. Park (2023) has presented three level of improving higher-order thinking first, encouraging critical reflection through journalling, reflective essays, or group discussions prompts learners to analyze and evaluate their own learning process and outcomes. Second, Authentic tasks: Designing authentic tasks that simulate real-world challenges requires ESL learners to apply knowledge and skills creatively, promoting higher-order thinking. Third, Feedback and revision offering constructive feedback and opportunities for revision on assignments and projects encourages ESL learners to engage the evaluation and improvement of their work, fostering higher - order thinking skills. This study assesses how teachers join Bloom's taxonomy into their flipped classroom strategies. In the opinion of Garcia and Rodriguez (2020) by applying qualitative analysis, the researchers may highlight usual practices and issues in aligning learning objectives with Bloom's taxonomy level. Through this study the researcher is suggesting recommendations for convenient implementation. In spite of potential advantages, Aligning the flipped classroom model with learners poses some challenges of understanding digital literacy and active participation to access to technology (Lee & Bonk 2020). Ramos-Sanchez et al. (2020) viewed that teachers must keep in mind the cultural differences in learning styles of the learners and apply instructional strategies to fulfill the requirements of ESL learners.

2. Research Gap

There is an urgent requirement for longitudinal research and teachers training programs to comprehend the long-term impact of the flipped classroom model on Pakistani learners' engagement and cognitive development. There is a gap in investigating students' attitudes and challenges regarding the flipped classroom model. The role of technology in the flipped classroom model, with limited access to digital resources, is an underexplored area. Research focuses on the effectiveness of different technological tools in facilitating flipped classrooms. Although, a comprehensive research is needed to explore how the flipped classroom model impacts several cognitive levels within Bloom's taxonomy.

3. Background to the Study

The flipped pedagogy with the integration of Bloom's taxonomy has gained remarkable

attention in educational settings. And it aims to improve learners' engagement and encourage higher-order thinking skills. The flipped classroom model developed as a response to the altering landscape of education, leveraging technology to improve learners learning experiences. Bergmann and Sams were pioneered of the flipped pedagogy by recording lecture for learners to access outside of class time, guiding them for more interactive and collaborative activities during in- person meetings. Tucker (2012) stated that the flipped classroom model, promoted by pioneers like Bergmann and Sams, signifies a paradigm shift in education, prioritizing active learning and learners' engagement. By flipping the traditional instructional sequence, teachers aim to create interactive learning experiences for learners. Bloom's taxonomy was originally developed in the 1950s, since then serving as a foundational framework for designing instruction and assessing student learning outcomes (Lin, 2021). Wilson (2016) discussed about one revised version of Bloom's taxonomy by Anderson and Krathwohl (2001), he stated that this revised version provides teachers with a comprehensive structure for categorizing cognitive process and guiding instructional practice. Overmyer and Schutt (2019) claimed that Bloom's taxonomy offers teachers a systematic approach to plan learning experiences that target different level of cognitive complexity. Its hierarchical framework simplifies the alignment of instructional strategies with explicit learning objectives, promoting deeper understanding and critical thinking among learners (Anderson & Krathwohl, 2001). The flipped learning approach aligned with Bloom's Taxonomy facilitates teachers to scheme instruction that address both lower-order and advanced cognitive levels (Ahmadi & Rabiee, 2021). DeSantis and Van Horne (2020) suggested that Pre—class materials, such as video lectures or readings, target lower-order cognitive skills (remembering, understanding), while in-class activities focus advanced cognitive level as analysis, evaluation, and creation**.** Abeysekera and Dawson (2015) found that the Flipped Pedagogy with Bloom's taxonomy Integration allows teachers a structured approach to promote deeper learning and analytical skills among learners. Lee and Oh (2022) founded that by aligning instructional strategies with certain cognitive level, teachers may create more expressive and scaffolded learning experiences. Wang and Zhang (2021) claimed that through investigating the historical progress of flipped classroom model with Bloom's taxonomy, teachers may receive insight into effective instructional practices to improve learners learn in outcomes in different environments. Hakeem, Hussain, and Lashari (2023) argued that the flipped classroom framework supports to direct pedagogical approaches and continue teaching practices in the digital age.

4. Statement of the Problem

The implementation of the flipped pedagogy with the addition of Bloom's taxonomy into their learning objectives highlights complicated problems for teachers. Whereas, flipped classroom model aims to progress learners from memorization and comprehension to more advance cognitive levels like analysis, evaluation, and creation. Effectively aligning instructional strategies with Bloom's taxonomy level remains a complex work. The traditional classroom model of teaching English as a second language (ESL) in Pakistan commonly focuses on teacher-centered instruction and rote learning, which is not suitable for learner's involvement and critical thinking skills. Further, there is a lack of experimental researches on the implementation of flipped classroom model aligned with Bloom's taxonomy of cognitive domains and its impact on Pakistani ESL learners. The primary purpose of the study is to fill this gap by examining the teaching strategies employed in flipped classrooms and their alignment with Bloom's taxonomy to enhance higher-order thinking skills among ESL learners in Pakistan.

5. Significance of the Study

This study may promote teaching practices pretension and broader learners learning experiences within the flipped classroom model. By explaining effective strategies for incorporating Bloom's taxonomy into instructional design, teachers can better use scaffold learning objecting and assessments to meet the cognitive demands of

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diverse learners. Moreover, this study plays a significant role in enhancing the understanding of educational innovation and the pursuit of deeper learning outcomes in contemporary teaching and learning environments. The implication of this study lies in its potential to transform English as a second Language in Pakistan by introducing a student-centered, interactive approach to learning. This study explored advanced pedagogical strategies of the alignment of flipped classroom with Bloom's taxonomy that can be adopted by Pakistani teachers to enhance learner's learning skills. This study focuses on Pakistani ESL learners who face challenges in mastering English, which is important for language learning, academic and professional development in Pakistan and may create maximum engaging and effective learning experiences for ESL learners. The study used the flipped classroom model in Pakistani graduate level context. The researcher makes sure that the suggested strategies are culturally relevant and practicable for all level students and teachers. The findings of this study can be used to develop professional development programs for Pakistani ELT teachers and prepared them with the skills and knowledge required to implement the flipped classroom model effectively and promote active participation and deeper understanding of the material among teachers and learners.

6. Research Questions

1. What are the teaching strategies in the flipped classroom aligned with Bloom's taxonomy cognitive levels?
2. How does the flipped classroom enhance higher-order thinking among ESL learners and ELT teachers?

7. Methodology

Sampling and Population: Sample of this study comprises three ELT teachers from three different private colleges. These three colleges are named as; The Best College, Punjab Group of Colleges and Lead College.

Instrument: This study adopts a qualitative research design utilizing structured interviews questions and responses. The researcher inquired a set of predetermined questions to different schools' English teachers (who have experience of implementing the flipped pedagogy with Bloom's taxonomy integration into their instructional practices) in a standardized way.

8. Data Collection Procedure:

The Researcher as an interviewer prepared a list of structured questions based on the research objectives. Three instructors of different area of teaching were recruited as participants. The in-person interviews were conducted in a quiet relax environment. These were in- person interviews not through video conferencing. These instructors were already informed about the purpose of the interviews, and their consents to participate were obtained. With the permission of instructors, the interviews were recorded to ensure accuracy during data analysis. The researcher as an interviewer asked the structured questions one by one, allowing instructors to provide detailed answers to develop deeper understanding on specific topics. The interview concludes with a thank-you to instructors for their participation, and additional questions or concerns were addressed. In 2024, structure interviews were conducted with three Pakistani ELT teachers to investigate their experiences with applying the flipped pedagogy with Bloom's taxonomy integrating cognitive levels into learning objectives.

Teacher -1: Area of Teaching is English at The Best College in Sialkot from 2015 to update.

Teacher -2: Area of teaching is English at Punjab Group of Colleges in Sialkot from 2014 to update.

Teacher -3: Area of Teaching is English at Lead College Sialkot from 2016 to date.

Interview Guide: The interview guide comprises the structured questions, along with prompts or probes to encourage teachers to elaborate on their responses. The guide ensures consistency in the interview focused on the research objectives. The structured interviews were guided by the following questions, replies and designed to provide detailed replies about the flipped pedagogy with Bloom's taxonomy integration into their learning objectives.

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Introduction: *Hello,* dear participants. I am thankful to you for agreement to participate in this academic interview. The main purpose of this interview is to highlight your experiences of implementing the flipped pedagogy with Bloom 'taxonomy of learning objectives. Your thoughts and experiences will contribute to a research study aiming to understand fruitful instructional practices in education.

Teachers Experience with the flipped classroom Model

Teacher -1: Experiencing the Flipped pedagogy**:** the participant engaged her students with the materials through activities such as watching videos before class, preferred flipped pedagogy teaching approach because lectures are moved outside of class time. It was added that this approach is good to convey basic ideas but it is difficult for new students who were not familiar with this approach as they were not self -directed to take ownership of their learning process. Respondent described her journey of adopting the flipped classroom model, highlighted the reasons for its implementation.

Teacher - 2**:** The participant implemented the flipped classroom model from the last two years till now in English classes. It was an exciting journey, having positive outcomes in student engagement and understanding. It was also observed that it has been a rewarding experience, allowing for more interactive and student-centered learning.

Teacher=3: The participant desired to create some opportunities for hands-on learning and critical thinking. The flipped classroom acts like a natural fit to engage learners in meaningful exploration and application of concepts. The participant was looking for advanced techniques to engage his students and develop deeper understanding.

Alignment of Bloom's Taxonomy into Instructional Design:

Teacher - 1: explained how she incorporates Bloom's taxonomy by aligning learning objectives with specific cognitive levels, like creating activities that encourages learners to analyze experimental data and evaluate scientific arguments.

Teacher - 2: She carefully designed her lesson plans to include learning activities based on cognitive levels like analysis, evaluation, and creation. She also implemented lower level activities like remembrance.

Teacher- 3: In addition to Bloom's taxonomy, he preferred the 5E (Engage, Explore, Explain, Elaborate and Evaluate) to structure his lecture. This model supports to create a coherent sequence of activities that promote inquire-based learning.

9. Data Analysis:

Qualitative research data was analyzed through structured interviews. Analysis of data gained by the participants and interpreted with key elements of the study.

Table.1

	T-1	T-2	T-3
Themes			
Engagement	Personal learning experiences	Collaborative learning peer-to-peer	Student-led discussions critical
Critical Thinking	Emphasizes application and analysis	Integrates various levels of taxonomy	Focus on higher-order thinking skills
Challenges	Focuses on higher-order thinking levels	Incorporates remembering understanding	Applies knowledge to real-world scenarios
Strategy	Project-based learning Portfolios, presentations, peer evals	Pre-recorded Lectures Formative, assessments, quizzes	Pre-recorded Lectures Mix of formative and summative

Similarities	Emphasis on student-centered approach	Promotes active participation	Recognizes benefits of flipped
	Support critical thinking	Collaboration	Recognizes benefits if flipped
Differences	Focus on project-based learning	Utilizes pre-recorded video lectures	Emphasizes in-class discussions
	Personalized assessment methods	Incorporates online resources	Group activities

Interpretation of the Results:

Engagement: Teacher-1 promotes personalized learning experience and critical thinking among learners. Teacher-2 encourages collaborative learning and peer-to-interactions to enhance active participation. Teacher-3 emphasizes students-led discussions and critical thinking exercises to enhance engagement. **Critical Thinking**: Teacher-1 emphasizes higher-order thinking skills such as application and analysis, arranging activities to various taxonomy levels. Teacher-2 integrates different levels of Bloom's taxonomy into flipped classroom activities, ensuring a comprehensive approach to learning. Teacher-3 focuses on higher-order thinking skills during in-class activities, aiming for learners to use understanding and knowledge in real-world settings. **Strategy:** Teacher-1 focused on project-based learning and experiential learning, encouraging hands-on activities for learners. Teacher-2 preferred-recorded video lectures and online resources to deliver content outside of class, enhances engagement during in-class activities. Teacher-3 also uses pre-recorded lectures but emphasizes in-class discussions and activities to reinforce learning. Teacher-1 utilizes portfolios, presentations, and peer evaluations to assess students' development. Teacher-2 employes formative assessments like quizzes and discussions for feedback and adjustments. Teacher-3 applies a mix of formative and summative assessments, including group projects and exams, to evaluate learners 'skills. **Similarities:** All three participants highlighted student-centered learning and the development of critical thinking skills. They acknowledge the advantages of the flipped classroom model for improving learner's deeper learning. **Differences**: Teacher-1 focuses more on project-based learning and personalized assessment methods compared to Ayesha and Hamza. Teacher-2 leans towards pre-recorded video lectures and formative assessments, while Teacher-3 priorities in-class discussions and mix of formative and summative assessments. In short, all the three share equal objectives of improving students-centered learning and critical thinking. All of them applied different strategies and approaches to achieve their objectives within the context of the flipped classroom activities connected with Bloom's cognitive skills. Participants different viewpoints contribute to a useful educational experience for their students.

Documentation Analysis and Coding Frequency Analysis:

Table 2:

Code	Description	Frequency in interviews
Engagement	Mention of student's engagement	15
Critical thinking	Reference to higher order thinking skills	10
Blooms taxonomy	Use of blooms taxonomy in planning	12

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Challenges	Challenges faced in implementing the model	8
Strategies	Teaching	14

Interpretation of the Results:

Engagement: The high frequency (15) suggests that learner's engagement is a significant theme, indicating that the flipped classroom model effectively involves learners in their learning process. **Critical Thinking:** This frequency (10) highlights that teachers are efficaciously integrating activities that promote higher-order thinking skills, aligning with Bloom's taxonomy. Frequency (12) references to Bloom's taxonomy highlight its importance in lesson planning and the alignment of teaching strategies with cognitive domains. **Challenges:** The high frequency (8) of strategies mentioned represents that participants employ a variety of approaches to develop learning, reflecting adaptability and innovation.

Qualitative Thematic Analysis by Themes

Table 3:

Theme	Frequency	Example Questions	Interpretation
Engagement	15	How engaged are students in class ?	High student involvement and Interest in Learning
Critical Thinking	10	How does the model promote thinking?	Enhanced Critical thinking and problem solving skills

Interpretation of the Results:

Engagement: With a frequency (15) of engagement is the most prominent theme, demonstrating that the flipped classroom model significantly increases learners' participation and attention. Examples: Learners are more active involved in class discussions. **Interpretation:** Highlights high learners engagement resulting from the flipped classroom model. **Critical Thinking**: The frequency of (10) indicates that the flipped classroom model effectively promotes higher-order cognitive skills, crucial for analysis. Examples: Learners demonstrate deeper understanding of concepts. Interpretation: Proves improvement in higher-order thinking skills.

Descriptive Statistics Analysis of Qualitative Data:

Table 4:

Metric	Teacher 1	Teacher 2	Teacher 3	Mean	T- Value	P- Value
Engagement score	8	7	9	8.0	1.23	0.24
Critical Thinking Score	7	8	6	7.0	0.98	0.34

Interpretation of the Results:

Engagement: The mean engagement score of 8.0 reflects high level of learner involvement across all participants. The T-value (1.23) and p-value (0.24) highlight no significant variation among the participants, signifying consistent success of the flipped classroom model. **Critical Thinking:** The mean score of 7.0 shows a solid promotion of higher-order thinking skills. The t-value (o.98) and p-value (0.34) again proves no significant difference, implying that the model consistently boost critical thinking.

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Inferential Statistics and Comparative Analysis:

Table 5:

Metric	Teacher 1	Teacher 2	Teacher 3	Comparative interpretation
Engagement Score	8	7	9	High engagement across all Teachers
Critical Thinking Score	7	8	6	Varies, Indicating different focus areas

Interpretation of the Results:

Engagement: Although there are slight differences, all teachers report high engagement, with teachers-3 having the highest score. This indicates that the flipped classroom model is specifically effective in fostering learners' engagement. **Critical Thinking**: The change in critical thinking score signifies different approaches to promoting cognitive skills. Teacher-2 (all) scores highest, possible due to the integration of additional instructional models.

10. Corroboration of Findings :

To analyze a comprehensive understanding, corroborating findings from the data analysis techniques can provide a deep insight.

i. Qualitative Findings:

Engagement: All interviewed teachers reported high levels of student engagement. Qualitative data on high engagement is supported by the frequency mean score of 8.0. **Critical thinking:** Teachers noted improvement in students' higher-order thinking skills. Teachers' observations of improved critical thinking are corroborated by the mean score of 7.0 in the analysis. **Challenges:** Teachers indicated challenges in implementing the flipped classroom model, such as ensuring learners complete pre-class work. Although, qualitative data revealed exact challenges, frequency data did not measure this aspect directly, but the overall high scores imply effective implementation despite these challenges.

ii. Analysis by Frequency and Context:

Engagement: Mean score of 8.0, signifying high engagement. **Critical Thinking:** Mean score of 7.0, proving improved critical thinking. **T-values and P-values:** indicated no significant differences among teachers, suggesting consistent effectiveness of the model.

Comparative Documentation Analysis of Terms Used by Teachers by Frequency and Context

Table 6: frequency and context of term used by teachers:

Term	T-1	T-2	T-3	Combined Frequency	Context
Engagement	5	4	6	15	Refers to student participation and interest in class activities.
Critical Thinking	4	4	2	10	Involves activities promoting higher-order cognitive skills.
Bloom's Taxonomy	4	5	3	12	Used in planning and structuring lessons.
Challenges	3	2	3	8	Discusses obstacles in implementing the flipped classroom model.
Strategies	4	5	5	14	Different teaching methods and approaches used in the classroom.

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Comparative and Contrast Analysis

Table 7: Comparative and Contrast Analysis of Interviewees

Metric	Data Insight	Frequency Data Insight	Combined Insight
Engagement	High Student Involvement and interest	Mean score of 8.0	Both data set indicate strong student engagement.
Critical Thinking	Improved higher-order cognitive skills	Mean score of 7.0	Both types show enhancement in critical thinking skills.
Challenges	Issues with pre-class preparation	Not directly measured	Challenges identified qualitatively are not quantified but implied.
Strategies	Diverse methods used for teaching	Not directly measured	Qualitative data provides rich details on teaching strategies.

Interpretation of the Results:

Engagement: The data analysis confirm higher learners' engagement, with mean scores and teacher testimonies aligning. **Critical Thinking:** Consistent development is noted in both data sets, demonstrating that the flipped classroom model successfully promotes higher order thinking. **Challenges:** Qualitative data sheds light on targeted challenges suggesting areas for further investigation. **Strategies:** Qualitative insights provide a detailed understanding of the teaching methods employed, complementing the frequency scores.

Table 8: Comparative Analysis of Interviewees

Metric	T-1	T-2	T-3	Combined Frequency	Example Response	Insight
Engagement Score	8	7	9	24	"Students are more actively involved."	High engagement across all teachers.
Critical Thinking Score	7	8	6	21	"Students demonstrate deeper understanding."	Effective promotion of critical thinking.
Challenges	3	2	3	8	Ensuring students complete pre-class work is challenging."	Shared concerns about implementation challenges.
Strategies	4	5	5	14	"I use a variety of teaching methods to engage students."	Diverse teaching strategies employed by teachers.

Interpretation of comparative Findings and Combined insights:

Engagement: Teacher -1 frequency is 8, teacher-2 is 7 and teacher-3 is 9 and combined frequency is 24. High score and frequency 8 mentioned indicate that the flipped classroom model is particularly effective in engaging learners. **Critical Thinking:** Teacher-1 frequency is 7, teacher -2 is 8 and teacher -3 is 6 and combined frequency is 21. Consistent findings across data sets confirm that this model improve higher-order thinking skills.

Challenges: Teacher-1 frequency is 3, teacher-2 is 2 and teacher-3 is 3 and combined frequency is 8. Qualitative data highlights common challenges, providing a basis for targeted interventions. **Strategies**: Teacher-1 frequency is 4, teacher-2 is

5 and teacher- 3 is 5 and combined frequency is 14. The use of diverse teaching methods is a key strength, as evidenced by both the frequency of mentions and qualitative descriptions. Effective promotion of higher-order thinking, with teacher-2 (8) showing the highest score, indicating a strong focus on cognitive skills. Teacher's responses revealed constructive outcomes of implementing flipped classroom model, involving learning engagement, deeper understanding of concepts, and enhanced performance. These three teachers encourage the value of aligning activities with Bloom's taxonomy to promote cognitive engagement. They investigated two main challenges one is learners' preparation and second is time constraints, but teachers have found out the solutions of these challenges such as incentives and online platforms to tackle them.

Findings

To sum-up, the findings revealed that the flipped classroom model after aligning with cognitive framework, may improve learners' learning experiences and outcomes and boost learners' engagement and motivation. Overall, learners can improve understanding of concepts and critical thinking skills that may have constructive impact on learners' performance and academic achievement.

Teaching effectiveness: Teacher-1 mean score is slightly higher than teacher-2 and 3 indicating a strong ability to deliver instruction effectively.

Student Engagement: Teacher-2 mean score is the highest, suggesting a greater emphasis on fostering student engagement and participation

Assessment outcomes: Teacher-3 mean score on assessment outcomes is comparable to teacher-2 indicating similar effectiveness in evaluating student learning

Q No-1 What are the teaching strategies in the flipped classroom aligned with Bloom's taxonomy?

The flipped learning approach aligned with Bloom's taxonomy to develop advanced cognitive levels among learners. Educators have considered this model in favoring learning objectives from lower-level knowledge acquisition to higher cognitive levels. However, at the foundational levels of Bloom's taxonomy that are focusing on remembering and understanding, learners are basically involved in recalling, facts, and concepts and trying to understanding the meaning of the information that was being delivered to them. At this level the focus is on basic knowledge acquisition and understanding of concepts. Therefore, in the lower level of Bloom's taxonomy learners are kept engage with pre-recorded content and reading at home. While, in class time focus is on higher-level cognitive activities which link to the Bloom's taxonomy for example, discussion, applying, analyzing, evaluating, creating and problem-solving activities. So, as a result, this approach develops deeper understanding and command on the learning content among the learners.

Q No-2 How does the flipped classroom enhance higher-order thinking among ESL learners and teachers?

1-Remember and understand: Which indeed fall under lower level of Bloom's taxonomy and focusing on basic recall/remembrance and comprehension. In flipped classroom learners are kept engaged with pre-recorded content, watch videos and read materials before class time to acquire knowledge and understanding of ideas.

3-**Apply:** is the third important level of Bloom's taxonomy, engages applying learned information in classroom setting or solving problems. In the context of flipped classroom applying refers to facilitate learners through activities and discussions during class time where learners apply the pre-recorded content, they have involved with outside of class to solve problems, complete assignments, and participate in hands-on activities. Applying approach directs learners to actively use the understanding and knowledge they have acquire independently, with the help and guidance of teachers according to learning and learners demand and need.

4-Analyze: Analyzing is the fourth level of Bloom's taxonomy, comprises breaking down information into parts and understanding the connection between those parts while, in a flipped

classroom situation, analyzing can be foster through collective activities like group discussions, group work, or individual work, data, text, or research work related to the topic where students critically understand the pre-recorded material, in this way learners have access to content before class. Teacher may be asked to identify patterns, compare and contrast different ideas, or evaluate the validity of information delivered. Thus, in this way, learners are kept engage in higher-level thinking and developing deeper understanding of the subject matter.

5- **Evaluate:** Evaluating is the fifth level of Bloom's taxonomy, comprises making findings based on criteria and standards while, in a flipped classroom situation, evaluating can be integrated by having learners assess the quality and relevance of the pre-recorded content they have engaged with outside of class. Learners may be tasked with evaluating arguments showed in videos, assessing the credibility of sources, or evaluating the usefulness of instructional content. Moreover, class time is used for discussion or debates, peer review sessions, presenting innovative arguments. Additionally, a number of chances can be provided for learners to clear their opinions, developing their skills to evaluate information critically.

6-Create: Creating is the sixth highest level of Bloom's taxonomy, comprises generating latest ideas and ways of thinking based on current knowledge while, in the situation of the flipped classroom, creating is encouraging learners through different online activities that involve learners to use their understanding in innovative styles such as, learners may be tasked with designing a project, work on experiments during class sessions demonstrating their abilities to synthesize information and generate fresh ideas, finding a solution to a real-world challenge, or producing multimedia presentations based on the content they have learned from pre-recorded content. Through these activities, learners became able to demonstrate their command on the subject material and can be able to develop their critical thinking, ability to solve problems and creativity.

Classroom Learning Objectives (CLOs)

Teacher-1: provided explicit examples of learner's achievements, for example a group of learners effectively designing and conducting their own experiments and demonstrating critical thinking skills by analyzing literary articles through Bloom's taxonomy lenses. Teacher motivated her students the for self-directed technique to seek out resources, participate in discussion. Further, she tried to engaged them in activities to enhance the knowledge, provided them recorded lessons. Teacher stated that it is a modern method of teaching and learning perhaps, students don't' want it. For sharing her experience, teacher said, last night's quiz stopped her task. It takes a while to get ready. Teacher told about how much time it takes to prepare for flipping and as a result her student's participation in lesson might have been reduced while her student's engagement has increased. Teacher evaluated AP score, effecting on learners learning and achievement. In short, Hira Jalil has unique experience and practices. Teacher discussed different instructional strategies, such as creating tiered assignments, designing higher-order thinking questions, and scaffolding activities to guide students through various level of cognitive complexity. Teacher-2: Teacher faced a challenge to ensure that all learners come to class prepared after watching the pre-class materials. To solve this challenge, she provided incentives for completion and follow up with personalized help for hardworking learners. Teacher-3**:** obviously, yes, he assigned a pre-class reading or video for learners to review basic concepts like "remembering". In-class, learners engaged in group discussion and hand-on experiments to discover and analyze scientific concepts like "applying and analyzing". For alignment to Bloom' taxonomy, he also implemented the SAMR model (Substitution, Modification, Redefinition) to prove that technology alignment in his flipped classroom activities improved learning outcomes.

Learning Outcomes by the Teachers

Teacher-1: shared observations of increased learners' engagement and motivation resulting from flipped classroom aligned with Bloom's taxonomy. Teacher also discussed improvements

in students learning outcomes, such as higher achievement on assessments and deeper understanding of scientific concepts. Teacher uses the flipped instructional strategy to enhance her teaching methodology, to improve learners' engagement and performance**.** Teacher uses videos to support learner's progress. Teacher-2: The participant noticed a great change in the improvement of the learners, they engaged and performed in the class assignments. Learners were more actively involved in class activities like class discussions and presentation deeper understanding of mathematic concepts. Teacher-3: The participant analyze that learners were motivated to take active part in class activities and take ownership of their learning. They were facilitated with the opportunities to discover concepts in a collaborative and interactive settings.

11. Discussion

Both objectives of this study aim to investigate how the flipped learning approach aligned with Bloom's taxonomy. First, by categorizing instructional strategies and second, by inspecting its usefulness in developing advanced cognitive levels for example analysis, evaluation, and creation among ESL learners. In the same way, both of questions ask about examples and alignment of the flipped learning approach aligned with different levels of Bloom's taxonomy. Teachers as participants have to face some challenges and they suggested the solutions. Teacher-1 mentioned issue for example, ensuring students actively engage with pre-class materials or finding appropriate resources for Bloom's taxonomy-aligned activities. And for solution, teacher provided extra support for struggling learners and interaction with students to share resources. Teacher reported that flipped pedagogy with Bloom's taxonomy integration has made the content more complicated for ESL learners. Students became more responsible in traditional settings. Teacher had to use more pictures for topic to help ESL learners remember information. Most of the learners are afraid of flipped classroom approaches. Teachers acknowledged that they must improve their teaching skills because teaching a flipped classroom is not an easy task. Teacher-2 has highlighted the issue that all learners come to class prepared after completing pre-class tasks. To tackle this, teacher provided incentives for completion and provided extra help as needed. A significant improvement in learners understanding and retention of concepts was observed by the teacher. Learners are more actively engaged in class discussions and demonstrate greater confidence in problem-solving. Teacher-3 has to face the challenges of time constrains. Online platforms for asynchronous discussions and collaboration were also applied by the teacher. This provided opportunities for learners to engage with course content at their own pace and facilitates deeper understanding.

Limitation of this study is a small sample size of teachers and on teachers-reported data. Findings are limited in generalizability due to the definite context of teacher's classrooms and experiences. The researcher has observed potential biases in-self reported from data collected by the teachers. Teachers have to face a number of challenges in measuring the long-term effects of the flipped classroom model on learners learning outcomes. Forthcoming studies may explore the long-term effects of the flipped classroom model on learners learning outcomes across various subjects and grade levels. Further studies could investigate the effectiveness of instructional techniques and strategies for aligning learning objectives with cognitive frameworks.

The upcoming researchers must conduct longitudinal researches to measure the continual effect of the flipped instructional strategy integrating Bloom's taxonomy**.** They must explore the usefulness of various instructional strategies for aligning learning objectives with Bloom's taxonomy across different subjects' domains and grade levels. Additionally, they must investigate the perceptions and experiences of learners about the flipped classroom model's implementation.

12. Implementation and Recommendation:

Through the through study depending on the findings, recommendations for teachers include providing professional development on flipped classroom methods and cognitive frameworks. Further, encouraging cooperation among teachers to share best practices, and use technology for learning opportunities**.** These suggestions may

support teachers optimize the effectiveness of the flipped classroom model in several academic and educational situations. It is recommended by the researcher that encourage the development of interactive learning groups where teachers can exchange experiences and useful practices for implementing the flipped classroom model and organize professional developmental opportunities and resources for teachers to learn about suitable strategies for aligning learning objectives with Bloom's taxonomy. Moreover, motivate teachers to integrate Bloom's taxonomy into instructional design when implementing the flipped classroom model.

13. Conclusion

This structure analysis cleared comprehensive insights into the usefulness of the flipped classroom model in improving learner's engagement and critical thinking and provided Pakistani ESL learners' clear recommendations for future implementation and research. The flipped classroom model significantly improved engagement and critical thinking among ESL learners in Pakistan. Engagement levels are uniformly high, indicating the model's effectiveness across different subjects. Critical thinking scores highlight some variability, suggesting that individual teacher strategies impact the effectiveness of promoting higher-order cognitive skills. Through a thoroughly structured interview with three participants (who were the ELT teachers) valuable insight into the implementation of the flipped pedagogy with Bloom's taxonomy integration. Participants experiences, strategies, and perspectives have contributed to the qualitative methodology of the research study, enhancing our understanding of effective instructional practices in educational settings. By addressing gaps in previous research through a focus on Bloom's taxonomy, it offers practical insights and recommendation for ELT teachers seeking to expand cognitive involvement and learning objectives for learners in flipped learning context.

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