Empowering EFL learners: Exploring the role of Flipped Learning in nurturing metacognitive abilities beyond traditional approaches

Fabián García Sarasty

Universidad Nacional Abierta y a Distancia – UNAD

Escuela Ciencias de la Educación - ECEDU

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Fabián García Sarasty

Thesis advisor

Dr. Virginia Morales Pulido

Universidad Nacional Abierta y a Distancia – UNAD

Escuela Ciencias de la Educación - ECEDU

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Abstract

Within the educational domain, there has been an increased emphasis on the integration of ICT (Information and Communication Technologies), which was previously not given as much attention, and efforts were not as effectively executed. Their implementation has provided approaches, materials, and fresh instructional techniques to guarantee that students receive education customized for diverse learning paces. This action research addresses challenges in technology integration within the Colombian educational context, by researching the impact of implementing the flipped learning approach on metacognitive skill development among sixth-grade English as a Foreign Language (EFL) students in a private bilingual school in Cali, Colombia. This study focused on delivering instructional content online through the Flipped Learning methodology before class and utilizing in-class time for active learning activities. By leveraging technology, the researcher aimed to gain insight into how flipped learning influenced metacognitive skills development, offering valuable contributions to educational research. And additionally, aiming to overcome barriers to authentic language exposure and meaningful language practice for 6th-grade students. The study acknowledged limitations in generalizability to other contexts and highlighted the importance of future research exploring additional dimensions of flipped learning. The findings suggested a positive correlation between the flipped classroom factor and the level of meaningful development of metacognitive skills among the sixth-grade students attending the private bilingual school. The researcher expects the findings could encourage fellow educators to consider integrating flipped learning approaches into their teaching practices, potentially enhancing education quality in EFL classrooms.

***Key Words*:** Flipped Learning, Metacognitive Skills, EFL Education, Technology Integration, Active Learning, Student Engagement

Resumen

Dentro del ámbito educativo, ha habido un énfasis creciente en la incorporación de las TIC (Tecnologías de la Información y la Comunicación), las cuales anteriormente no recibían tanta atención, y los esfuerzos no se ejecutaban de manera tan efectiva. Su implementación ha proporcionado enfoques, materiales y técnicas de instrucción nuevas para asegurar que los estudiantes reciban una educación adaptada a diversos ritmos de aprendizaje. Esta investigación aborda los desafíos en la incorporación de la tecnología dentro del contexto educativo colombiano, investigando el impacto de implementar el enfoque de aprendizaje invertido en el desarrollo de habilidades metacognitivas entre estudiantes de sexto grado de inglés como lengua extranjera (EFL) en un colegio bilingüe privado en la ciudad de Cali, Colombia. Este estudio se centró en entregar contenido instructivo en línea por medio de la metodología de Aprendizaje Invertido antes de la clase y utilizar el tiempo en clase para actividades de aprendizaje activo. Al aprovechar la tecnología, el investigador buscaba comprender cómo el aprendizaje invertido influía en el desarrollo de habilidades metacognitivas, ofreciendo valiosas contribuciones a la investigación educativa. Además, buscaba superar las barreras para la exposición auténtica al lenguaje y la práctica significativa del idioma para estudiantes de sexto grado. El estudio reconoció limitaciones en la generalización a otros contextos y resaltó la importancia de futuras investigaciones que exploren dimensiones adicionales del aprendizaje invertido. Los hallazgos sugieren una correlación positiva entre el factor del aula invertida y el nivel de desarrollo significativo de habilidades metacognitivas entre los estudiantes de sexto grado que asisten al colegio bilingüe privado. El investigador espera que los hallazgos puedan alentar a otros educadores a considerar la integración de enfoques de aprendizaje invertido en sus prácticas docentes, potencialmente mejorando la calidad educativa en las aulas de EFL.

***Palabras Claves*:** Aprendizaje Invertido, Habilidades Metacognitivas, Educación en Inglés como Lengua Extranjera, Integración de la Tecnología, Aprendizaje Activo, Participación Estudiantil

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Introduction to the Research Study

In the field of educational research, there has been a concerted effort to explore innovative pedagogical approaches aimed at enhancing student engagement and promoting deeper learning outcomes. (Cishe, 2017) argues that the ongoing advancements in technology and the changing landscape of education in the 21st century necessitate a constant reassessment of educational strategies. And, this evolution in educational goals holds particular importance within the sphere of teacher education.

One approach that has gained prominence is flipped learning, which aims to restructure the traditional classroom model by providing instructional content online before class and using in-class time for active learning activities. Flipped learning, pioneered by (Bergmann and Sams, 2012), has revolutionized traditional teaching methodologies by restructuring the learning process. Through shifting instructional content delivery outside the classroom, this approach allows for more engaging and interactive in-class activities. According to (Ertmer and Newby, 2013), flipped learning provides opportunities for students to create meaningful connections, reflect on their learning processes, and develop metacognitive awareness.

By focusing on the nexus between flipped learning and metacognitive development, this research sought to inform effective instructional strategies and promote deeper learning outcomes in EFL education. Grounded in constructivist theory, this research proposed that active learning experiences enable students to construct their own knowledge by building upon existing cognitive frameworks. This research aimed to answer the question: What are the effects of implementing flipped learning on the development of metacognitive skills in sixth-grade EFL students at a private bilingual school in Cali, Colombia?

The research was conducted to explore how implementing a flipped learning methodology could potentially enhance metacognitive abilities on the 6th-grade students. The goal was to assess the types of skills that would emerge following pedagogical interventions. Additionally, this investigation aimed to provide valuable insights into educational research, emphasizing effective strategies that promote students' cognitive development and enhance academic success across varied learning settings.

The general objective was to determine the impact of flipped learning on strengthening metacognitive skills in this specific educational context. Through specific objectives including the identification of perceptions among students and teachers, the design of a didactic proposal integrating flipped learning principles, and analysis of metacognitive skill transfer to other language domains, this study intended to provide valuable insights to EFL pedagogy. Understanding the significance of flipped learning in enhancing students' metacognitive abilities is crucial for teachers seeking innovative strategies to promote deeper learning outcomes and lifelong learning.

This research attempted to elucidate effective pedagogical practices in EFL education, specifically focusing on metacognitive skill development. By investigating the principles of peer interaction, task interdependence, and group dynamics, the researcher designed a comprehensive research methodology that involved data collection, and the implementation of a didactic proposal. This analysis elucidated the broader implications of flipped learning in enhancing students' overall language learning abilities.

Upholding ethical principles ensured that this research could offer valuable insights to the educational community and contribute to the improvement of effective language teaching practices, all while safeguarding the well-being and rights of the participants involved.

Context of the Research Problem

In recent years, educational research has focused on innovative pedagogical approaches that enhance student engagement and promote deeper learning outcomes. (Thorne, 2003), suggests that digital technologies offer fresh possibilities for reshaping educational practices. They particularly enable the design of pedagogical approaches that not only increase student engagement but also contribute to more profound and impactful learning.

In response to inquiries and aiming to strengthen knowledge acquisition, new learning strategies have been developed in recent years, such as the "Flipped Classroom" which is one of the most recognized and implemented worldwide.

This approach reverses the elements of traditional class and homework tasks. Its rationale, as mentioned by (Tolks et al., 2016), is based on sending students materials (articles, podcasts, book chapters, videos) before class, with the aim of fostering active and self-directed learning. It proposes restructuring the traditional classroom model by providing instructional content online before class and using in-class time for active learning activities.

In our Colombian context, integrating technology into language teaching faces numerous challenges. For instance, access to technology is a major obstacle particularly impacting schools and students in rural or economically disadvantaged areas. Insufficient infrastructure and resources further complicate matters, inhibiting efficient use of digital tools by teachers and students alike. Also, disparities in digital literacy levels among teachers and students worsen the situation, with inadequate training and support hindering seamless technology incorporation into language instruction.

In a private school in Cali, Colombia, parents and students have brought up in the School Quality Surveys that the absence to access to digital resources like online dictionaries and

educational apps poses a significant challenge for 6th-grade students, mainly in their English classes. Based on their feedback, without these tools, students are limited to traditional teaching methods, which may not fully immerse them in authentic language usage or provide diverse practice opportunities. As a consequence, students' language learning experience lacks dynamic and interactive elements crucial for comprehensive language acquisition.

(Flavel, 1980) states that metacognitive skills refer to the ability to reflect on and regulate one's own learning processes, including setting goals, planning strategies, monitoring progress, and evaluating outcomes. According to (Jonassen, 2000), without access to technology, students may lack opportunities for self-assessment, reflection, and self-directed learning, which are crucial for developing metacognitive awareness and enhancing language proficiency. Therefore, not accessing technology in English class could impede students' metacognitive development and impede their overall learning experience. According to (Jang and Chen, 2010), the use of technology in the classrooms can enhance students' motivation and engagement in learning, and it would aid them to build their skills in a more efficient manner.

Flipped Learning provides students with instructional materials to be reviewed before class. By taking control of their learning outside the classroom, students are given the opportunity to assess their existing knowledge and identify areas of weakness or uncertainty, which is a fundamental aspect of metacognition. During in-class sessions, the flipped learning model encourages the implementation of active learning strategies, including group discussions, hands-on activities, and collaborative problem-solving tasks. These activities require students to analyze and evaluate concepts, actively apply their knowledge, and reflect on their own thinking processes.

Through this interactive and reflective process, students obtain a better grasp of the content and build their metacognitive skills, such as self-monitoring, self-assessment, and self-reflection. As stated by (Sternberg, 1998), metacognitive ability is not fixed; rather, it is regarded as a construct of developing expertise that is in a process of continuous development. Additionally, Flipped Learning creates opportunities for students to reflect on their understanding, to take control of their learning, and regulate their cognitive processes.

Metacognition, on the other hand, refers to the ability to reflect on and regulate one's own learning processes. According to (Chen, 2017), metacognition helps learners recognize the gap between being familiar with a topic and understanding it deeply. However, weaker learners often need to develop this metacognitive recognition, to avoid disappointments and discouragement when trying harder a next time. Therefore, enhancing metacognitive skills is crucial for students' academic success and lifelong learning.

While previous research has examined the impact of implementing a flipped learning methodology on students' learning results, there is insufficient research on its specific effects on metacognitive skill development in young learners, particularly in the context of EFL education, this study has focused on metacognitive skill development, seeking to provide students with the appropriate tools to become more active and independent learners, capable of managing their learning processes and adapting their strategies as needed.

The cultivation of metacognitive skills is not limited to the classroom; it extends to real-life situations, ensuring that students are provided with the resources necessary for continuous learning and personal growth throughout their lives. For example, in language learning, metacognitive skills allow learners to monitor their comprehension, select effective study methods, and adjust their communication strategies according to context. Also, in professional

settings, metacognition facilitates problem-solving, decision-making, and self-directed learning, essential for career advancement and personal development.

The research was conducted to know and identify what metacognitive abilities could be developed by implementing a flipped learning methodology. Therefore, this study set to uncover the potential of flipped learning to cultivate metacognitive competencies that are essential for deep and meaningful learning experiences in the field of EFL (English as a Foreign Language). This suggests an exploration into the uncertain territory of student metacognition.

(Kuhn and Dean, 2004) state that metacognition refers to the awareness and understanding of one's own thought processes, which is crucial for learning and problem-solving. The implication here is that the researcher embarked on a journey to investigate whether students would naturally acquire these skills, and if so, to what extent.

Through investigating the effect of flipped learning methodology on students' metacognitive skill development, this study has made valuable contributions to the existing literature and the findings are of great value to educators, curriculum developers, and policymakers, offering evidence-based strategies to promote metacognitive skills in 6th-grade EFL students.

Research Question and Objectives

Research Question

What are the effects of the implementation of flipped learning on the development of metacognitive skills in an EFL course of sixth-grade students at a Private Bilingual School in the city of Cali, Colombia?

The Research Objectives

General Objective

To determine the impact of the implementation of flipped learning on the enhancement of metacognitive skill development among sixth-grade EFL students at a Private Bilingual School in Cali, Colombia.

Specific Objectives

To identify the perceptions of 6th-grade students and teachers at a Private Bilingual School in Cali, about the teaching-learning processes.

To design a didactic proposal to develop metacognitive skills in an EFL course through the active method "Flipped Learning".

To document the changes in metacognitive skill utilization among sixth-grade EFL students after implementing the active method "Flipped Learning".

Rationale for the Study

Technology serves as a powerful tool in modern education, because it offers numerous advantages that facilitate the investigation of this specific area of interest. The area of English language teaching is facing new challenges in keeping students motivated because of the complexities associated with learning a second language. Teachers of the 21st century cannot be oblivious to these changes and challenges; therefore, they must integrate ICT into their daily educational work.

Unfortunately, our country presents a huge disconnect between the English teaching methodology, the kind of students sitting in the classrooms, their real and present needs, and the requirements today's society is asking of them. According to (Piotrowski and Witte, 2016), it is essential that language teachers develop educational practices that integrate technology for a new generation.

In a private school located in Cali, Colombia, insights from parents and students via the School Quality Surveys shed light on a significant difficulty arising from the lack of access to digital resources, particularly for sixth-grade students. Families voiced their concerns regarding the English classes, indicating a heavy reliance on traditional teaching methods characterized by textbook-centered approach, and teachers resorting to printed materials containing grammar exercises. This situation served as the underlying reasoning for the research endeavoring to assess the impacts of implementing flipped learning on the enhancement of metacognitive skills among sixth-grade students enrolled in an EFL course at a Private Bilingual School in Cali, Colombia.

According to a 2003-study conducted at the University of California, Berkeley, by Richardson, it was unveiled that only 20% of students in a lecture environment were able to

retain information presented after eight minutes of instruction, merely 15% of the students continue to exhibit prolonged and active engagement. Additionally, (Holman, 2011) suggests that millennial students demonstrate distinctive cognitive capabilities, dedicating an average of 20 hours weekly to internet usage. It was concluded that teachers need to level this internet usage by providing lectures, podcasts, and other educational materials to engage students effectively.

(Logan, 2015) argues that millennial students, those who have been immersed in technological devices like tablets or cell phones from an early age, demonstrate unique communication and learning tendencies. With the implementation of a Flipped Learning pedagogical model in an EFL course for sixth-grade students in a Private Bilingual School located in Cali, Colombia, it was expected that students took advantage of the possibilities that new technologies offered for dissemination and communication, while developing metacognitive skills, and that they were responsible for their own learning and were able to create, share and manage knowledge. Therefore, this research was conducted to determine the types of metacognitive skills that would emerge following the flipped learning interventions.

Researching the growth of metacognitive skills in EFL students is essential for maximizing language learning achievements, nurturing independence and critical thinking, and preparing students for academic and professional success in an interconnected world. (Bergmann and Sams, 2012) state that Flipped Learning is a pedagogical model, which proposes that learning should have more weight in class. It is called flipped learning because traditional teaching models and the roles of teacher and student are reversed. By targeting metacognitive skill enhancement, sixth-grade students at the Private Bilingual School were armed with essential cognitive tools that benefited their academic performance and, in the long term, laying the foundations for lifelong learning and problem-solving abilities.

Studies by (Harris et al., 2010), showed a direct relation between metacognition and academic achievement in the four communicative skills. Additionally, according to (Lee and Mak, 2018) researchers have been encouraged to examine potential ways to raise metacognition, due to the supporting function of metacognition in learning.

To sum it up, this study is vital as it emphasizes on metacognitive skills in the context of EFL and also, it recognizes the importance of learners' awareness and regulation of their own learning process, which is particularly relevant for language acquisition.

Literature Review

Introduction to the Literature Review

The literature review mentioned in this chapter has been organized using a thematic approach. By organizing the literature review in that way, the findings, theoretical frameworks methodologies and recommendations of the chosen studies were compared and contrasted, as to understand the topics and seek for gaps or areas that deserved further investigation. This thematic approach helped the researcher with the exploration of different studies related to the implementation of flipped learning and its possible effects on metacognition in language education.

The analyzed studies in this literature review offered insights and clarity into the effects of flipped learning on multiple abilities, integration of ICT in classes, methodologies for building metacognitive skills, and the correlation between assessment practices, teaching strategies, and language learning.

State of the Art

Through an extensive review of relevant research, the researcher presents an overview of the findings regarding the effectiveness of implementing the flipped learning methodology in enhancing students' engagement, learning results, and their academic learning experience.

In the study **"**Improving communicative competence of Korean college students based on the flipped classroom model: a handbook for teachers**"**, (Lim, 2016) explores the implementation of the flipped classroom model to enhance the communicative competence of Korean college students. It provides a handbook for teachers, offering practical guidance on incorporating the flipped learning approach in language education.

This study was conducted to evaluate the application of the flipped classroom approach in a university setting, and provide valuable insights into the potential benefits of implementing flipped learning for language education. It could provide valuable approaches and recommendations suited for an EFL curriculum targeting sixth-grade students.

In Medellin, Colombia, (Echavarria, 2016) employed a quasi-experimental design to examine the "Development of Foreign Language Listening Comprehension through Metacognitive Strategies and Podcast". This research study involved EFL students and used various data collection methods, including pre- and post-questionnaires, surveys, and interviews. Metacognitive strategy training was provided to the experimental group, while the control group received traditional listening instruction. Podcast materials were implemented as a supplementary resource for both groups, as well.

The findings showed that the integration of podcast materials as a learning resource enhanced learners' engagement and motivation, contributing to improved listening comprehension skills. The group that received training in metacognitive strategies, such as self-regulation, self-monitoring, and prediction, demonstrated greater improvement in foreign language listening comprehension compared to the control group. The study emphasizes that educators can design instructional practices that foster metacognitive skills, leverage technology-enhanced resources, in order to create meaningful experiences.

It also highlights that teacher training programs can incorporate metacognitive instruction to promote the successful incorporation of technology into language instruction teaching. This research investigated the effectiveness of the flipped learning model in enhancing students' reading comprehension skills and their metacognitive awareness.

(Prieto, 2017) conducted a research study on "Improving Reading Comprehension Test Results through Direct Instruction of Metacognitive Strategies for Reading Comprehension of Eighth Graders in a Blended Learning Environment". A quasi-experimental designed to analyze the effectiveness of direct instruction of metacognitive strategies in a blended learning environment was implemented.

A series of data collection methods, such as pre- and post-tests, interviews, surveys, and observations were employed. The research study involved a group of eighth-grade students which received direct and specific instruction on metacognitive strategies, while the control group received traditional reading instruction. The blended learning environment incorporated online platforms and face-to-face interactions.

The research findings revealed that the blended learning environment facilitated student engagement and participation, allowing for individualized instruction and practice. Also, the students in the intervention group and received explicit instruction, demonstrated improved comprehension skills, including better understanding of main ideas, making inferences, and analyzing text structure. In addition, this study pointed out the importance of metacognitive reflection and self-regulation in enhancing reading comprehension.

The study conducted in Malaysia by (Al-Jarrah et al., 2018) on "The Impact of Metacognitive Strategies on Jordanian EFL Learners' Writing Performance." investigated the influence of metacognitive strategies on the writing performance of Jordanian English as a Foreign Language (EFL) learners. A quasi-experimental design was implemented in this study; a selected group received clear and direct instruction in metacognitive strategies, while a control group received traditional writing instruction. The participants were Jordanian students studying English in a Malaysian university. Multiple data collection methods, including pre-tests, post-

tests, writing samples, and questionnaires, were employed to measure the learners' writing performance and their metacognitive awareness.

The findings indicate that the implementation of metacognitive strategies had a positive influence on the writing performance of the treatment group. These learners demonstrated improvements in their overall writing proficiency, including content organization, coherence, vocabulary use, and grammatical accuracy. Also, this group exhibited higher levels of metacognitive awareness and the implementation of specific metacognitive strategies, including self-evaluation, self-monitoring and planning. The findings suggest that explicit instruction and practice in metacognition can enhance learners' writing performance and metacognitive awareness.

The research study “Flipped classroom y el efecto en las competencias transversales de los alumnos del curso de electricidad y electrónica industrial en una universidad pública de Lima” (Flipped Classroom and its effect on Transversal Competencies of students in the Industrial Electricity and Electronics Course at a Public University in Lima) by (Benites, 2018) is focused on examining the effects of the flipped classroom methodology on the transversal competencies of students in an industrial electricity and electronics course at a public university in Lima, Peru.

This research aimed to investigate the impact of implementing flipped learning on competencies and shed light on the broader effects of this methodology on student outcomes. The results of the research on the effectiveness of the flipped classroom teaching in comparison with traditional lecture-based teaching found a positive effect in favor of the flipped classroom on learning results. Also, it indicated increased levels of engagement and skill performance among participants in the experimental group compared to the control group. The students who

were assigned to the experimental group demonstrated higher behavioral and emotional engagement and the ability to study course content at home before participating in class activities, as well.

(Carter, 2019) conducted a study titled "The Connection between Metacognition and Academic Writing in a Praxis Inquiry Model of Teacher Education." to examine the relationship between metacognition and academic writing skills among pre-service teachers within a praxis inquiry model of teacher education. The author used a mixed-methods approach to investigate the relationship between metacognition development and academic writing.

This researched included pre-service teachers studying in a teacher education program, employing various data collection methods such as surveys, interviews, and analysis of written reflections and academic papers. The study's results indicate that there was a positive correlation between metacognitive awareness and the quality of academic writing. That is to say, metacognitive strategies, such as organizing, self-monitoring, and self-evaluation, played a vital role in improving writing performance. This led to the conclusion that individuals who exhibited higher levels of metacognition demonstrated superior writing skills, including organization, coherence, and critical thinking.

(Bakkevoll's, 2018) "Self-assessment and motivation: a mixed method study of a group of English L2 students in Norwegian lower secondary education", examined the relationship between self-assessment and motivation among a group of English L2 students in Norwegian lower secondary education. This study explored the relationship between assessment practices and student motivation. It described the process of moving from the traditional teaching method to a self-paced online content before class, students were able to explore and build knowledge. This change in approach helped to increase motivation among students. Understanding the role

of students and motivation in language learning can complement the investigation of the effects of flipped learning on intrinsic motivation.

The research employs a mixed-method approach, combining quantitative and qualitative methodologies to obtain data on self-assessment and motivation among English L2 students. The study's qualitative component involves interviews or surveys with students to gain insights into their perceptions of self-assessment and motivation. These interviews may explore how students perceive the impact of self-paced online content on their motivation levels, their experiences with the traditional teaching method, and their views on the role of self-assessment in their learning process.

The quantitative component of the study includes the collection of data through standardized questionnaires or scales that measure self-assessment and motivation. These instruments can assess students' self-perceived competence, autonomy, and relatedness, which are important factors within self-determination theory. This study presents key findings and implications related to the integration of metacognitive practices in English Language Teaching (ELT) courses. Educational research emphasizes the importance of learner autonomy and self-directed learning, investigating the role of metacognition in language education becomes crucial in optimizing teaching methodologies and empowering learners to take ownership of their learning journey.

The study named “Effect of collaborative flipped learning strategy and socio-cognitive ability on students' metacognitive skills” by (Abbas et al., 2022) examined the effect of collaborative flipped learning approach and social cognitive skills on metacognitive abilities and self-efficacy in primary school pre-service teachers. It explores how the combination of

collaborative learning and flipped instruction can enhance metacognitive development. The article mainly focuses on the implementation of a collaborative flipped learning strategy.

This involves students engaging in pre-lesson tasks independently and then collaboratively discussing and applying the acquired knowledge during in-class activities. Also, this study examines the influence of the role of socio-cognitive ability on students' metacognitive skills. The study shows that the collaborative flipped learning strategy had a positive influence on students' metacognitive skills. The pre-lesson activities helped to encourage students to engage in self-directed learning, which in turn, helped to promote their awareness of their own learning processes and enhance metacognitive regulation. The collaborative in-class activities helped to provide students with different opportunities to apply their knowledge and engage in meaningful discussions, which helped to strengthen their metacognitive abilities.

The research study conducted by (Hui-chia and Sheng-hui, 2022) titled "The Development of EFL Learners' Metacognition in a Flipped Classroom." explored the impact of a flipped classroom model on the growth of metacognitive skills among English as a Foreign Language (EFL) learners. This research involved EFL learners at the university level, and the implementation of online instructional material prior to face-to-face class sessions.

(Hui-chia and Sheng-hui 2022) applied both qualitative and quantitative data collection methods, including a set of questionnaires, interviews, and reflective journals. The research findings show that the implementation of the flipped classroom approach facilitated collaborative learning, fostering peer interaction and discussions that supported metacognitive development. The enhanced students' metacognitive awareness is evidenced when the students demonstrated improved ability to set goals, organize their learning strategies, and evaluate their own performance.

This study highlights the relevance of the teacher's role in fostering metacognition by providing guidance, scaffolding, and metacognitive instruction. It is important to point out that the duration of the intervention of this study was relatively short, and the long-term effects of the flipped classroom on metacognitive development remain unknown. Also, this study may have some limitations regarding the sample size used which limits the generalization of the findings.

In 2022 Chapman and Pushpalalitha conducted the study "Exploring the Use of Metacognitive Strategies to Enhance Reading Comprehension in Young Learners" to investigate the effectiveness of metacognitive strategies in improving reading comprehension skills among young learners. The study involved young learners and employed multiple data collection methods, including pre- and post-assessments, observations, interviews, and surveys. Metacognitive instruction was provided to the experimental group, while the control group received traditional reading instruction.

The experimental group demonstrated higher levels of comprehension, including improved text understanding and problem-solving skills. This study identified that specific metacognitive strategies, such as self-questioning, summarization, and monitoring, were more effective in enhancing learners' reading comprehension. Metacognitive instruction facilitated learners' awareness and control over their reading processes, leading to increased self-regulation and strategic reading behaviors.

Though, the study only focused on young learners within a specific educational context, raising questions about the relevance of the results to other populations and age groups, the findings suggest that explicit instruction in metacognition can enhance reading comprehension skills by promoting self-regulated learning and strategic thinking.

Organizing the literature review thematically is important in educational research because it facilitates a comprehensive synthesis of existing knowledge, identification of research gaps, development of logical arguments, and enhancement of readability and clarity. Additionally, it provides a solid foundation for researchers to build upon and contributes to the advancement of the field by identifying areas for future exploration and contributing to the existing body of knowledge.

Previous research studies have examined the impact of Flipped Learning on student learning outcomes, however, there still remains a gap in the literature regarding its specific effects on metacognitive skill development, specifically in the context of EFL education for young learners.

That is why, in spite of the outcomes mentioned in this in this literature review, it is worth noting that further research is required to analyze the long-term effects of flipped learning on metacognitive skills development, investigate its potential impact on diverse student populations, and identify optimal instructional strategies for its successful implementation in ELT classrooms. This research aimed to address this gap by investigating the effects of Flipped Learning on the development of metacognitive skills in sixth-grade students.

Theoretical Framework

Theoretical frameworks provide a conceptual lens through which researchers analyze the fundamental principles, assumptions, and theories that guide their study. Over recent years, educational research has increasingly shifted its focus towards exploring innovative pedagogical approaches that enhance student engagement and promote advanced comprehension.

For instance, lots of attention has been drawn to Flipped Learning approach because of its potential to transform the traditional classroom model by exploiting technology and active

learning strategies. This framework served as a guiding compass in designing pedagogical interventions, enabling educators to cultivate cooperative learning environments that promote active engagement, critical thinking, and holistic student growth.

In this research study, the theoretical framework drew upon constructivism and metacognition as foundational theories to inform the investigation into the impact of Flipped Learning on metacognitive skill development.

Constructivism

According to (Schunk, 2017), Constructivism is an epistemological perspective that views learning as an active process of constructing knowledge. Multiple authors support the notion that knowledge is individually constructed within each person, leading to subjective and personal understandings. This process of knowledge construction involves actively building meanings, which aligns with the principles of constructivism described by Good and Brophy (1996).

Constructivism offers a framework for understanding a dynamic process in which students actively participate, communicate and interact with educational content. Lev Vygotsky suggests that knowledge involves a dynamic and interactive process where external information is interpreted by the mind. Then, knowledge is seen as a network of interconnected ideas allowing for diverse ways of acquisition, including problem-solving, which encourages students to explore topics from various perspectives through active participation. The social dimension of learning is emphasized, highlighting their role in facilitating a broader and more effective acquisition of knowledge.

The concept of situated learning highlights the significance of context in knowledge acquisition, particularly in practical skills, where engagement in authentic activities fosters

critical thinking and problem-solving. Additionally, scaffolding is identified as a crucial element in supporting students' learning progress, providing temporary assistance to help them achieve learning goals before gradually withdrawing support as they become more proficient.

Constructivism promotes active learning by suggesting that learners construct their understanding of the world through experiences and interactions. Knowledge is viewed as dynamic and subjective, influenced by individuals' interpretations and social interactions in their environment. These principles collectively emphasize the dynamic and interactive nature of learning, emphasizing the role of active engagement, social interaction, contextual relevance, and structured support in promoting meaningful learning experiences.

Meaningful Learning

(Ausubel, 2002) points out that human learning goes further than a minor change in behavior since it leads to a change in the meaning behind the experience. Therefore, for learning to be meaningful, it is necessary that what has been learned can be related to the individual's knowledge structure in a substantial way and that there is a willingness on the part of the individual to relate what is new to what they already possess.

As stated by (Hernández, 2002), during meaningful learning student relate the new information in a non-arbitrary and substantial way with the knowledge and previous and familiar experiences that they already have in their knowledge or cognitive structure. It is important to consider that individuals' experiences encompass not only cognition but also affectivity; combining both elements could enhance the depth and significance of the experience, enriching its overall meaning.

(Ausubel, 2002) argues that in education, student learning depends on their existing cognitive framework, the concepts and ideas they already possess in a particular field. This

framework interacts with new information, emphasizing the importance for teachers to assess students' prior knowledge to facilitate meaningful learning experiences. Meaningful learning emphasizes the importance of connecting new information with existing knowledge, while active learning focuses on engaging students in interactive and participatory activities.

According to (Díaz Barriga, 2004), individuals may expand or adjust said schemes or restructure them in depth through their engagement in an instructional process. Then, meaningful learning is the construction of new meanings, by making a change in previous knowledge schemes, and in-memory representations, either by activating and applying existing knowledge, introducing new elements, or establishing new relationships between them.

Active Learning

(Bonwell and Eison, 1997) define active learning as a teaching approach that requires students to participate actively from their learning process as opposed to receive information in a passive way. They emphasized the importance of creating a learner-centered environment that encourages student involvement, reflection, and application of knowledge

In active pedagogy, the main differentiating element comes from the identification of learning with action. It is intended to "learning by doing", where the purpose of the school is to prepare for life and nature. The teaching work focuses on the active observation of the students, in the previous preparation of the educational contents, from the simple and concrete to the complex and abstract. The learning and development of individual abilities are guaranteed by allowing the free manipulation and experimentation of each student. The teacher assumes the role of mediator in the teaching-learning processes and as a counselor in the comprehensive training processes of the students.

(Freeman et al., 2014) proposed that educators can bolster language acquisition and foster meaningful language use among EFL students by establishing a learner-centered environment and promoting interactive activities. That is to say, the active methods are those that aim to achieve the development of critical thinking and creative thinking skills since the learning activity is centered on the learner.

Active learning involves student-centered instructional strategies that promote engagement, collaboration, and critical thinking. According to (Chickering, 1987), the significance of engaging students in activities that prompt higher-order thinking, such as discussions, problem-solving, and group work, leading to deeper understanding and retention of knowledge.

Flipped Learning

The integration of active learning methodologies, particularly flipped learning, has garnered significant attention within the realm of education. Introduced by (Bergmann and Sams, 2006) the flipped classroom, or flipped learning, represents a comprehensive approach that redefines group learning from a collective to an individual dimension. It integrates traditional direct instruction with informational resources and constructivist techniques like questions, discussions, or applied activities during class. This methodology transforms the teacher's function from a mere presenter to a facilitator, fostering student-centered learning

According to (Veenman, 2011), flipped learning facilitates the cultivation of metacognitive regulation among students, empowering them to plan, monitor, and evaluate their learning journey. Using technology to deliver pre-class content allows students to revisit materials as required, reinforcing comprehension and aiding in self-assessment. Additionally, collaborative in-class activities foster metacognitive regulation as students engage with diverse

perspectives and approaches, promoting active participation and encouraging the articulation of thought processes, thereby enhancing metacognitive awareness.

(Martín and Chocarro, 2016) assert that the number one goal of the Flipped Classroom model is to foster deep and meaningful learning, along with the development of essential 21st-century skills. Implementation of this methodology has shown to bolster students' dedication to course content and their enthusiasm for enhancing conceptual understanding.

(Talbert, 2017) stated that technology provides the platform for creating and disseminating digital resources, ensuring easy access and consistent delivery of content to all participants Flipped learning makes part of educational technology as it helps to enhance active learning by promoting student-centered approaches, fostering critical thinking and problem-solving skills, and expanding learning opportunities beyond the traditional classroom setting.

Technology provides the platform for creating and disseminating the digital resources needed for the flipped learning approach, thus, ensuring easy access and consistent delivery of content to all participants. The use of technology-mediated resources in flipped learning promotes self-directed learning and personalized instruction. Students have the autonomy to engage with educational content at their own pace, allowing for a customized learning experience that meets their individual needs and preferences. The deliberate combination of individual and collaborative learning modalities in flipped learning supports learners' autonomy and personalization, thereby enhancing their overall learning outcomes.

Pillars of Flipped Learning. Flipped learning has transformed traditional classrooms by prioritizing self-paced learning before class to activate prior knowledge, engaging students deeply with the material, fostering collaborative activities during face-to-face sessions, and developing strong communication skills.

The first pillar is a flexible environment. As teachers, it is crucial to adjust classroom arrangements, modify lessons, structure interactions, and customize assessments to empower learning. This flexibility enables students to choose when and where they engage in the learning process, promoting autonomy.

The second pillar focuses on fostering a learning culture. With flipped learning, students engage in learning both at home and at school, taking charge of their initial learning independently. This approach enriches classroom dynamics by actively involving students in constructing their own learning experiences.

The third pillar is intentional content selection, a critical process for teachers. Despite students' empowerment in their learning journeys, teachers retain the responsibility of curating suitable resources. Before class, teachers deliver videos, infographics, or documents during individual preparatory sessions to facilitate learning. In-class sessions are then planned to incorporate strategies and dynamic activities that promote collaboration, communication, and content construction.

The fourth pillar underscores the role of the professional educator. Building on the planning emphasized in the third pillar, teachers play a reflective role in implementing lessons both inside and outside the classroom. And, this involves making informed decisions on when to intervene to provide feedback, assess learning, and guide students through the learning process.

Educational Technology

In this research, the integration of educational technology as a catalyst for transformative learning experiences in the digital age was explored. Therefore, this theoretical framework draws on the principles of constructivism and connectivism to underscore how technology can facilitate active knowledge construction and foster meaningful connections in the learning process.

In its beginnings, Educational Technology (ET) focused on technological devices used for instructional purposes, today, as a result of globalization and the audiovisual communications revolution, ICT have penetrated all aspects of our lives. Educational technology plays an important role in connecting to active learning by providing tools and resources that facilitate student engagement, participation, and collaboration. It allows for the creation of interactive and immersive learning experiences, enabling learners to actively explore and manipulate content.

In our Colombian context, the article 6 of Law 1341 of 2009, the Ministry of Information and Communication Technologies of Colombia defines the term ICT, as "the set of tools, equipment, computer programs, applications, networks, and media, which allow the compilation, processing, storage, transmission of information such as voice, data, text, video, and images". Regarding education, the actors in the educational process have also undergone strong changes, in the face of the new demands that such a technological revolution has generated. Teachers are no longer the sole carriers of knowledge, today all knowledge is just a click away. (Siemens, 2004) states that understanding the potential of educational technology in promoting transformative learning experiences means preparing students for success in an increasingly digital and interconnected world.

(Levy and Stockwell, 2021) argued that the use of technology in language classrooms fosters learner autonomy and motivation. It provides learners with access to authentic language resources and diverse cultural perspectives, creating a dynamic learning environment.

In this 21st century, teachers are required to possess a series of basic skills and abilities in the management of technical and human resources for pedagogical purposes in order to optimize interactions, and teaching, in order to raise quality standards. The cognitive effects of the application of new technologies in education are promoting the development of specific

cognitive skills, which favors the teaching-learning process. Integrating educational technology into language teaching and learning has the potential to innovate instructional practices, increase learner engagement and motivation, and improve language proficiency. By applying digital tools and resources, this research study proposed to create immersive and interactive learning environments that foster students' autonomous learning, intercultural communication, and global connections.

As (highlighted by Lave, 2000), technology serves as a facilitator of learner-centered pedagogies, promoting autonomy and enabling personalized learning pathways among students, Through the integration of online platforms, learning management systems, or educational apps in EFL classes, teachers can monitor student engagement, track progress, and collect valuable performance metrics. Analysis of this data offers insights into the development of students' metacognitive skills over time, thus offering valuable feedback on the effectiveness of flipped learning implementation.

Virtual Learning Environments. The advent of digital video materials accessible via computers has widened the use of computer-assisted language learning (CALL), underscoring its growing importance in facilitating effective language learning experiences. (Sneha and Nagaraja, 2013) highlight Virtual Learning Environments (VLEs) as digital platforms that enable educators and students to share educational resources, collaborate on activities, and foster interaction. These platforms are versatile, supporting the implementation of complete online courses or enhancing face-to-face instruction through supplementary features.

(Ayres, 2002) highlights the integration of modern technologies into language education, fostering a dynamic environment where educators and students alike leverage a variety of tools, methods, and pathways for effective teaching and learning. This evolution empowers teachers

with expanded options for curriculum design and instructional techniques, while students gain access to diverse learning strategies that enhance their language acquisition process.

Virtual Learning Environments (VLEs) serve as platforms designed to manage the learning process, communicate educational goals, and engage both instructors and learners. These tools support instructional strategies by enabling educators to structure diverse resources and applications for reviewing course content. The primary objective of VLEs is to enhance learning experiences, promoting motivation and extending educational opportunities beyond traditional classroom boundaries.

The integration of text, audio, and video in multimedia formats has established it as a highly effective vehicle for language learning resources, driving the growth of an industry specializing in computer-assisted learning (CAL). (Burston, 2013) observes that certain VLEs are expanding their functionalities to accommodate mobile devices, a development that solidifies their role in language education. This trend highlights the growing significance of Mobile-Assisted Language Learning (MALL) as an essential tool for educators and practitioners aiming to enhance language exposure and learning opportunities.

Metacognition

Metacognition is defined by (Flavell, 1980) as the awareness individuals have of their cognitive processes and related matters, as the understanding and regulation of one's own cognitive processes, is fundamental for effective learning and problem-solving. While, (Mateos, 2001) defines it as the deliberate control of one's cognitive activity. Metacognition empowers individuals to monitor their thinking, identify areas of difficulty, and adapt their strategies accordingly, ultimately leading to improved academic performance and lifelong learning success.

By engaging in metacognitive reflection, students gain insights into their learning strengths and weaknesses, identify effective strategies for learning and problem-solving, and make adjustments as needed to improve their learning outcomes. According to (Splan et al., 2011), the concept of metacognition itself, often defined as reflecting on one's thought processes, involves actively monitoring and evaluating one's own cognitive activities, such as problem-solving, comprehension, and memory.

Metacognitive abilities are essential cognitive skills that enable individuals to actively monitor, control, and regulate their own thinking processes. As stated by (Flavel, 1980), these abilities enable individuals to reflect on their learning strategies, assess their understanding of tasks, and adjust their methods to enhance learning outcomes effectively. Key elements of metacognition encompass self-awareness, where individuals discern their strengths and weaknesses in learning contexts, and self-monitoring, which involves monitoring progress and assessing comprehension during tasks or learning activities.

Reflection involves analyzing one's learning journey and outcomes to identify successful strategies and areas for improvement. Organizational skills aid in structuring information for better understanding and retrieval, while evaluation allows for appraising the efficacy of learning strategies and making necessary adjustments. Planning is crucial as individuals strategize and set goals for learning tasks, choosing suitable methods and resources.

Educators play an important role in fostering these skills through clear instruction, reflective practices, and opportunities for students to engage in meaningful self-assessment and self-regulation. Cultivating metacognitive abilities encourages independent and adaptive learning, thereby improving efficiency, deepening understanding of concepts, and bolstering academic achievement across diverse fields of study.

As stated by (Reid-Martínez et al., 2012), the constructivist approach aims to equip students for lifelong learning by emphasizing that learners are capable of recognizing and understanding their own metacognitive abilities. This awareness enables them to identify areas for improvement and optimize their learning process for better academic performance. In traditional classrooms, educators direct learning tasks, whereas flipped classrooms promote student autonomy. Within the constructivist paradigm, there's an emphasis on active engagement and cognitive processing, which fosters self-awareness and self-regulation.

Metacognition in Elt. In the language classroom, metacognition can be integrated into various instructional activities to enhance learners' language learning experiences. According to (Cohen, 1998), these can be on the form of reflective journals, think-aloud protocols, and metacognitive discussions promote learners' awareness of their thinking processes and foster metacognitive regulation.

Then, to carry out metacognitive control over a process, it is essential to understand it first, in order to be able to execute the task, plan the suitable strategies, and know a way to implement that chosen strategy. Encouraging the development of this conditional knowledge has become the basis for promoting metacognitive reflection.

(Kramarski and Michalsky, 2009) argue that teachers can promote metacognition by fostering reflective practices, encouraging self-regulation, and providing explicit instruction on metacognitive strategies. That is to say, the importance of metacognition in language teaching and learning is rooted in that metacognitive strategies empower learners to monitor and regulate their cognitive processes, enhancing their language learning experiences.

Additionally, metacognition assists in language assessment and supports language teachers in promoting learners' metacognitive development. When integrating metacognitive

practices into language classrooms, educators are fostering learners' metacognitive growth, leading to more effective language acquisition and increased proficiency. The effectiveness of flipped learning in strengthening metacognitive skills could have broader applicability in diverse educational environments, promoting innovative and learner-centered pedagogical practices. In this research study, the integration of educational technology enhances the effectiveness and accessibility of flipped learning by providing students with digital resources and opportunities for interactive and self-directed learning.

This theoretical framework has shed light on the potential of flipped learning activities in enhancing metacognitive skills within EFL classrooms. By implementing flipped learning as a pedagogical approach, educators can successfully nurture metacognitive skills and empower students in their EFL learning process. Additionally, they can take ownership of their learning process, encourages active participation, and facilitate the development of essential metacognitive strategies such as goal setting, planning, monitoring, and reflection.

Conceptual Framework

The conceptual framework for this research investigates the impact of flipped learning on the development of sixth-grade students' metacognitive skills. The transition of responsibility from the instructor to the learner within a flipped classroom highlights the need to identify which metacognitive skills are most significantly enhanced. This investigation is pertinent due to the variability in metacognitive development resulting from the diverse interactive and reflective methods employed in flipped learning environments. Thus, this framework addresses a key research gap while offering valuable insights for refining curriculum development and instructional practices to better support student learning and metacognitive growth.

Independent Variable

Flipped Learning. Flipped Learning, as proposed by (Bergmann and Sams, 2012), serves as the independent variable in the study, involving the delivery of instructional content online before class and interactive activities during in-class sessions. This model alters the traditional classroom dynamic, enabling students to interact with the material before face-to-face sessions, promoting a more active learning experience. As a result, flipping the classroom signifies a shift in focus from teacher-centered to learner-centered approaches, prioritizing active engagement and self-directed learning.

In Flipped Learning, there are two distinct learning settings: group and individual contexts. (Bergmann and Sams, 2012) stated that within the individual space, students interact with pre-recorded materials to grasp key concepts and take thorough notes. Leveraging technology, out-of-class assignments afford learners the autonomy to complete tasks independently, facilitating the development of lower-order thinking skills (LOTS) such as remembering and understanding. On the other hand, the group learning context encourages the application of acquired knowledge through collaborative in-class activities, fostering higher-order thinking skills (HOTS) like analyzing, synthesizing, evaluating, and creating.

Dependent Variable

Metacognitive Skills. The term metacognition, often simplified as thinking about thinking, was coined by (Flavell, 1980), who defined it as knowledge concerning one's own cognitive processes and products or anything related to them. This involves grasping the factors associated with tasks, individuals, and strategies during cognitive activities.

In his work from 1980, Flavell defines cognitive knowledge as understanding one's cognitive strengths, limitations, and factors influencing cognition, including insights into oneself

as a learner and factors affecting performance. According to (Sternberg, 1998), metacognition refers to the ability to reflect on and regulate one's own learning processes. (Kuhn and Dean, 2004) point out that metacognition enables students to apply taught strategies in new contexts, consisting of two main components: knowledge about cognition and monitoring of cognition.

The development of metacognitive skills, including planning, monitoring, and the evaluation of one's learning strategies, serving as the dependent variable, highlights the value of metacognitive abilities in effective learning, empowering learners to set goals, monitor their progress, and adapt their strategies as needed. In the context of EFL education, enhancing metacognitive skills is crucial for promoting deeper understanding and lifelong learning.

Mediating Variables

Technology Integration. Technology significantly impacts second language acquisition (SLA), facilitated by the widespread availability of inexpensive media players and diverse, authentic material accessible online. These resources are invaluable for the development of this project, while also serving as a mediating variable in the integration of technology into Flipped Learning. (Mishra and Koehler, 2006) argue that conventional teaching models traditionally traditional pedagogical knowledge and content knowledge as unrelated aspects.

For this investigation, the researcher aimed to integrate technology to help high school students develop metacognitive strategies. As a result, it was essential to adopt an approach that addresses the interrelated dynamics of technology, pedagogy, and subject matter knowledge. (Mishra and Koehler, 2006) presented the Technological Pedagogical Content Knowledge approach (TPACK), a model where language teachers integrated three essential dimensions of knowledge, including pedagogical, content, and technological understanding, to promote the effective inclusion of technology in the language education program.

As highlighted by (Jang and Chen, 2010), technology use in the classroom can increase student motivation and engagement, providing them with opportunities to develop their skills in a more effective way. Technology facilitates access to instructional materials, interactive exercises, and collaborative learning opportunities, thereby enhancing the effectiveness of Flipped Learning in promoting metacognitive skills.

Constructivist Principles. Constructivist principles mediate the relationship between Flipped Learning and metacognitive skill development. Flipped Learning aligns with constructivist theories by providing opportunities for active learning, meaningful engagement, and knowledge construction. According to (Bergmann and Sams, 2012), Flipped Learning encourages students to construct their understanding through collaborative problem-solving and hands-on activities. This constructivist approach fosters the development of metacognitive awareness by promoting reflection, critical thinking, and self-directed learning.

Within the constructivist framework, learning is viewed as an active, ongoing process aimed at equipping students with problem-solving and critical thinking skills. As stated by (Huang and Hong, 2016), teachers provide students with strategies that empower them for both immediate learning and future academic pursuits. Tus, highlighting the dynamic nature of learning and the transformative potential of socio-constructivist approaches.

The Flipped Classroom model embraces a constructivist approach, emphasizing active student engagement and the use of technology to facilitate higher-order cognitive processes. Teachers take on a facilitator role, guiding students in cognitive strategies and structuring learning around key concepts. This approach not only enhances student learning but also supports teachers in understanding student needs and fostering professional collaboration.

Moderating Variables

Student Characteristics. Variations in students' prior knowledge, learning preferences, and technological adeptness could moderate the impact of Flipped Learning on metacognitive growth. As highlighted by (Harris et al., 2010), metacognition strongly associates with academic achievement across diverse competencies. Therefore, individual traits like English proficiency and tech familiarity may dictate students' interaction with Flipped Learning components, influencing their metacognitive advancement. For instance, those students who are more proficient in technology might navigate online resources adeptly, whereas those less proficient in English may need supplementary assistance to grasp instructional content.

This conceptual framework synthesizes essential theoretical perspectives and variables to explore the intricate connections among Flipped Learning, technology integration, constructivist principles, and the development of metacognitive skills within EFL education. Through investigation of these interconnections, the research aimed to offer significant insights into pedagogical approaches that effectively foster metacognition and elevate language learning achievements.

Research Design

Introduction to the Research Design

(Bautista, 2002) argues that action research finds its genesis within the educational sphere, serving as a counterpoint to pedagogical positivism and entrenched educational methodologies, particularly within adult education contexts. This assertion underscores the significance of action research as a means to challenge conventional educational paradigms and foster innovative approaches to teaching and learning.

This research aimed to investigate the metacognitive abilities that could be fostered through the implementation of a flipped learning methodology. Therefore, the selected research design is connected to the objectives of the study, which centered on unraveling the impacts of Flipped Learning on metacognitive skills. The mixed-methods approach adopted in this study aligned with the multifaceted nature of the research questions, enabling a detailed comprehensive examination of the effects of Flipped Learning. By integrating quantitative and qualitative methods, the research design facilitated an understanding of these effects, capturing both quantifiable outcomes and subjective insights from participants.

Additionally, the mixed-methods design enabled triangulation of data, enhancing the credibility and validity of the findings. Through the simultaneous collection and analysis of quantitative data concerning metacognitive skill progression and qualitative data reflecting participants' viewpoints and experiences, the research framework provided a comprehensive outlook on the subject under investigation. This holistic approach is essential for generating strong conclusions and practical insights that can guide educational practice and policy-making.

Methodological Design

Research Method

This research focused on investigating the potential for improving metacognitive capacities through the adoption of a flipped learning methodology. Specifically, it sought to uncover how flipped learning could enhance metacognitive competencies crucial for fostering deep and meaningful learning experiences in the realm of EFL. By examining its impact, the research aimed to enrich the field of educational research concerning strategies that effectively foster students' cognitive growth and academic achievement across various learning contexts.

In the context of studying the effects of flipped learning on metacognition, action research offers several advantages that make it the best choice for this study. As stated by Kemmis (2009), the goal of Action Research is to add to theory and knowledge and also to facilitate positive changes in practice. That is to say, action research is a systematic approach used by educators and researchers to investigate and improve educational practices in real-life settings.

In this study, the researcher aimed to equip teachers with effective pedagogical strategies which in turn, helped students develop their metacognitive skills. Additionally, the study sought to bridge the gap between conventional language teaching methods and the requirements of the 21st-century learning landscape. As action research emphasizes active involvement and collaboration with the participants, students were active participants in the research process to ensure that the research was more meaningful and relevant to their needs and challenges.

Research Approach

The research methodology employed in this investigation is rooted in a constructivist framework, which according to (Vygotsky, 1978), underscores the significance of active learning

experiences for students to build their individual knowledge based on existing cognitive structures. Within this paradigm, learning is viewed as a dynamic process wherein individuals actively construct their understanding through interactions with their surroundings and social interactions.

In the context of this study, the constructivist approach is particularly pertinent as it resonates with the principles of Flipped Learning, emphasizing student-centered and interactive learning (Bergmann & Sams, 2012). This approach underscores the crucial role of student engagement in the learning journey, with the teacher serving as a facilitator rather than a mere transmitter of knowledge. Through the implementation of Flipped Learning, students were prompted to assume responsibility for their learning, engage in collaborative problem-solving, and reflect on their comprehension of the subject matter.

Additionally, the constructivist framework recognizes that learning is an ongoing and iterative process of knowledge construction (Vygotsky, 1978). Thus, the research methodology in this study emphasizes continuous reflection, evaluation, and adaptation of instructional methods to better cater to the evolving needs of learners. Embracing a constructivist approach, the research aimed to evaluate the immediate impact of Flipped Learning on metacognitive skill development and also enhance understanding of effective pedagogical approaches in EFL education.

Context of the Research

The research took place in a private bilingual school located in Cali, Colombia, a dynamic city renowned for its cultural richness and vibrant atmosphere. Situated in the southwest region of Colombia, Cali highlights a colorful history a lively music scene, and a tropical

climate. The selected school accommodates students from diverse socioeconomic backgrounds, with around 90% hailing from medium to high sociocultural levels.

Known for its dedication to academic excellence, the school takes pride in nurturing a bilingual and multicultural atmosphere that fosters the development of critical thinking skills. The goal of this setting is to provide students with the necessary tools to succeed in today's interconnected and competitive global society. Despite the students' high motivation and academic aspirations, both they and their families have voiced concerns regarding the challenges arising from their limited exposure to authentic language usage and opportunities for language practice.

Within this context, the adoption of Flipped Learning methodology emerges as a promising avenue to elevate the standard of language instruction and foster the cultivation of metacognitive skills among sixth-grade students. Through the integration of technology-based activities, interactive exercises, and collaborative learning opportunities, the study aimed to enable students to claim responsibility of their learning journey and develop into proactive, students become independent and proficient in managing their educational process. Beyond simply enhancing language learning outcomes, the research sought to play a role in equipping students for achievement in a world that is becoming progressively interconnected and competitive.

Population and Sampling Procedures

Sampling Techniques. In this study, purposive sampling was utilized to select participants, a method chosen for its ability to intentionally target individuals possessing specific characteristics relevant to the research objectives. Purposive sampling allows researchers to focus on specific subgroups essential to the study, thereby enhancing the depth of analysis and

comprehension. (Patton, 2002) emphasizes that this approach ensures the selection of a sample highly pertinent to the research question, thereby facilitating a deeper understanding of the phenomenon under investigation.

(Creswell, 2014) notes that purposive sampling involves selecting participants with specific characteristics or qualities pertinent to the research objectives, thereby ensuring the sample's relevance and enhancing the study's validity. For this study, sixth-grade students from a Private Bilingual School in Cali, Colombia, were chosen based on their availability and willingness to participate. This selection process aimed to capture a diverse range of perspectives and experiences among students within the specified context, contributing to a comprehensive analysis of the research topic.

Population. According to (Barrera, 2008) a population as a group of individuals possessing the characteristic or event under study and falling within the inclusion criteria. Similarly, (Balestrini, 2012) characterizes it as a finite or infinite collection of people, cases, or elements sharing common traits. In this study, the population of interest comprised high school students attending a private bilingual school located in Cali.

Situated in an area known for its high socioeconomic status on the outskirts of the city, this school serves a student population of 380, with an average student ratio of 25 per grade. Within this population, the focus is on high school students who represent a diverse array of backgrounds and experiences. This school places a strong emphasis on global learning and family values, striving for academic excellence within a bilingual and multicultural environment favorable for the development of critical thinking skills.

The school's philosophy revolves around empowering members of the educational community to become dynamic agents of change and social transformation, encouraging them to

take control of their own academic learning process. Additionally, in line with the school's philosophy, each student is viewed as a unique individual with their own set of strengths, challenges, and aspirations.

By centering the educational approach around the needs and interests of the students, the school aims to foster a supportive and inclusive learning environment where every learner can thrive academically, socially, and personally. Also, the school's commitment to bilingualism and multiculturalism enriches students' experience by familiarizing them with different points of views and cultural traditions.

Sample. The sample for this research consisted of 24 sixth-grade students, aged approximately 11 to 12 years old, with an equal distribution of 12 girls and 12 boys. Additionally, two English teachers from the high school department participated in the study.

The students' ages and gender distribution were considered to ensure a diverse representation within the sample, allowing for a comprehensive examination of the impact of Flipped Learning on metacognitive skill development across different demographic groups. This particular group was selected based on concerns expressed by both parents and students regarding their English learning process.

Based on information provided by the school coordinators, the students were evaluated using the Cambridge KET for Schools exam last year. The KET exam is designed for individuals at the A2 level of English proficiency. It evaluates their reading, writing, listening, and speaking skills, providing a measure of basic language competency necessary for everyday communication.

Aligned with the CEFR, the designation of an A2 level of English proficiency indicates a basic command of the language. Employing standardized assessments like the Cambridge KET

for Schools ensures consistency and accuracy in assessing the students' language proficiency levels. For this research purposes, this suggested that the students possessed the fundamental skills necessary for basic communication and comprehension in everyday situations.

The findings from this study aimed to enhance the teaching methodology employed by the teachers. Additionally, it sought to pinpoint specific activities that would support and enhance students' metacognitive skills in English.

Ethical Protocol

In the pursuit of scientific inquiry within the realm of EFL research, ensuring the protection of individuals through ethical considerations is imperative for the well-being of research participants. This ethical protocol delineates the principles and procedures adhered to in the investigation of flipped learning and metacognitive skill development in EFL education, with the primary objective of safeguarding the rights and dignity of all involved.

Informed Consent. According to (Easterbrook et al., 2019), informed consent stands as a fundamental ethical principle, guaranteeing that participants possess a comprehensive understanding of the research and make a voluntary decision to participate.

In this research, prior to their involvement in the study, students, teachers, families and school managers were provided with comprehensive information regarding the research objectives, procedures, potential risks, and benefits, as seen in Appendix A. For student participants, a parental consent was issued with informed consent from each individual participant, as seen in Appendix B. In this form each student confirmed and signed their voluntary agreement to participate and acknowledging their right to withdraw from the study at any point without facing any negative consequences.

Confidentiality and Anonymity. (Flick, 2015) states that confidentiality nurtures trust and privacy, creating an atmosphere that encourages honest and open participation. In line with this principle, rigorous measures were enacted to ensure the privacy and trust of all participants throughout the research process.

To safeguard participant identities, the collected data was uploaded to a secure Google Drive folder, which was password-protected to restrict access. Additionally, to maintain anonymity, the data refrained from including the names of both students and teachers. Instead, as seen in Table 1, a coding system was employed to represent individuals, thus reinforcing confidentiality measures.

Table 1

Participants' Information Code System

All students
A.R.E.J.
B.A.M.J.
B.C.D.
B.H.J.D.
B.G.J.F.
C.G.N.L.
C.S.P.A.
D.P.M.
G.H.J.C.
G.R.J.A.
G.T.K.D.
G.M.J.J.
M.G.Y.V.
M.C.C.A.
O.P.P.A.

Q.A.Y.
R.O.X.
R.Q.A.D.
R.L.Y.K.
R.F.O.
S.Q.L.
U.M.M.L.
V.C.F.
Z.G.J.G.

Note. This table shows the list of sixth-grade student's coded names who participated in this research. Own elaboration.

Voluntary Participation. According to (Bryman, 2016), voluntary participation reflects respect for individuals' autonomy and guarantees the absence of undue pressure or influence. This ethical principle is essential in research, as it promotes a sense of empowerment and self-determination among participants.

The study highlighted the voluntary nature of participation, ensuring participants' autonomy and freedom to decline involvement or withdraw at any moment without coercion or adverse repercussions. This method both upholds ethical standards and enhances the validity and reliability of the study's findings. The research fostered a sense of mutual respect and collaboration between researchers and participants, by prioritizing voluntary participation and emphasizing participants' autonomy.

Researcher Integrity. (Polit and Beck, 2017) highlighted the fundamental role of researcher integrity in ensuring the credibility and trustworthiness of research outcomes, thereby fostering confidence in the validity of the findings. The researcher made it a priority to maintain honesty, integrity, and transparency during the entire research process. To maintain integrity, the researcher personally conducted all aspects of the research, from designing and administering surveys to analyzing the collected data.

The researcher ensured that each survey was conducted accurately and ethically, adhering to established research protocols and standards. Additionally, he meticulously reviewed and analyzed the results, ensuring that they accurately reflected the data collected and were not altered or manipulated in any way. Transparency was maintained by providing clear explanations of the research methodology, data collection procedures, and analysis techniques employed.

Ethical Oversight. (Resnik, 2011) highlighted the critical role of ethical oversight as a safeguard to protect participants and maintain high ethical standards, thereby minimizing potential risks and ethical dilemmas. This emphasis on ethical oversight underscores the researcher's commitment to ensuring the well-being and rights of all involved individuals.

To maintain these principles, the research protocol was subjected to a comprehensive review process, which included input and approval from university tutors, school directors, and school coordinators, as seen in Appendix D. This comprehensive review process ensured alignment with ethical guidelines and regulations and also promoted transparency and accountability in the research process.

Additionally, throughout the review process, careful consideration was given to potential ethical implications and strategies for addressing any associated concerns. This proactive

approach further reinforced the ethical integrity of the research and demonstrated a commitment to ethical conduct in EFL research practices.

To sum it up, the ethical protocol outlined above served as a robust framework for the ethical conduct of research on flipped learning and metacognitive skill development in EFL education. By adhering to these ethical principles and practices, the research upheld the rights, dignity, and well-being of all participants while contributing valuable insights to the field of education.

Data Collection Techniques

For conducting this research on the effects of flipped learning on metacognitive skill development in sixth-grade EFL students at a private bilingual school in Cali, Colombia, different data collection techniques were employed. Strategic selection guided the choice of these techniques to gather both quantitative and qualitative data, allowing for a comprehensive understanding of the research question.

Description and Rationale of the Instruments

Various data collection methods were employed to ensure a comprehensive exploration of the research objectives. The combination of quantitative and qualitative data collection methods provided a holistic examination of the research question, capturing both measurable changes in skills and personal experiences and perspectives.

Surveys were employed to gather quantitative data on students' perceptions and experiences with the flipped learning approach. According to (Babbie, 2016), surveys provide a structured format for collecting data from a large number of participants efficiently. Likert scale questions were employed to measure students' attitudes towards flipped learning, their perceived level of engagement, and their level of satisfaction with their learning process.

Additionally, pre and post-tests were utilized to measure changes in learners' metacognitive skills. The pre-test served as an initial assessment of students' metacognitive skills before the implementation of the flipped learning intervention. The post-test, administered after the intervention, sought to evaluate the impact of flipped learning on the development of metacognitive skills. This methodology is in accordance with (Creswell's, 2014) recommendation for using pre and post-tests to assess changes over time.

Qualitative data were gathered through observations and interviews. Class observations were conducted during the flipped learning sessions to compile qualitative data on students' engagement, participation, and their interaction with the instructional materials. These observations provided the researcher with firsthand understanding into the dynamics of the classroom environment, facilitating the recognition of patterns and behaviors relevant to the development of metacognitive skills.

Interviews allowed for an in-depth exploration of participants' experiences, perceptions, and attitudes towards flipped learning and its impact on metacognitive skill development. Open-ended and closed questions enabled participants to provide detailed responses, capturing nuanced insights into their learning journey (Rubin & Rubin, 2011).

The researcher documented the research process in a journal, exploring the influence of flipped learning on the development of metacognitive skills. Journal entries encouraged self-reflection and in-depth analysis, allowing the researcher to express challenges faced during implementation and refine methodologies on the go. Additionally, keeping a journal provided a platform to explore emerging themes and patterns, making it a dynamic space for interpretation and theorizing.

Insights gained from classroom observations and personal reflections deepened understanding, providing valuable perspectives into the research topic. Through the journal, the researcher navigated the complexities of how flipped learning influences metacognitive skills, enhancing comprehension and contributing to the advancement of the field. The selection and correct use of a diverse set of data collection instruments empowered the researcher to conduct a thorough and comprehensive examination of the impact of flipped learning on metacognitive skill development.

Validation Procedures

Validation procedures played a crucial role for ensuring the reliability, validity, and effectiveness of data collection instruments in this study on the impact of flipped learning on metacognitive skill development among sixth-grade EFL students. Before the research began, validation procedures were undertaken to ensure that the instruments were suitable for measuring the intended constructs and that they possessed content validity.

Content validation was conducted to ensure that the data collection instruments accurately captured the key concepts under examination, specifically metacognitive skills and the effects of flipped learning. To validate the content of the instruments, university tutors, the school director, the school principal, and school coordinators were responsible for evaluating the data collection instruments. They were in charge of reviewing each item separately to assess its relevance, clarity, and alignment with the research objectives. Any discrepancies or ambiguities identified during this evaluation process were addressed through revisions and modifications to the instruments.

After content validation, the data collection instruments were pilot-tested with a small sample of students and coordinators from the school. During the pilot testing phase, the

instruments were assessed for their practicality, comprehensibility, and feasibility within the research context. Participants were asked to provide feedback on the clarity of instructions, the appropriateness of response options, and the general applicability of the instruments. Based on the feedback received during pilot testing, some minor modifications were implemented to enhance the clarity and efficacy of the instruments.

Reliability testing was conducted to assess the consistency and stability of the data collection instruments over time. This involved administering the instruments to a sample of participants on two separate occasions and calculating measures of internal reliability and consistency in repeated measures. Higher levels of internal consistency and test-retest reliability indicated that the instruments were reliable measures of the constructs being assessed.

To sum it up, these procedures were essential for guaranteeing the quality, accuracy, and effectiveness of the instruments in evaluating metacognitive skills and the impact of flipped learning. Through careful validation, the researcher was able to enhance the validity and reliability of the instruments, thereby elevating the overall quality of the research findings.

Pedagogical Intervention and Application

The pedagogical intervention described in the provided information adopts a blended learning approach, specifically incorporating flipped learning methodologies within the context of English language education. The application of pedagogical principles such as autonomous learning, as emphasized in the objectives, aligns with Vygotsky's socio-cultural theory, (Vygotsky, 1978), which highlights the importance of student agency and self-regulation in the learning process.

(Park, 2011) argues that by incorporating technology and encouraging students to take responsibility for their learning, the intervention fosters metacognitive awareness and self-

directed learning skills, which are essential components of effective language acquisition. Flipped learning, as described by (Bergmann and Sams, 2012), involves the reversal of traditional classroom activities, with educational content delivered online outside of class, while in-class time is dedicated to interactive and collaborative activities.

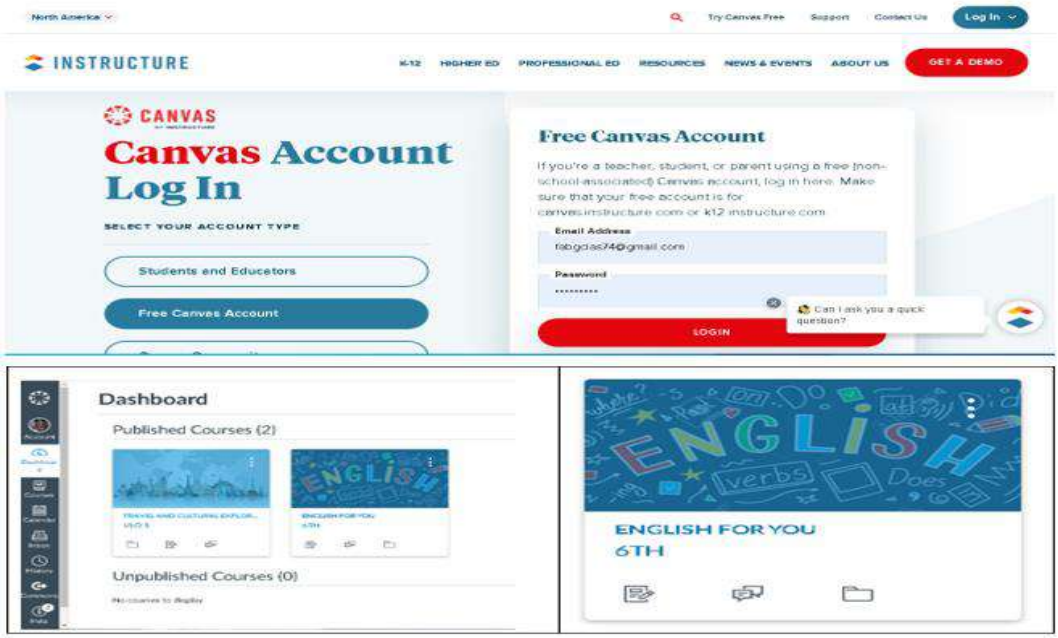
For the purpose of this research, the flipped learning sessions were structured to facilitate student engagement and autonomy through a variety of activities, including interactive online tasks, video watching, textbook exercises, group projects, and assessments.

Instructional Design

For the implementation of the flipped learning sessions, a virtual learning environment was meticulously crafted on CANVAS LMS, as shown in Figure 1. CANVAS is a widely used and user-friendly Learning Management System (LMS) freely available to all participants. The development of this Virtual Learning Environment (VLE) was carefully planned to support and enrich the implementation of a flipped learning approach throughout 18 sessions.

Figure 1

Imagen Screenshots CANVAS VLE Course



Note. This figure shows images of the course created in CANVAS LMS to host all of the materials and activities planned for the flipped learning sessions. *Retrieved from Canvas Instructure* Own elaboration. https://canvas.instructure.com/enroll/E4M9GX

The virtual learning environment in CANVAS LMS was meticulously designed using principles from constructivist, social cognitive, and cognitive load theories, and the environment aimed to enhance student engagement, foster metacognitive skill development, and improve language proficiency outcomes.

By integrating effective instructional strategies such as flipped learning and authentic assessment, the design aimed to optimize teaching and learning experiences. This comprehensive approach facilitated effective educational practices and also contributed significantly to advancing research in the intersection of EFL education and metacognitive development.

The validation process involved multiple participants and methods to ensure the credibility and reliability of the virtual learning environment. Initially, a panel of experts which included the academic coordinator and the principal from the school, researcher's fellow partners from ICESI University in Cali, and the researcher's thesis advisor reviewed the environment's alignment with theoretical frameworks and educational standards.

Once the Virtual Learning Environment (VLE) in CANVAS LMS was approved by the panel of experts, a pilot testing was conducted. A chosen group of 10 students from 7th-grade students, the academic coordinator and the principal from the school, researcher's fellow partners from ICESI University and the researcher's thesis advisor participated in the piloting.

This process helped to identify potential technical issues, usability concerns, and instructional gaps that could be addressed before full-scale implementation. Additionally, feedback from the panel of experts provided valuable insights into optimizing student engagement, instructional strategies, and assessment methods within the flipped learning environment.

The involvement of experts in reviewing and piloting the VLE in CANVAS LMS enhanced this research's validation and credibility. Experts ensured alignment with theoretical frameworks, rigor in methodology, identification of biases, and optimization of educational effectiveness. Their participation strengthened the robustness and reliability of the research outcomes, thereby enriching its contribution to the fields of EFL, flipped learning, and metacognition.

Upon thorough reading, analysis, and reflection on the four pillars of Flipped Learning (flexible environment, learning culture, intentional content and professional educator), it is evident that each one of them plays a vital role in this research. The flexible environment was

facilitated by planning lessons and designing material on the CANVAS LMS platform, allowing students the autonomy to choose when and where to access content. Additionally, students had the opportunity to revisit these materials at any time, even after in-class sessions, to enhance their understanding.

Activities were designed to accommodate to various learning styles and preferences, ranging from interactive online tasks to group projects and discussions. This comprehensive approach turned CANVAS LMS into a dynamic center for collaborative learning providing a centralized and easily accessible platform for students and teachers alike to access course materials, participate in meaningful interactions, and enhance their learning experience. CANVAS LMS, like other LMS platforms, aims to provide a centralized hub for delivering educational content, facilitating communication and collaboration, and supporting assessment and learning analytics to enhance the educational experience for both instructors and students.

In the contemporary educational landscape, Learning Management Systems (LMS) have become indispensable as they overcome traditional learning constraints such as time and location. (Adzharuddin et al., 2012) note that LMSs have long been employed for organizing educational materials, monitoring user progress toward set objectives, and managing learning content. Advances in technology have significantly enhanced LMS capabilities, allowing instructors to engage with students through various methods like note sharing and online discussions. Additionally, LMSs provide teachers with valuable insights into students' learning trajectories. This perspective is supported by (Basioudis et al., 2012), who emphasize that technological progress has greatly benefited the development and functionality of LMS in the educational realm.

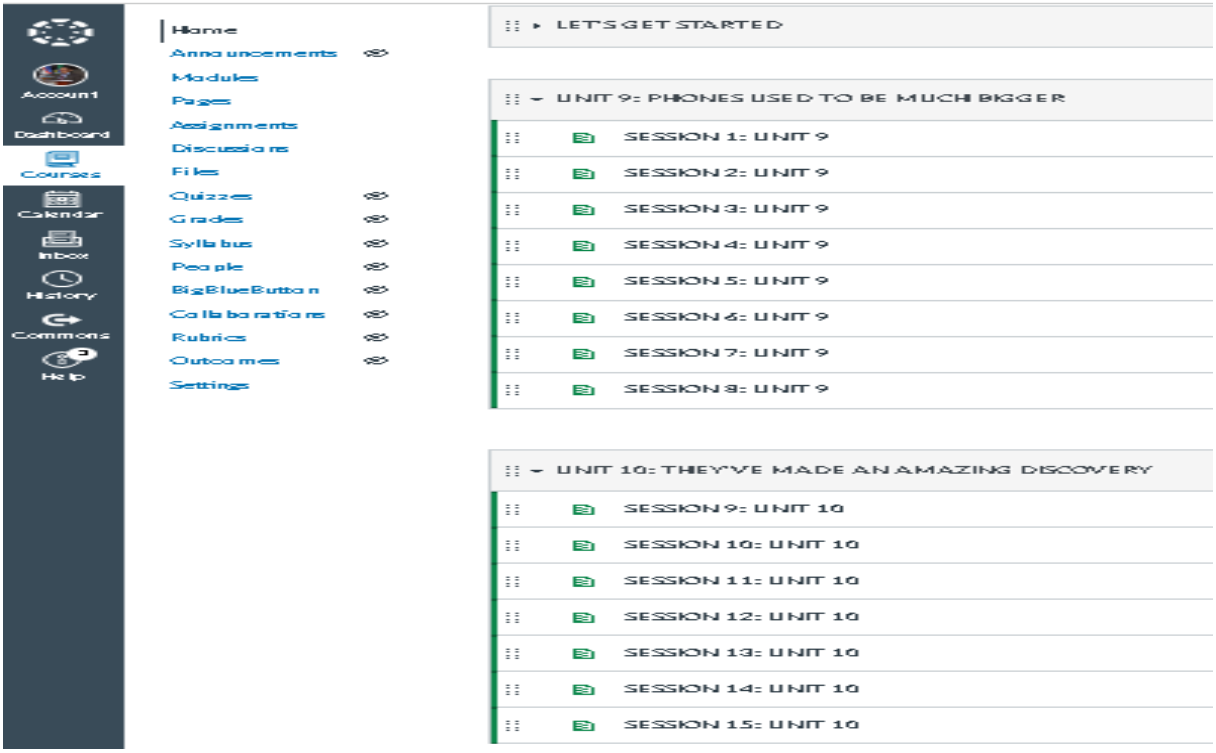
For this research, eighteen (18) sessions of flipped learning were designed and implemented to investigate its impact on metacognitive skill development in 24 sixth-grade students at a private bilingual school. Each session was structured to actively involve students in their learning process with the use of a blend of videos which served as captivating instructional aids, while explanations offered clarity and in-depth insights.

Activities included interactive videos for independent study, followed by reflective in-class exercises. Discussion forums promoted peer interaction and critical thinking, while quizzes and self-assessments offered continuous feedback. Virtual classrooms facilitated real-time discussions and concept clarification. Each activity aimed to harness CANVAS LMS's features to enhance student engagement, and improve language proficiency within an innovative educational framework.

Special spaces were designated for student reflection and collaborative activities, fostering a sense of ownership and camaraderie. Students were encouraged to share their ideas and viewpoints, facilitating peer-to-peer learning and enriching their learning process. Interactive activities were strategically designed to encourage students to apply their comprehension and reinforce fundamental concepts, as shown in Figure 2.

Figure 2

CANVAS Course Layout

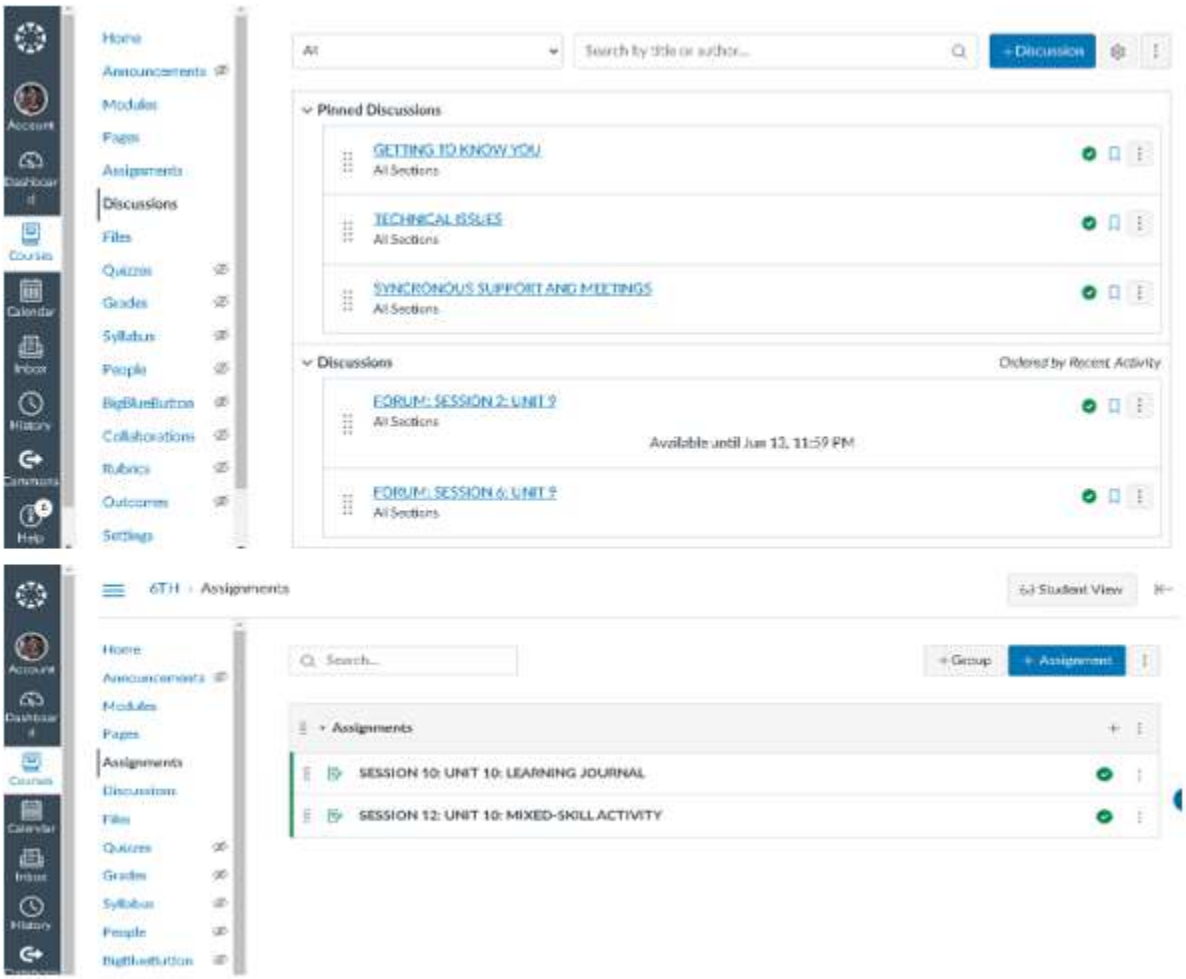


Note. This image shows the distribution of the activities and materials used for the flipped learning sessions on the CANVAS LMS used in this research. *Retrieved from Canvas Instructure.* Own elaboration https://canvas.instructure.com/enroll/E4M9GX

To guarantee its functionality and promptly resolve any technical challenges, a designated forum where students could report issues and request assistance was made available, as shown in Figure 3. Additionally, students had direct access to the teacher for additional explanations and support, ensuring that their learning needs were effectively met. The platform helped in empowering students to take charge of their learning journey and achieve outstanding academic performance.

Figure 3

CANVAS Course Sections



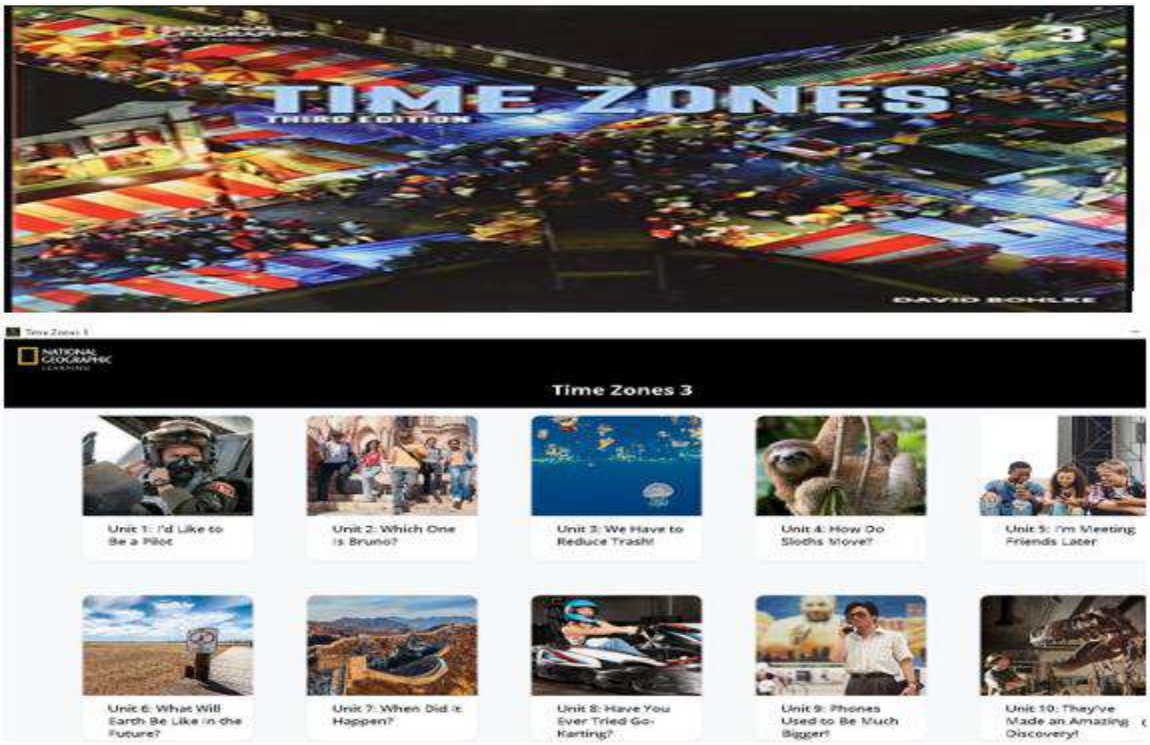
Note. This picture depicts the structure and distribution of the CANVAS course created to host the materials and activities used during the flipped learning sessions. *Retrieved from Canvas Instructure.* Own elaboration. https://canvas.instructure.com/enroll/E4M9GX

The instructional textbook used for the course is, "Time Zones 3" by National Geographic Learning, as shown in Figure 4. This book series has been implemented by the school for the past three years. "Time Zones 3" was designed to expose students to diverse cultures, perspectives, and global issues through its thematic units. By immersing students in

real-world topics and fostering an understanding of global interconnectedness, the book enhances language skills and fosters intellectual development. These features align directly with the school's philosophy, which aims to cultivate global citizenship and curiosity among students.

Figure 4

Screenshots. Textbook Time Zones 3. By National Geographic Learning



Note. These are images of the cover page and the distribution of units from the textbook Times Zones 3 by National Geographic Learning adopted by the school. Own photo.

Every flipped learning session was carefully organized to align with the objectives of the corresponding unit in the Time Zones 3 textbook. The textbook consists of 12 structured thematic units, and as per internal data sourced from the Bilingual School, these units are intended to be meticulously explored throughout the span of the academic year, totaling approximately 10 months or 40 school weeks. In the context of this bilingual school, the

academic year is structured into three distinct academic periods. The initial academic period spans four months, encompassing September through December. Subsequently, the second and third academic periods each extend over three months.

Thus, the second academic period extends from January to March, while the third academic period spans April to June. This organizational framework delineates the temporal structure of the academic year, facilitating efficient planning and execution of educational activities. The delineation of these academic periods as shown in Table 2, allocates teachers to cover textbook contents (Time Zones 3) as follows: the first period focuses on units 1 through 4, the second period on units 5 through 8, and the third period on units 9 through 12. Such a structured distribution ensures comprehensive engagement with the material, fostering a conducive learning environment within the academic curriculum.

Table 2

Scholarly Progression Framework

Academic Period	Month	Units to be Covered
First	September	1 to 4
	October	
	November	
Second	December	5 to 8
	January	
	February	
	March	
Third	April	9 to 12
	May	
	June	

Note. This chart shows the distribution of the Academic periods and the textbook units that must be covered within those times. Own elaboration.

Keeping in mind that this research sought to explore how the implementation of a flipped learning methodology could enhance metacognitive abilities, the implementation of the flipped learning sessions and its activities were aligned with the topics and learning objectives outlined in units 9 and 10 of the textbook.

The school adopted the Presentation-Practice-Production (PPP) model as its instructional design framework. (Richards, 2018) emphasizes the need for balance and flexibility in lesson planning and underscores the practicality and effectiveness of the PPP model in promoting language acquisition and proficiency. This model emphasizes a structured approach to language learning, comprising three stages: presentation, practice, and production.

In the presentation stage, new concepts are introduced through explanation and demonstration, enabling students to understand the language's form, meaning, and use. Subsequently, the practice stage emphasizes consolidating understanding through guided activities. Finally, the production stage encourages students to apply the language or skills in meaningful and communicative activities.

(Ellis, 2003) highlights that this stage typically involves controlled practice activities, such as drills, exercises, or guided tasks, which allow students to manipulate the language in a structured environment. By integrating this framework into the flipped learning sessions, students were offered a structured learning experience that supported comprehension, practice, and application of language skills. (Richards and Rodgers, 2014) point out that the PPP approach offers a clear and logical structure, aiding teachers.

English instruction at the school follows a structured format, with sessions lasting 40 minutes each. As shown in Figure 5, the school has organized their classes around the PPP

model. These classes are organized into blocks spanning two academic hours, and the curriculum is designed for a weekly intensity of four classes.

Figure 5

School Activity Schedule per Unit.

CLASS PACING			Montessori	
PROCEDURE				
STAGES	**STEPS**		**TIMING (MINUTES**	**TOTAL (MINUTES)**
PRESENTATION	INTRODUCTION		20	60
	REPRODUCTION		20	
	EMULATION		20	
PRACTICE	**MOMENT 1**	GRAMMAR	70	240
	MOMENT 2	LISTENING	50	
	MOMENT 3	READING	60	
	MOMENT 4	WRITING	60	
PRODUCTION	**MOMENT 5**	SPEAKING	60	60
			TOTAL TIMING (MINUTES)	**360**

Note. This image provides information about the timing and stages that must be followed to teach each of the units from the school textbook. Own photo.

Additionally, the school has meticulously designed a schedule in which each unit of the assigned academic text is scheduled for in-depth exploration over a two-week period. That is to say, that the total timing for the entire class session per unit is 360 minutes, to ensure a balanced and comprehensive approach to language learning across listening, speaking, reading, writing, and grammar skills.

As an external party, the researcher was required to follow the school's selected Presentation-Practice-Production (PPP) approach, ensuring that activities were synchronized with the predetermined timing for each unit. This adherence to the PPP model aimed to provide a planned learning experience for students. Also, he needed to adjust to the school's schedule,

smoothly integrating activities within the established framework to minimize disruptions to the students' regular routine and optimize their learning outcomes.

Development of Application

The research aimed to determine the impact of implementing flipped learning on the enhancement of metacognitive abilities among sixth-grade students. The research focused on flipped learning sessions because they represent a transformative approach to traditional education. Flipped learning redefines the classroom dynamic by delivering instructional content outside of class, typically through digital platforms, and utilizing in-class time for interactive activities like discussions, problem-solving, and practical application of knowledge.

According to (Bergmann and Sams, 2012), this method is particularly pertinent in modern educational settings as it aims to enhance student engagement, foster active learning, and cultivate higher-order thinking abilities. By moving direct instruction outside of class, flipped learning encourages students to assume greater responsibility for their own learning journey while enabling educators to tailor instruction to meet individual student needs more effectively.

The development of the application involved extensive planning and coordination to ensure alignment with the school's curriculum, pedagogical objectives, and its technological infrastructure. In Annex C are detailed the different sessions of the flipped learning initiative conducted in English classes.

The school textbook in Unit 9 explored the theme of "Old and new technology," and students were engaged in discussions about changes in their lives, narrating past events, and fostering the exploration of obsolete technologies and gadgets. Students were directed to their CANVAS VLE to access interactive tasks at home to prepare for class. Once in class, they were asked to participate in lively discussions, collaborate on group projects, and prepare

presentations, all designed to deepen their comprehension while simultaneously refining their meta-cognitive skills.

Also, the textbook in Unit 10, centered on Inventions and discoveries and it provided students with opportunities to discuss recent events, recount recent actions, and explore recent discoveries. Likewise, students made use of the CANVAS VLE to access preparatory materials at home, all intended to stimulate their critical thinking and reflection. The in-class sessions included stimulating discussions, interactive activities, and group research projects.

Throughout the implementation sessions of flipped learning, instruction was exclusively delivered in English, eliciting a positive response from students who actively engaged and demonstrated comprehension. Additionally, technology played a crucial role in enabling students' autonomous learning during these sessions. As stated by (Johnson et al., 2016), students were able to use online resources, multimedia materials, and digital tools to access instructional content, collaborate with peers, and complete assignments outside of class time.

In summary, during the flipped learning sessions, students cultivated the habit of reviewing materials and completing assignments independently at home, preparing themselves for class. In class, they actively applied the knowledge acquired, consolidated their understanding of the contents and also, improved their ability to reflect on their learning processes.

Data Analysis

Introduction to Data Analysis and Findings

As highlighted by (Creswell, 2014), the data analysis needs to be conducted iteratively to ensure the comprehensiveness of the study findings. In this research, a thorough data collection approach was utilized throughout the research period. With all the gathered data at hand, the researcher analyzed patterns, trends, and correlations using rigorous techniques. This analysis intended to draw meaningful conclusions and offer recommendations for improving the efficacy of EFL instruction.

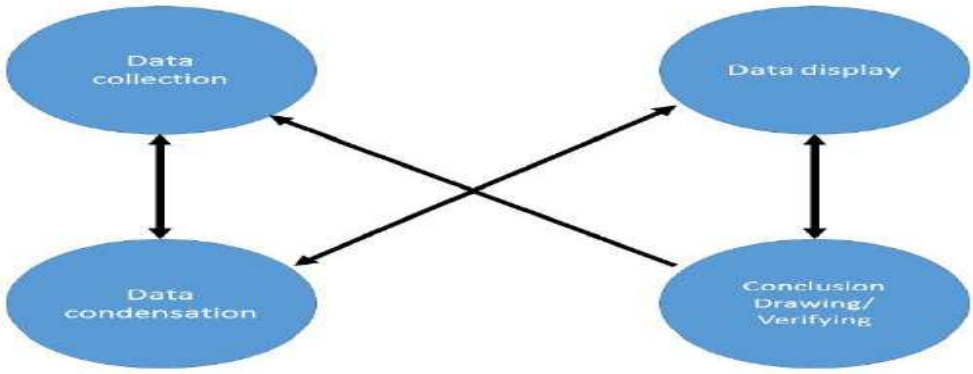
Data Management Procedures

Analyzing collected data is essential for researchers to uncover meaningful insights and test their hypotheses. Through analysis, raw data is converted into actionable information, highlighting patterns, trends, and relationships that lead to informed conclusions. This systematic examination allows researchers to verify the accuracy and reliability of their results, identify key variables, and evaluate theoretical models. Such analysis is vital for deriving evidence-based conclusions, making well-informed decisions, and advancing knowledge within a field.

Additionally, thorough data analysis ensures that research findings are supported by empirical evidence, thereby enhancing the study's credibility and its contribution to the academic community. The objective of data analysis is to make sense of the participants' opinions in a meaningful manner. As suggested by (Miles et al., 2014) there are four "nodes" of data analysis: data collection, data condensation, displaying of data, and conclusion drawing/verification, as shown in Figure 6. During the course of a research study, these four nodes interact simultaneously with each other.

Figure 6

Nodes of the Data Analysis



Note. This image provides information about the procedure to be followed when analyzing data collected in research. Components of data analysis: Interactive model. By M.B. Miles. *Qualitative Data Analysis*. p.26. https://vivauniversity.wordpress.com/wp-content/uploads/2013/11/milesandhuberman1994.pdf

The researcher navigated between data collection nodes, concurrently conceptualizing emerging codes and condensing information. A structured approach was employed for analysis and it unfolded in a series of deliberate steps. Initially, the data underwent meticulous examination to unveil recurring themes, which were then simplified into codes. These codes were subsequently condensed further, facilitating a more focused examination of related concepts.

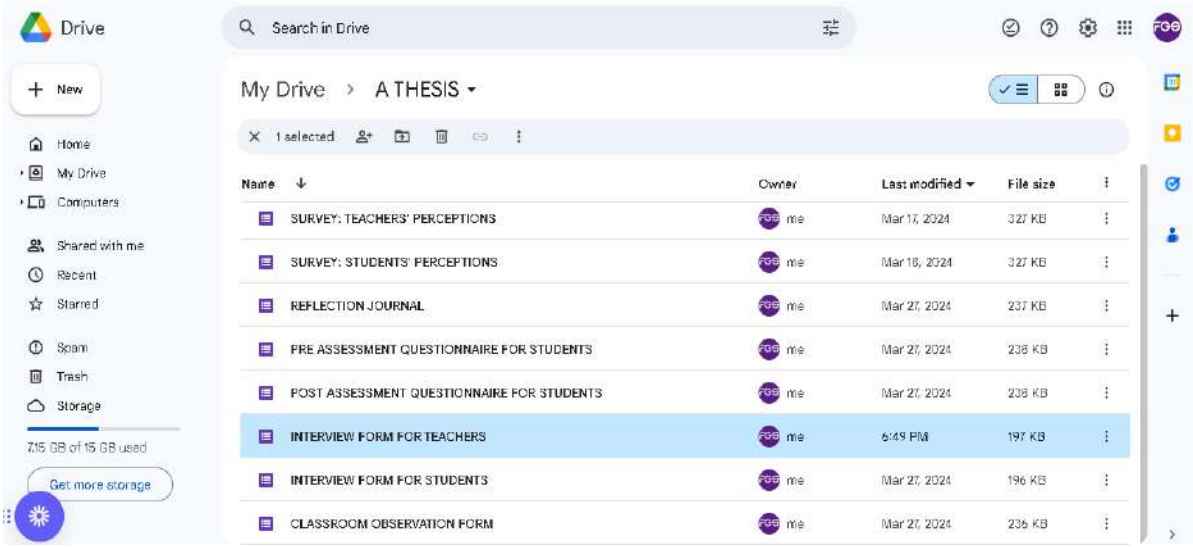
With the aim of enhancing clarity and insight, the condensed codes were then organized into visually accessible formats. Finally, through careful interpretation, the relationships between codes were carefully examined, revealing overarching themes and culminating in profound conclusions. These systematic steps were indispensable in understanding the efficacy of the

flipped learning model, shedding light on key themes and patterns that emerged from the data analysis.

In this study, a variety of instruments were developed and utilized to collect data from participants, encompassing both quantitative and qualitative data. To ensure quality, security, and clarity, all instruments were converted into Google Forms, as shown in Figure 7. These included surveys on students' and teachers' perceptions of teaching-learning processes, pre- and post-assessment questionnaires for students, a researcher-maintained reflection journal, classroom observation forms, and interview forms for both teachers and students.

Figure 7

Screenshot. All collection instruments host in a Google Drive



Note. This figure shows images of the Google Drive created to host all of the data collection instruments used during this research. Own elaboration.

https://drive.google.com/drive/folders/10NIrF1xcSeY24eDzF1-qKAE2gzNsjB2M

(Smyth et al., 2020) underscore the significance of employing surveys as a structured method for gathering quantitative data, enabling researchers to evaluate perceptions, preferences,

and challenges. This study utilized surveys to investigate students' and teachers' viewpoints and attitudes towards various instructional aspects. These surveys assessed their perceptions of teaching methods, learning activities, classroom environment, and the overall effectiveness of teaching process. Pre- and post-assessments, administered via Google Forms before and after instructional interventions, measured participants' cognitive and metacognitive awareness.

The pilot testing of data collection instruments involved School Coordinators and a diverse sample of 8 high school students. Cronbach's alpha was calculated to evaluate the reliability and internal consistency of the data collection instruments. As (Kimberlin and Winterstein, 2018) point out, reliability refers to an instrument's capacity to generate identical outcomes when applied repeatedly. The Cronbach's alpha results showed promising levels of reliability for all instruments: Students' Perceptions about Teaching-Learning Processes ($\alpha \approx 0.8029$), Teachers' Perceptions about Teaching-Learning Processes ($\alpha \approx 0.8216$), Pre-Assessment Questionnaire for Students ($\alpha \approx 0.8407$), and Post-Assessment Questionnaire for Students ($\alpha \approx 0.8407$).

The reliability determined by Cronbach's alpha confirms the credibility and dependability of the results obtained from a group of students as they consistently generate diverse outcomes. These alpha coefficients indicated potential consistency upon further administration, enhancing study replicability and reinforcing the research conclusions' validity. Comprising data collected from surveys and assessment tests, was constructed using Microsoft Excel spreadsheet and processed through IBM SPSS software to determine the results of this research work.

Qualitative data on instructional strategy implementation and effectiveness were collected using classroom observations, documented in Google Forms. Interviews with students and teachers provided individual perspectives on their teaching-learning experiences.

Additionally, a reflection journal maintained by the researcher documented personal observations and methodological considerations, guiding ongoing analysis. Classroom observations were carried out continuously during the implementation phase to gather real-time insights into instructional practices. Concurrently, journal entries were created to document ongoing reflections and methodological considerations as the implementation unfolded.

At the culmination of the study, post-tests were administered to measure outcomes, complemented by interviews to explore participants' experiences and perspectives. This systematic approach ensured a comprehensive exploration of the research phenomenon, supporting thorough analysis and conclusive findings.

Results

Quantitative Results

The survey on students' perceptions of their teaching-learning process was distributed to the 24 sixth-grade students. All 24 surveys were completed, reflecting a 100% participation rate among the students, as shown in Table 3. According to (Larsen-Freeman, 2003) quantitative analysis serves as a complementary approach, allowing researchers to systematically examine relationships between variables and draw generalizable conclusions.

Table 3

Results Students' Perceptions About Teaching-Learning Perceptions Survey

Students' perceptions about teaching-learning processes					
Items	Scale				
	1	2	3	4	5
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	6	11	2	5	0

1. The content taught in class aligns with my learning goals.	25,0	45,8	8,3	20,8	0,0
2. The teaching methods used in class are engaging and effective.	**6** 25,0	**14** 58,3	**0** 0,0	**4** 16,7	**0** 0,0
3. I feel actively involved in the learning activities.	**4** 16,7	**13** 54,2	**0** 0,0	**7** 29,2	**0** 0,0
4. The feedback I receive on my assignments helps me understand my strengths and weaknesses.	**2** 8,3	**13** 54,2	**3** 12,5	**5** 20,8	**1** 4,2
5. The class environment promotes collaborative learning among students.	**3** 12,5	**8** 33,3	**2** 8,3	**11** 45,8	**0** 0,0
6. I believe the teaching methods enhance my critical thinking skills.	**11** 45,8	**10** 41,7	**0** 0,0	**3** 12,5	**0** 0,0
7. The class encourages me to ask questions and seek clarification.	**3** 12,5	**9** 37,5	**1** 4,2	**10** 41,7	**1** 4,2
8. The pace of the class allows me to comprehend and retain information effectively.	**1** 4,2	**15** 62,5	**2** 8,3	**6** 25,0	**0** 0,0
9. I can connect what I learn in class to real-world applications.	**4** 16,7	**14** 58,3	**0** 0,0	**6** 25,0	**0** 0,0
10. I am satisfied with the teaching-learning processes in this class.	**2** 8,3	**12** 50,0	**2** 8,3	**8** 33,3	**0** 0,0

Note. This table shows the results of the initial survey on the perceptions of the students who participated in this research about their learning process. Own elaboration.

The substantial participation rate reflects students' active involvement with the survey, indicating their eagerness to contribute. This significant engagement strengthens the reliability

of the survey results, enriching the research with varied viewpoints and securing a comprehensive understanding of students' experiences in their teaching-learning process.

Quantitative data analysis was initiated by utilizing descriptive statistics to delineate the central tendencies and dispersion measures characterizing the respondents' perceptions. Frequencies, percentages, means, and standard deviations were computed to afford a comprehensive portrayal of the prevailing sentiments. For the quantitative data analysis, descriptive statistics for each item concerning students' perceptions about teaching-learning processes were calculated.

As outlined by (Cox, 2000), pivotal concepts such as central tendencies (mean, median, mode) and dispersion measures (standard deviation, range) play a crucial role in summarizing and understanding the distribution of responses within data analysis. These statistical tools facilitate the interpretation of numerical data and provide a framework for facilitating the interpretation and understanding of empirical data.

The data offered different insights into students' perceptions of teaching-learning processes. Mean, median, and mode showed where majority people's answers fall for each statement, as shown in Table 4 and in Figure 8, the mean values ranged from 2.18 to 3.67, showing that students’ opinions differed across the 10 statements.

Table 4

Descriptive Statistics of Students' Perceptions on Teaching-Learning Processes

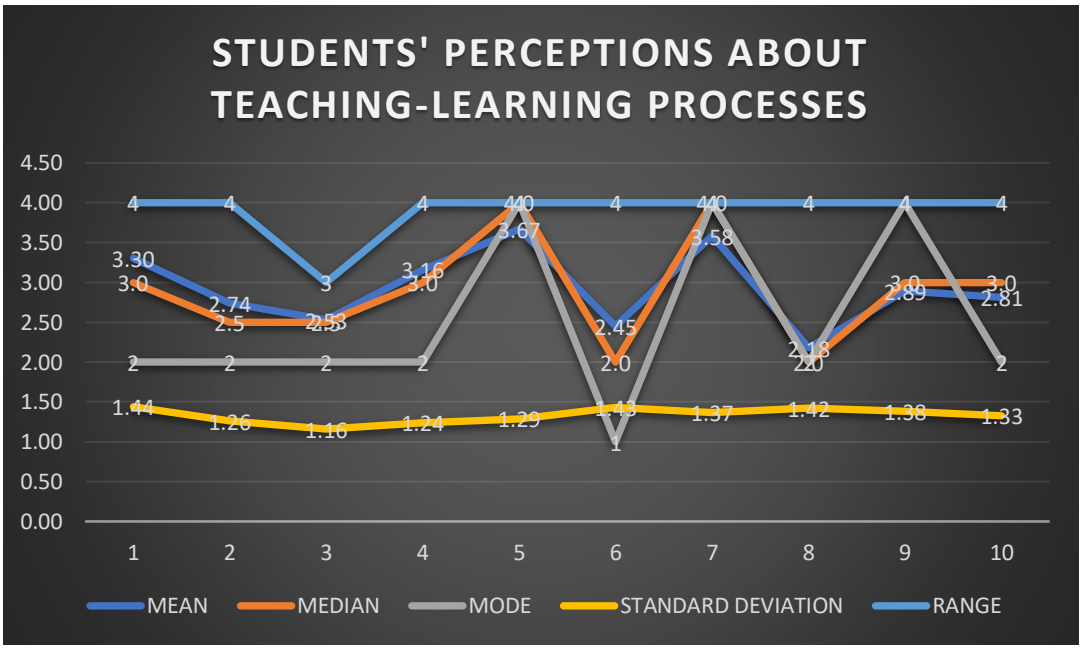
Statement	Mean	Median	Mode	Standard deviation	Range
1	3,30	3,0	2	1,44	4
2	2,74	2,5	2	1,26	4
3	2,53	2,5	2	1,16	3

4	3,16	3,0	2	1,24	4
5	3,67	4,0	4	1,29	4
6	2,45	2,0	1	1,43	4
7	3,58	4,0	4	1,37	4
8	2,18	2,0	2	1,42	4
9	2,89	3,0	4	1,38	4
10	2,81	3,0	2	1,33	4

Note: In the Table, it can be seen the descriptive statistics of students' perceptions on teaching-learning processes. Own elaboration.

Figure 8

Image of Statistics Perceptions About Teaching-Learning Processes



Note. This figure shows images of the analysis of the students' perceptions on teaching-learning processes Own elaboration

Median values were close to the means, meaning responses were spread out evenly. Modes varied, with some statements having a clear favorite answer and others showing more

mixed opinions. Standard deviation showed how dispersion of the answers were around the average. Higher standard deviations suggested more dispersed answers, while lower ones indicated more agreement.

The standard deviations ranged from 1.16 to 1.44, showing that opinions differed moderately to quite a bit across the statements. The range is the difference between the highest and lowest scores for each statement. A bigger range reflects more variability in responses. In this dataset, all statements have a range of 4, indicating answers cover a similar range of values for each statement. The data suggested that perceptions on teaching-learning processes varied across different statements, with some statements eliciting more consistent responses than others.

As shown in Table 5, the frequency data illustrates students' perceptions regarding multiple elements of the teaching-learning processes within their EFL classroom.

Table 5

Frequency Table of Students' Perceptions on Teaching-Learning Processes

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	6	11	2	5	0
2	6	14	0	4	0
3	4	13	0	7	0
4	2	13	3	5	1
5	3	8	2	11	0
6	11	10	0	3	0
7	3	9	1	10	1
8	1	15	2	6	0

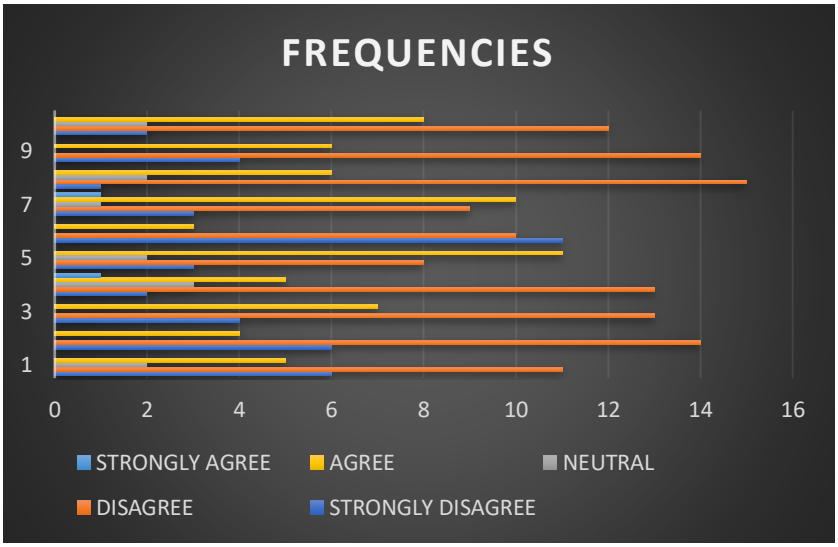
9	4	14	0	6	0
10	2	12	2	8	0

Note. This table shows the frequencies of answers from the survey conducted to sixth-grade students about their teaching and learning process. Own elaboration.

Taken together, it unveiled a multifaceted panorama of viewpoints and attitudes. A portion of students expressed satisfaction with aspects such as feedback on assignments, promotion of collaborative learning, and encouragement of inquiry and clarification, as shown in Figure 9. Alternatively, some students held reservations or expressed clear dissatisfaction. It seems there was an evident gap between the perceived effectiveness of teaching methods and their engagement level, with a significant number of students expressing disagreement regarding both.

Figure 9

Frequency Table of Students' Perceptions on Teaching-Learning Processes



Note. This figure shows the analysis of the frequencies of answers from the survey conducted to sixth-grade students about their teaching and learning process. Own elaboration.

Additionally, the alignment of class content with learning goals and the pace of instruction were areas of concern, as highlighted by the considerable number of students who disagreed or strongly disagreed. However, despite these differences there were areas of agreement, particularly concerning students' ability to connect classroom learning to real-world applications. This indicates that while specific aspects of the teaching-learning processes may not meet students' expectations, there were factors that connected positively with their learning experiences.

In conclusion, the data highlighted the importance of addressing the diverse needs and preferences of students, promoting an environment that stimulates active engagement, and continuously enhancing teaching strategies to optimize the learning achievements in the EFL classroom.

Analysis Teacher's Survey. The survey administered to the high school English teacher on his perceptions about teaching-learning processes was a critical component of this research. His role as the English teacher made his responses essential. By gathering data from him, the researcher gained a comprehensive understanding of the perceptions and experiences specific to English language instruction at the high school level.

The responses to each one of the questions of the survey are represented in Table 6. His input was integral to the research, offering valuable perspectives that informed our understanding of teaching practices and student learning outcomes.

Table 6

Results Teacher's Perceptions About Teaching-Learning Process Survey

Teachers' perceptions about teaching-learning processes					
Items	scale				
	1	2	3	4	5

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. The instructional methods I use effectively engage students in the learning process.	**0** 0,0	**0** 0,0	**0** 0,0	**0** 0,0	**1** 100,0
2. I resort to adequate support and resources to plan my lessons.	**0** 0,0	**0** 0,0	**0** 0,0	**0** 0,0	**1** 100,0
3. I use students' feedback for adjusting and improving my teaching methods.	**0** 0,0	**0** 0,0	**0** 0,0	**1** 100,0	**0** 0,0
4. The class environment encourages students to ask questions and seek clarification.	**0** 0,0	**0** 0,0	**0** 0,0	**1** 100,0	**0** 0,0
5. The content I teach aligns with the learning goals of the curriculum.	**0** 0,0	**0** 0,0	**0** 0,0	**0** 0,0	**1** 100,0
6. I feel confident in my ability to enhance students' critical thinking skills.	**0** 0,0	**0** 0,0	**0** 0,0	**1** 100,0	**0** 0,0
7. I make use of all of the activities provided in the textbook.	**0** 0,0	**0** 0,0	**0** 0,0	**0** 0,0	**1** 100,0
8. Assessments accurately reflect students' understanding of the material.	**0** 0,0	**0** 0,0	**0** 0,0	**0** 0,0	**1** 100,0
9. I make use of technology in teaching to enhance students' learning experiences.	**0** 0,0	**1** 100,0	**0** 0,0	**0** 0,0	**0** 0,0
10. The class fosters a positive and inclusive learning environment.	**0** 0,0	**0** 0,0	**0** 0,0	**1** 100,0	**0** 0,0

Note. This table shows the representation of the answers given by the teacher about his perceptions on the teaching-learning process. Own elaboration.

Through a structured questionnaire, the teacher provided feedback on ten key items, ranging from the alignment of content with the learning goals to the satisfaction with the overall teaching-learning processes. and they indicated a consistent pattern of agreement across various aspects of teaching practice in EFL teaching. As shown in Table 7, mean, median, mode, and standard deviation values, all identical at 0.10 and 0, respectively, suggest a high level of consensus among respondents. (Figure 10).

Table 7

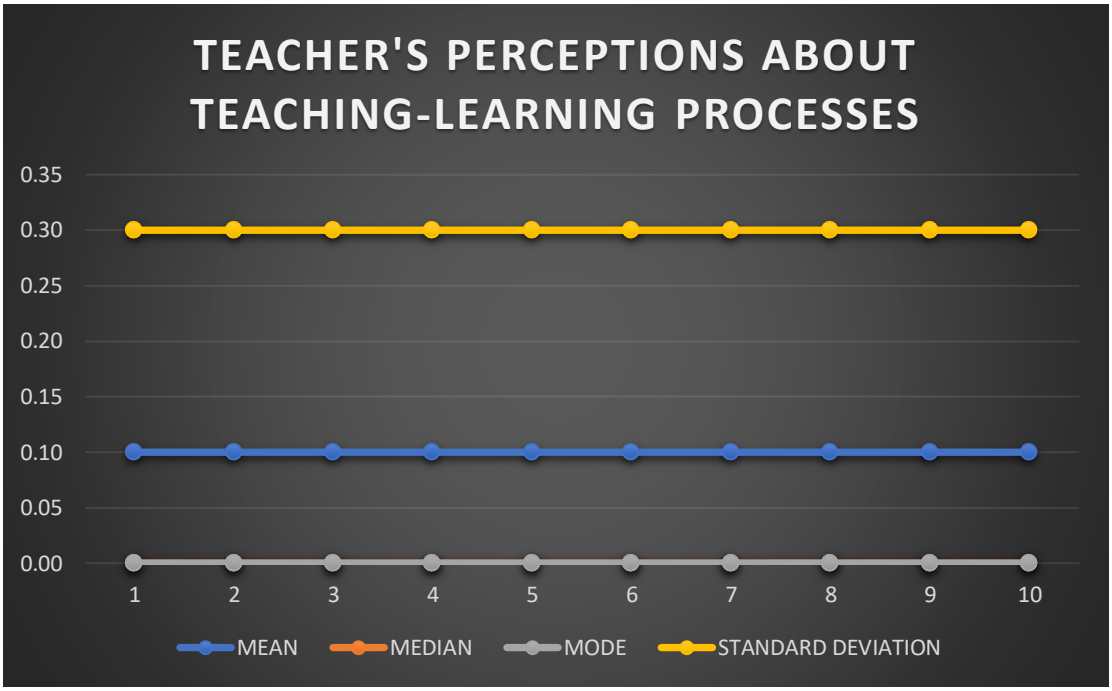
Descriptive Statistics of Teacher's Perceptions on Teaching-Learning Processes

Statement	Mean	Median	Mode	Standard deviation
1	0,10	0	0	0,30
2	0,10	0	0	0,30
3	0,10	0	0	0,30
4	0,10	0	0	0,30
5	0,10	0	0	0,30
6	0,10	0	0	0,30
7	0,10	0	0	0,30
8	0,10	0	0	0,30
9	0,10	0	0	0,30
10	0,10	0	0	0,30

Note. This table shows the descriptive statistics analysis from the answers provided by the teacher about his perceptions on the teaching-learning process. Own elaboration.

Figure 10

Descriptive Statistics of Teacher's Perceptions on Teaching-Learning Processes



Note. This figure shows the graphic analysis of the teacher's survey about the perceptions on the teaching-learning process. Own elaboration.

It was noticed that there was a unanimous agreement (Strongly Agree) regarding the alignment of instructional methods with learning goals and the use of supportive resources for lesson planning. Additionally with the incorporation of student feedback for instructional adjustment, the promotion of a supportive and welcoming classroom setting, and the confidence in enhancing critical thinking skills.

As shown in Table 8, the data revealed that there was a unanimous agreement (Strongly Agree) regarding the use of all activities from the textbook, demonstrating a commitment to following a standardized approach rather than supporting a customized, dynamic teaching methodology.

Table 8

Frequency Table of Teacher's Perceptions on Teaching-Learning Processes

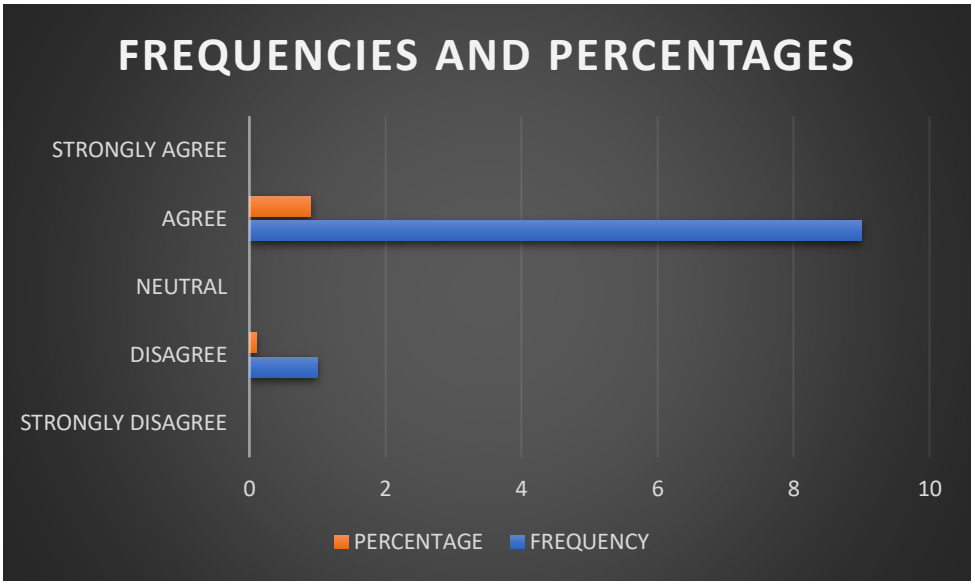
Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	0	0	0	0	**1**
2	0	0	0	0	**1**
3	0	0	0	**1**	0
4	0	0	0	**1**	0
5	0	0	0	0	**1**
6	0	0	0	**1**	0
7	0	0	0	0	**1**
8	0	0	0	0	**1**
9	0	**1**	0	0	0
10	0	0	0	**1**	0

Note. This table shows the frequency of answers provided by the teacher in the survey conducted to know his perceptions on teaching-learning perceptions. Own elaboration.

As, shown in Figure 11, while there was no agreement on the efficient integration of technology to enhance learning experiences, consensus was lacking regarding its necessity suggesting an equitable balanced perspective on its role within the EFL classroom.

Figure 11

Frequency Chart of Teacher's Perceptions on Teaching-Learning Processes



Note. This figure shows images of the frequencies and percentages regarding the teacher's answers given in the initial survey conducted. Own elaboration.

The consistent responses with minimal variance pointed to an understanding and endorsement of effective instructional practices, emphasizing student engagement, feedback integration, goal alignment, and a supportive learning environment. The teacher's responses indicated that he felt confident in his teaching methods, ensuring they aligned with the students' learning needs. Also, reflecting a careful effort to enhance learning outcomes and promote holistic development among his students.

Analysis Pre-assessment Questionnaire for Students. The Pre-assessment questionnaire was answered by all 24 students involved in this study. Their answers provided crucial understanding into their self-awareness, goal-setting behaviors, problem-solving strategies, emotional regulation, and perceived integration of English language skills across

school subjects, as shown in Table 9. Additionally, the implementation of such questionnaire fostered student autonomy and self-reflection, motivating them to actively engage in their learning process and take charge of their academic and socio-emotional development.

Table 9

Answers Pre-Assessment Questionnaire for Students

Pre-assessment questionnaire for students					
Items	Scale				
	1 - Strongly disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly agree
1. I know what I am good at and where I need to improve.	**4**	**16**	**0**	**3**	**1**
	16,7	66,7	0,0	12,5	4,2
2. I think about how I feel and how it affects what I do.	**3**	**11**	**1**	**6**	**3**
	12,5	45,8	4,2	25,0	12,5
3. I often check to see how well I am doing on my goals.	**11**	**4**	**3**	**2**	**4**
	45,8	16,7	12,5	8,3	16,7
4. I watch to see if I understand what I am reading or hearing.	**3**	**10**	**3**	**5**	**3**
	12,5	41,7	12,5	20,8	12,5
5. I make clear goals for myself and try to reach them.	**14**	**3**	**0**	**3**	**4**
	58,3	12,5	0,0	12,5	16,7
6. I decide what is most important and what I need to do first.	**3**	**12**	**1**	**4**	**4**
	12,5	50,0	4,2	16,7	16,7
7. After I finish something, I look at how well I did and how I can do better.	**5**	**12**	**0**	**3**	**4**
	20,8	50,0	0,0	12,5	16,7
8. I ask others what I am good at and what I can do better.	**4**	**10**	**2**	**5**	**3**
	16,7	41,7	8,3	20,8	12,5
9. I think about what happened during my day and what I learned.	**14**	**6**	**0**	**1**	**3**
	58,3	25,0	0,0	4,2	12,5
	11	**8**	**0**	**2**	**3**

10. I look for chances to learn more about myself and grow.	45,8	33,3	0,0	8,3	12,5
11. I try different ways to solve problems, step by step.	**6** 25,0	**12** 50,0	**1** 4,2	**2** 8,3	**3** 12,5
12. Even if things are hard, I keep trying to find answers.	**6** 25,0	**9** 37,5	**2** 8,3	**5** 20,8	**2** 8,3
13. I can control my feelings when things get tough.	**6** 25,0	**15** 62,5	**0** 0,0	**1** 4,2	**2** 8,3
14. If I need help with my thoughts or feelings, I ask someone I trust.	**5** 20,8	**9** 37,5	**3** 12,5	**4** 16,7	**3** 12,5
15. I use what I learn in English class to help with different subjects.	**3** 12,5	**13** 54,2	**0** 0,0	**3** 12,5	**5** 20,8
16. I can use my good English skills to do better in all my subjects.	**7** 29,2	**11** 45,8	**1** 4,2	**2** 8,3	**3** 12,5

Note. This table shows the answers given by the sixth-grade student's during the pre-assessment questionnaire. Own elaboration.

To conduct the quantitative data analysis of the pre-assessment questionnaire, the descriptive statistics were calculated to understand the central tendencies and dispersion measures of the respondents' perceptions, as shown in Table 10.

Table 10

Frequency Table of Pre-Assessment Questionnaire for Students

Scale	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Statement 1	7,60%	75,70%	0%	12,50%	4,20%
Statement 2	12,50%	45,80%	4,20%	25%	12,50%
Statement 3	45,80%	16,70%	12,50%	8,30%	16,70%
Statement 4	12,50%	41,70%	12,50%	20,80%	12,50%

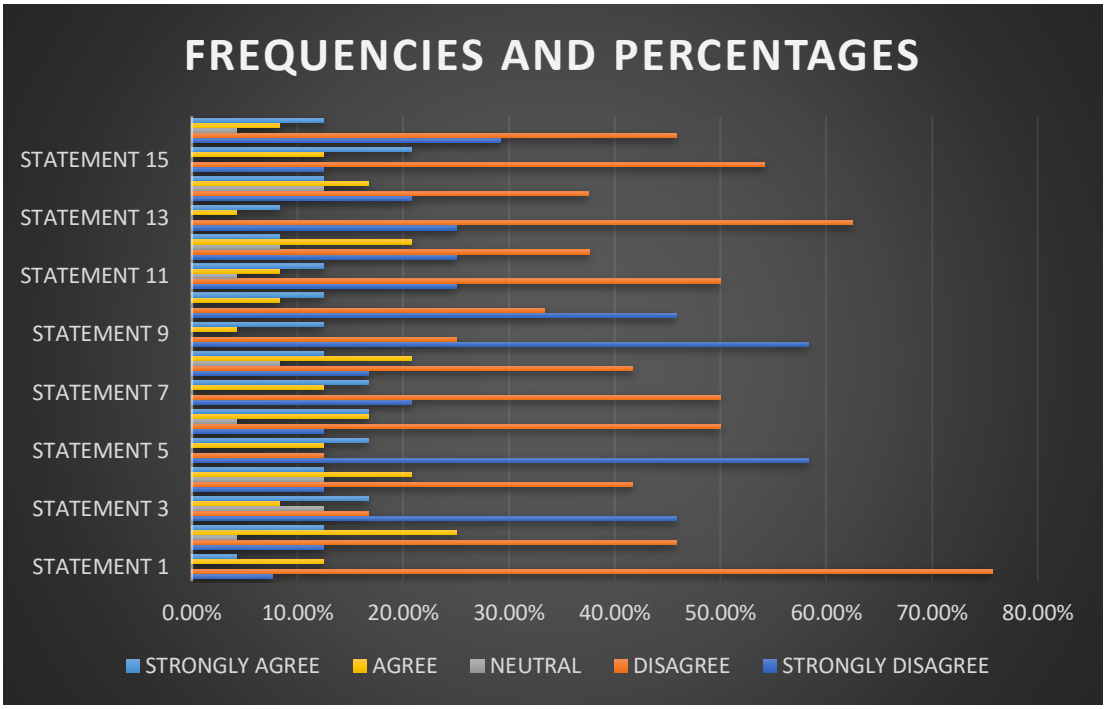
Statement 5	58,30%	12,50%	0%	12,50%	16,70%
Statement 6	12,50%	50%	4,20%	16,70%	16,70%
Statement 7	20,80%	50%	0%	12,50%	16,70%
Statement 8	16,70%	41,70%	8,30%	20,80%	12,50%
Statement 9	58,30%	25%	0%	4,20%	12,50%
Statement 10	45,80%	33,40%	0%	8,30%	12,50%
Statement 11	25%	50%	4,20%	8,30%	12,50%
Statement 12	25%	37,60%	8,30%	20,80%	8,30%
Statement 13	25%	62,50%	0%	4,20%	8,30%
Statement 14	20,80%	37,50%	12,50%	16,70%	12,50%
Statement 15	12,50%	54,20%	0%	12,50%	20,80%
Statement 16	29,20%	45,80%	4,20%	8,30%	12,50%

Note. This table shows the frequency of student's answers from the pre-assessment questionnaire. Own elaboration.

Then, the frequencies, percentages, means, and standard deviations were analyzed to quantify the central tendency and variability of responses, providing insights into students' perceptions and attitudes, as seen in Figure 12. The mean offered a measure of the average response, while the standard deviation gauged the dispersion around the mean, indicating the degree of variability among responses.

Figure 12

Chart of Frequencies of Pre-assessment Questionnaire for Students



Note. This figure shows images of the frequencies and percentages analysis of student's answers from the pre-assessment questionnaire. Own elaboration.

Analyzing the students' responses through mean and standard deviation calculations allowed the researcher to assess their metacognitive and socio-emotional skills, identifying areas of strength and areas needing support.

The provided data provided a comprehensive understanding of varied dimensions of students' metacognitive skills. After conducting a critical analysis of these findings, several important trends and implications for educational strategies and interventions emerged. To start with, there was a prevailing trend of limited self-awareness among the 24 surveyed students, the

majority of students' responses suggested a need for interventions aimed at enhancing their self-assessment skills.

Without a clear understanding of their strengths and areas for improvement, students could encounter difficulties in monitoring their progress, setting meaningful goals, and making wise decisions about their learning and personal development.

A significant proportion of students felt that they did not actively engage in introspection regarding their emotional states. This lack of emotional awareness could impact their decision-making processes, interpersonal relationships, and overall well-being. It is crucial to implement interventions focused on nurturing emotional intelligence skills, to give students the necessary tools to navigate social and emotional challenges effectively, both within and beyond academic environments. Additionally, the data indicated a pattern of limited goal-setting behaviors and proactive self-regulation among students.

A considerable majority of students expressed that they did not evaluate their goal attainment, prioritize tasks effectively, or engage in post-task reflection. This emphasized the importance of interventions designed to foster goal-setting, time management, and metacognitive skills to improve students' academic performance and personal growth. The variability observed in students' problem-solving approaches, resilience, and willingness to seek support suggested a necessity for implementing targeted interventions that could promote adaptive coping strategies, perseverance, and help-seeking behaviors. Developing a growth mindset and building a supportive learning environment were pertinent for empowering students to overcome challenges they could encounter, persist when faced with setbacks, and look for assistance when needed.

In spite of being in a bilingual school, the data showed a disconnect between students' perceptions of the transferability and impact of English proficiency on academic performance in

other school subjects. A significant percentage of students overlooked its interdisciplinary relevance. Given the importance of English proficiency as a foundational skill for academic success, academic interventions should emphasize its relevance across diverse subject areas and encourage interdisciplinary practices for language teaching

The careful analysis of the provided information shed light on the complexity of how students' perceived, comprehended and responded to themselves and their environment. This is very important for teachers, because it helps them teach better by knowing what their students need. When teachers exactly know how their students feel and react, they can make learning more fun and interesting. As for students, it helps them grow, understand themselves and others, making learning better experience for everyone.

Analysis of the Post-assessment Answers. Following the conclusion of the eighteen (18) flipped learning sessions, a post-assessment questionnaire administered to the exact same group of 24 students who had previously responded the Pre-assessment questionnaire. This questionnaire was implemented using a Google form and the students were brought together to the school computer lab for responding to the new questionnaire.

The administration of this post-assessment questionnaire corresponded with the outlined objectives in this educational research. Thus, conducting this post-assessment questionnaire enabled a thorough evaluation of the students' cognitive and affective responses following the intervention stage. Additionally, it functioned as an essential mechanism for determining the effectiveness and understanding the impact of the implemented teaching interventions, specifically within the context of the flipped learning approach.

This analysis provided a comprehensive overview of the respondents' perceptions regarding various aspects related to metacognition and flipped learning. Depicted in Table 11 are

the analyzed the frequencies, percentages, means, and standard deviations for the dominant attitudes.

Table 11

Frequency Table of Post-Assessment Questionnaire for Students

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Statement 1	0,00%	8,30%	8,30%	20,90%	62,50%
Statement 2	0,00%	4,10%	4,20%	54,20%	37,50%
Statement 3	4,10%	0,00%	4,20%	50,00%	41,70%
Statement 4	0,00%	4,20%	0,00%	33,30%	62,50%
Statement 5	4,20%	0,00%	0,00%	37,50%	58,30%
Statement 6	0,00%	0,00%	4,20%	25,00%	70,80%
Statement 7	0,00%	0,00%	8,30%	25,00%	66,70%
Statement 8	0,00%	4,20%	4,20%	58,30%	33,30%
Statement 9	0,00%	0,00%	4,10%	29,20%	66,70%
Statement 10	4,10%	4,20%	0,00%	37,50%	54,20%
Statement 11	0,00%	0,00%	12,50%	33,30%	54,20%
Statement 12	0,00%	4,10%	0,00%	54,20%	41,70%
Statement 13	4,20%	4,20%	8,30%	37,50%	45,80%
Statement 14	0,00%	4,20%	0,00%	62,50%	33,30%
Statement 15	4,10%	0,00%	0,00%	29,20%	66,70%

Statement 16	0,00%	4,20%	12,50%	37,50%	45,80%

Note. This table shows the frequency of student's answers from the post-assessment questionnaire. Own elaboration.

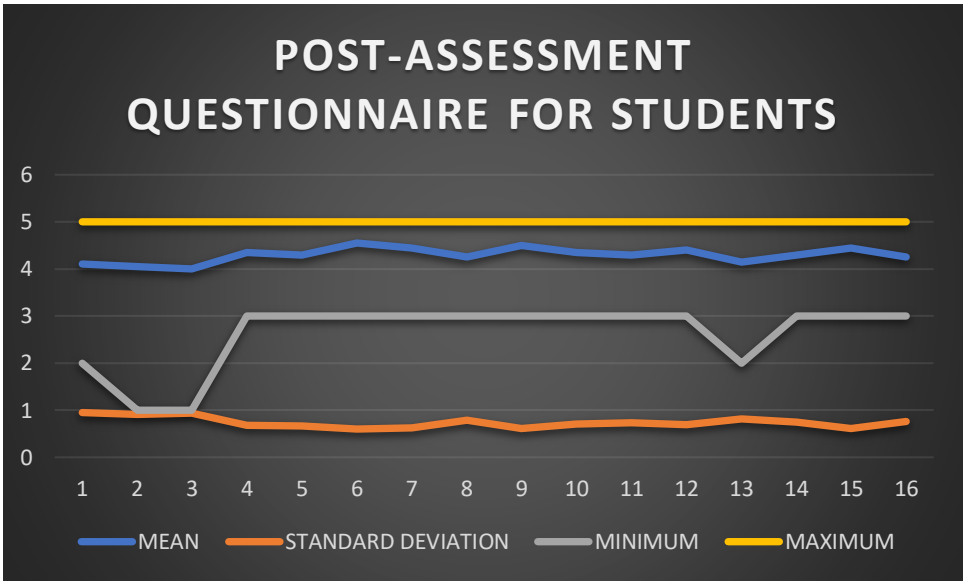
One of the significant observations was the dominant inclination towards positive self-assessment among the majority of students regarding their language proficiency and learning strategies, as shown in Figure 13.

The considerable number of students who recognized awareness of their strengths and areas needing improvement emphasized the need of fostering self-reflection and self-evaluation skills in students. Additionally, the results showed a strong recognition of the impact of emotions in language learning While the majority of students acknowledged the influence of emotions on their actions, a considerable minority expressed disagreement.

These answers highlighted a potential area for intervention to promote emotional intelligence among students. Therefore, by fostering a supportive and emotionally literate learning environment, teachers could enhance students' overall well-being and academic success in EFL classrooms.

Figure 13

Deviation Chart of Post-assessment Questionnaire for Students



Note. This figure shows images of the frequencies and percentages analysis of student's answers from the post-assessment questionnaire. Own elaboration.

Students' responses to goal-setting and self-monitoring emphasized the importance of cultivating strategic learning skills in language learners. A significant portion of students exhibited a proactive attitude in setting clear goals, tracking their academic progress, and organizing tasks, suggesting a strong preference for self-regulated learning. Additionally, the majority of students demonstrated a tendency towards post-task evaluation and reflection, signaling a commitment to continuous improvement and lifelong learning. These answers were related to reflective practice and emphasized the importance of fostering critical thinking and metacognitive reflection in students.

As for social support and collaboration, the results showed that the majority of students expressed willingness to seek assistance from trusted individuals when needed, a minority

remained ambivalent. These answers highlighted the importance of establishing an encouraging learning environment in class. On the matter of the utility of English language proficiency in supporting learning across diverse academic domains, most students indicated a strong belief in the cross-disciplinary benefits of language learning. This underscored the interdisciplinary essence of language learning and its potential to enhance overall academic achievement.

To conclude, the analysis of post-assessment questionnaire results provided valuable perspectives regarding various dimensions of EFL education. These findings highlighted the importance of fostering a heterogeneous methodology to language learning which integrates social, cognitive, affective dimensions.

Qualitative Results

For this research, content analysis was employed during the qualitative data analysis. As outlined by (McMillan and Schumacher, 2014), qualitative data analysis involves the systematic process of organizing, sorting, arranging, and synthesizing data to illuminate the subject under investigation, effectively condensing extensive data into manageable and understandable conclusions.

As part of the qualitative data analysis, the teacher's interview, students' interviews, researcher's journal, and classroom observations were thoroughly examined. (Creswell, 2013) advocates for a systematic approach to qualitative analysis that involves moving from raw data to thematic interpretation. Data triangulation was implemented by employing diverse methods from various sources, which resulted in a deeper comprehension of the research.

The reliability, transparency, and credibility of the analysis. were enhanced by detailed descriptions of the study's sampling, data collection and methods for data analysis.

Analysis of Classroom Observations. The analysis of the classroom observations provided a different view into the dynamics of teaching and learning processes within the sixth-grade classroom. According to (Denzin and Lincoln, 2018), by systematically observing classroom dynamics across multiple sessions, researchers could assess the efficacy of their teaching strategies and identify specific situations for intervention.

(Hattie, 2009) states that classroom observations are vital for evaluating the development of students' metacognitive skills. They allow educators to directly observe how students engage with learning tasks and manage their cognitive processes. Observations can indicate whether students actively monitor their understanding, adapt their approaches based on feedback, and persist in problem-solving, all of which demonstrate their metacognitive awareness.

Additionally, observations capture students' ability to set goals, regulate their learning, and adjust strategies to meet objectives effectively. Educators can witness students employing metacognitive techniques such as planning, organizing information, and reflecting on their progress, illustrating their increasing autonomy in learning and strategic thinking. By systematically recording these observations, educators can track the progression of students' metacognitive development over time. This data informs instructional decisions aimed at further nurturing these essential skills in educational contexts.

Each observation session provided valuable perspective on students’ engagement, collaborative problem-solving, and the application of metacognitive processes. This analysis was conducted to explore the findings of each observation session and their implications for both teaching strategies and students’ learning.

During the classroom sessions, a specially designed observation form was implemented to record behaviors either in real-time or soon afterward. In the first observation, a range of

student engagement levels were evident, along with notable deficiencies in resolving conflicts and demonstrating metacognitive processes. During the second and third observations, students showed a remarkable change in engagement and collaborative problem-solving abilities, marked by their active participation and more effective group interaction. Still a noticeable discrepancy was evident in metacognitive processes, indicating a need for further emphasis on self-regulated learning.

The fourth and fifth observations demonstrated significant improvement in engagement, collaboration, and metacognitive development. Students consistently exhibited high levels of participation and began to employ metacognitive strategies more efficiently, thus showing a successful integration of pedagogical strategies to enhance their learning. This trend continued in the sixth and seventh observations highlighting the effectiveness of these strategies in maintaining high levels of engagement, collaboration, and fostering metacognitive development; these positive trends were attributed to the pedagogical intervention.

To analyze the collected data, the researcher followed a structured approach, beginning with the creation of a codebook to delineate categories and criteria. (Creswell, 2014) describes codebooks as systematic guides that researchers develop to identify patterns, themes, and relationships within qualitative data. The researcher analyzed the data to understand students' behaviors, teaching practices and methodology interventions.

As shown in Figure 14, specific inductive codes were created for analyzing the classroom observations provided.

Figure 14

Image of Code book for Classroom Observations

THEME	CODE	CATEGORY
. Students' Active Engagement Levels	CODE 1	Participation and Interaction
	CODE 2	Use of Materials and Resources
	CODE 3	Involvement in Discussions/Activities
	CODE 4	Level of Enthusiasm and Interest
	CODE 5	Overall Engagement and Interest
Collaborative Problem-Solving Behaviors	CODE 6	Group Interaction and Communication
	CODE 7	Sharing Ideas and Perspectives
	CODE 8	Resolving Conflicts and Disagreements
	CODE 9	Contribution to Group Solutions
	CODE 10	Overall Collaboration Effectiveness
Demonstrations of Metacognitive Processes	CODE 11	Goal Setting and Planning Strategies
	CODE 12	Monitoring Understanding and Progress
	CODE 13	Adaptation of Learning Strategies
	CODE 14	Reflection on Learning Experiences
	CODE 15	Application of Metacognitive Skills

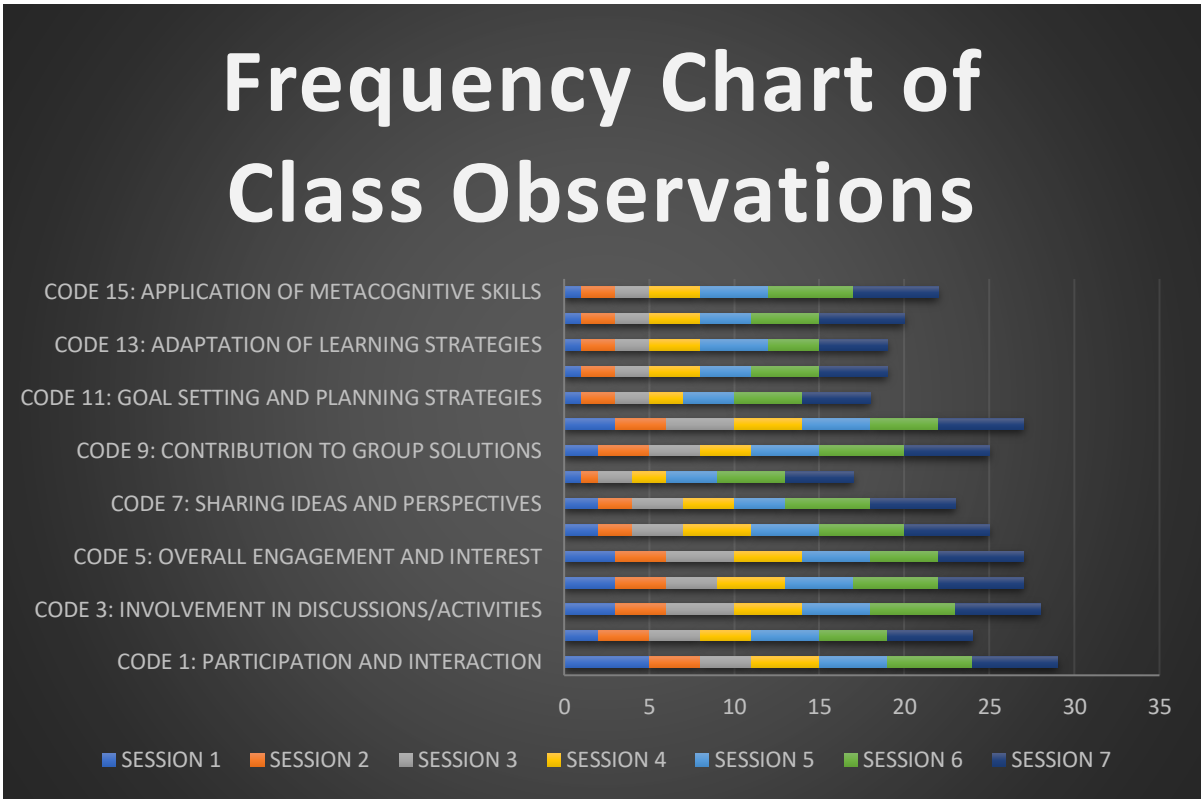
Note. This figure shows images of the themes, codes, and categories obtained to create the code book for the classroom observation notes. Own elaboration.

These codes were applied based on the descriptions provided in the classroom observation notes. With this methodical process, it was possible to make the categorization and analysis of students' observed behaviors, thereby facilitating the identification of patterns and trends across different observation sessions and classes. As shown in Figure 15, the observation session and the frequency of the observed behavior were organized.

This presentation facilitated the organization and analysis of the coded data to identify patterns and trends during the different observation periods. Based on the data analysis from the class observations conducted during this research, students escalated from moderately engaged to highly engaged over time, indicating a positive trend in general engagement.

Figure 15

Frequency Chart of Class Observations



Note. This figure shows images of the analysis of the code frequencies based from the class observations made during this research. Own elaboration.

This suggested that the instructional methods, incorporating Flipped Learning methodology, were effectively increasing student engagement. Additionally, students demonstrated moderate to active levels of collaboration in problem-solving tasks. I t was noticed that room for improvement in specific aspects such as resolving conflicts and disagreements, was needed. This indicated that while students were collaborating in class, there were some challenges in effective teamwork that needed to be addressed.

As pointed out by (Smyth et al., 2020), the identification of specific deficiencies in students' collaborative problem-solving skills and metacognitive processes enables educators to adapt class interventions more precisely. The findings obtained from classroom observations offered empirical support for the effectiveness of amalgamating EFL instruction with the Flipped Learning methodology.

Activities related to goal setting, monitoring progress, adapting learning strategies, reflecting on learning experiences, and applying metacognitive skills were observed. There was an improvement towards the end of the observation period, suggesting potential for growth in metacognitive development with This indicated that, students exhibited a progressive demonstration of their metacognition processes during the implementation sessions. According to (Hattie, 2009), there exists an ongoing process of acquiring new knowledge and adjusting to novel circumstances.

The classroom observation served as a detailed data repository for exploring the intricate dynamics of EFL instruction and the Flipped Learning methodology, and their consequent influence on students' levels of engagement and metacognitive functions.

The findings obtained from these class observations contributed to the enhancement of teaching strategies to promote active engagement and promote metacognitive growth within the classroom environment. As emphasized by (Marzano, 2007), successful teaching goes beyond generic practices instead of relying on context-specific decisions.

Teachers can use these insights to adapt their instructional approaches for facilitating learning experiences and promoting critical thinking skills development among their students.

Analysis Interview Form for Teachers. Following the completion of flipped learning sessions, an interview was made to the teacher, which was recorded for accuracy. (Dörnyei,

2007) highlights the importance of applying spoken interviews in exploring mindsets, beliefs and motivation, particularly in the context of second language acquisition. To facilitate readability the interview format was modified to a Google Form, prior its execution.

The responses were then transcribed into a Word document to prepare for analysis. Employing qualitative data analysis technique, the data was carefully examined to identify patterns and themes. This methodological approach facilitated a detailed examination of the teacher's perceptions and experiences in the flipped learning context, providing valuable discernments for further academic research and educational development.

A qualitative research method known as thematic analysis was employed to analyze the teacher's answers from his interview. Thematic analysis encompasses a structured process for identifying, analyzing, and presenting patterns in the data. (Guest et al., 2012) underscore flexibility of thematic analysis, and emphasize its iterative nature, making it suitable for both exploratory and theory-driven research. The process involves different steps, such as comprehension of the data collected, generation of initial codes, search for themes and patterns, definition and naming of themes.

In this research, the recorded interview responses were transcribed into text format, and after careful examination, recurring patterns were identified and organized into meaningful themes. The initial codes were generated to capture the essence of the data and then they were grouped and refined to identify global themes. (Creswell, 2014) suggests that themes emerge through repeated patterns or similarities in the data and are often identified through the process of coding.

Themes were derived by organizing and grouping, as shown in Figure 16. These themes provide a structured framework for analyzing the teacher's responses and offer insights into their

perceptions, experiences, and suggestions regarding flipped learning and metacognitive skill development.

Figure 16

Image of Themes Obtained for the Teacher's Interview Data Analysis

THEMES	Understanding and Perception of Flipped Learning
	Personal Experience and Challenges
	Benefits and Effectiveness
	Awareness and Importance of Metacognitive Skills
	Observations and Changes in Teaching Approach
	Areas of Improvement and Recommendations

Note. This figure shows images of the themes collected after analyzing the information from the teacher's interview. Own elaboration.

Based on the codes and themes derived from the teacher's answers in the interview, several conclusions were drawn regarding his perceptions and experiences with flipped learning. The teacher's answers showed that he was familiar and had a proficient knowledge with the flipped learning methodology. Through personal anecdotes, he was able to acknowledged the flipped learning approach's departure from traditional classroom practices, highlighting students' engagement, its potential for interactive, dynamic learning environments, and a deeper exploration of topics seen in class.

Inspired by flipped learning's transformative potential, the teacher proposed a transition towards prioritizing metacognitive skill development among students, demonstrating a commitment to improving learning results. Despite initial challenges some students went through in adapting to this new approach, the teacher recognized its merits, and also, he emphasized the

importance of ensuring student attended class fully prepared. According to the teacher, the efficacy of flipped learning played a crucial role in preparing engaging students with pre-class activities and in fostering deeper comprehension during in-class activities.

Additionally, the teacher exhibited a notable understanding of metacognitive skills, recognizing their critical role in education and advocating for their incorporation into teaching approaches. While recognizing flipped learning's efficacy in promoting deep learning and metacognitive development, the teacher also identified areas for improvement, emphasizing the need for enhanced resources and strategies to increase students' active participation.

The teacher provided concrete examples, such as goal establishment, problem-solving methodologies, and nurturing reflective practices. This aligns with modern educational paradigms that underscore the crucial role of metacognition in amplifying educational achievements.

To sum up, the teacher perceived flipped learning as a critical instrument in developing students' metacognitive processes such as strategic planning, ongoing monitoring, and critical assessment. This underscored the necessity of pedagogical innovation and continuous professional development initiatives in improving teaching methodologies.

Analysis Interview Form for Students. In this research a sample of 24 students participated and from this group, 8 students were selected randomly to provide their perceptions and experiences in the final interview. The selection process ensured an equal representation of genders, with 4 boys and 4 girls participating in the interviews. These interviews were conducted using a Google Form format and took place after the completion of the 18 flipped learning sessions.

(Marshall and Rossman, 2006) emphasize the importance of open coding, which involves systematically identifying and labeling meaningful concepts, themes, and patterns in the interview data. In the diligent pursuit of accurate data analysis, this research used multiple data sources to ensure the validity and reliability of its interpretations and conclusions. This approach also helped to mitigate the potential for bias, thus enhancing the overall credibility of the results.

The responses obtained from the interviews offered valuable insights into the students' points of view and experiences with the flipped learning approach. After the interviews from the 8 selected students were recorded, several steps were taken to analyze them and use this qualitative data effectively. Initially, the recorded interviews were transcribed word-for-word into text format. TranscribeMe, a program commonly used for transcription, was used because this tool offered automatic speech recognition features to ensure accuracy.

Afterwards, the transcribed interviews were organized systematically to maintain clarity and facilitate efficient access during the analysis phase. A special folder was created on Google Drive and the transcribed interview files were saved with unique identifiers to maintain the participants' confidentiality. This gave way to conduct the thematic analysis to identify patterns and recurring ideas within the collected data. This involved several iterative steps, including understanding of the data and coding to extract meaningful insights related to the students' views on the flipped learning sessions.

As with the teacher's interview data, Atlas.ti software was used to facilitate the analysis process, facilitating efficient visualization of themes. Key concepts and ideas expressed by the students were analyzed, and, as shown in Figure 17, initial codes were generated based on the content of the answers from the interview.

Figure 17

Image of Codes Obtained for the Students' Interview Data Analysis

CODE		DESCRIPTION
CODE 1	FUN	Enjoyment of new activities
CODE 2	INTERACTION	Increased interactivity in learning
CODE 3	PREPARATION	Preparation through videos and materials
CODE 4	UNDERSTANDING	Improved understanding of English
CODE 5	HOME	Engagement in learning activities at home
CODE 6	CHALLENGES	Challenges faced in learning
CODE 7	RECOMMENDATIONS	Recommendation or positive feedback to others
CODE 8	TECHNOLOGY	Use of technology for learning activities
CODE 9	IMPACT	Perception of impact on learning experience
CODE 10	ORGANIZATION	Improved organization and planning of learning
CODE 11	TIME	Time management in relation to learning activities

Note. This figure shows the codes collected from the analysis of the interviews conducted to the students. Own elaboration.

Generating codes was essential for this research because it allowed for the organization and categorization of the amount of information collected. By breaking down the responses into meaningful units, themes were identified to facilitate understanding of the ideas expressed by the students, as shown in Figure 18. These themes enabled the researcher to extract valuable insights and draw meaningful conclusions from the interview data.

Figure 18

Image of Themes Obtained for the Students' Interview Data Analysis

THEME	DESCRIPTION
Enjoyment	Enjoyment of the new learning activities
Interactivity	Engagement in more interactive learning experiences and group activities
Preparation	Use of videos and materials for preparation before class
Understanding	Improved comprehension and grasp of English language concepts and content
Engagement	Active involvement and participation in learning activities, including at home
Challenges	Difficulties or obstacles encountered during the learning process
Recommendation	Positive feedback or advocacy for the new learning method to others
Technology	Utilization of technology, such as videos and online resources, for learning
Impact	Perception of the impact of the new learning method on overall learning experience
Organization	Enhanced organization and planning skills in relation to learning activities
Time Management	Effective management of time for learning activities, including at home

Note. This figure shows the themes collected after analyzing the information from the teacher's interview. Own elaboration.

The findings from students' answers on the new activities introduced in their English class were profoundly positive and students found them enjoyable and effective for their language learning process. Also, students expressed that this shift from passive to active engagement provided them with opportunities for creative discussions and practical application. Additionally, the use of materials, like videos and interactive games were well-received by students because they helped them in enhancing their preparation and understanding of English concepts in and outside of their classroom.

Students expressed that their preparedness and the interactivity and practice opportunities offered by the approach helped them to increase their confidence in speaking and participating during the activities developed in class. In their answers, students mentioned that despite the positive perceptions, there were some challenges during the implementation sessions, such as distractions at their homes, adjusting to new learning routines and difficulty staying focused. However, they were able to adapt, gradually they developed productive time management and self-regulation techniques for solving these challenges.

In conclusion, students expressed favorable impressions regarding the importance of the implementation of a flipped learning methodology in an ELT classroom in creating livelier and more interactive learning environments favorable for language acquisition and proficiency.

Analysis Reflection Journal. According to (Creswell, 2014), the utilization of researcher reflection journals serves to enhance reflexivity, methodological rigor, and transparency within a qualitative research process. Eight entries were made to the reflection journal during the implementation sessions to evaluate student engagement and metacognitive behaviors in the context of EFL learning. The reflection journal was converted into a Google Form for optimizing both the efficiency and effectiveness of data collection and analysis.

The use of Google Forms, enhanced the accessibility to the reflection journal greatly, and also, it enabled the researcher to access and submit entries from anywhere with an internet connection. (Delamont, 2012) underscores the significance of researcher reflexivity and the integration of reflective practices into qualitative research methodologies, The availability facilitated the systematic documentation of essential aspects of participants' experiences through structured reflection prompts. Google Forms reduced the need for manual entry and minimizing potential errors associated with transcription. In addition, the adoption of Google Forms proved

to be a crucial in enhancing the entire data collection and analysis procedure, leading to more efficient and reliable research outcomes.

Several steps were followed to conduct detailed analysis and interpretation of the eight entries made to the reflection journal. First, the data was examined for open coding, where patterns were identified and labeled within the text. This process allowed the researcher to extract meaningful insights and observations from the journal reflections. As shown in Figure 19. these codes organized into a codebook, which served as a comprehensive reference guide outlining the categories and subcategories derived from the data.

Figure 19

Image of Codes Obtained for the Researcher's Reflection Journal Data Analysis

CODE	DESCRIPTION
C1	Active participation
C2	Cognitive awareness
C3	Engagement with metacognitive processes
C4	Collaboration skills
C5	Planning strategies
C6	Reflection on learning experiences
C7	Use of materials
C8	Proactive planning
C9	Adapting learning strategies
C10	Equitable participation
C11	Individual learning needs
C12	Teacher support
C13	Student autonomy
C14	Vibrant learning environment
C15	Self-awareness
C16	Strategic planning
C17	Reflective practices
C18	Monitoring and regulation of learning processes
C19	Optimization of learning processes
C20	Pedagogical interventions
C21	Academic performance

Note. This figure shows the codes collected after analyzing the information from the researcher's journal. Own elaboration.

Thematic analysis was engaged where the relationships between codes were examined and identified dominant themes that emerged from the reflection journal entries. This iterative

process of coding and analysis enabled a thorough understanding of the experiences and outcomes recorded in the reflection journal. These themes and codes represented the fundamental aspects of the researcher's reflections regarding student engagement, academic performance, pedagogical impact, and metacognitive behaviors the over the course of the research.

From the codes and themes behaviors, conditions and skills related to metacognition and flipped learning were represented. These codes and themes provided a detailed structure for understanding and examining the intricate nature of learning processes, from individual behaviors to broader educational contexts and results, as shown in Figure 20.

Figure 20

Image Of Themes Obtained for The Researcher's Reflection Journal Data Analysis

THEME	DESCRIPTION
Student Engagement	Active participation, collaboration skills, engagement with metacognitive processes
Cognitive Awareness	Awareness of learning processes, planning strategies, reflection on learning experiences
Metacognitive Development	Use of materials, proactive planning, adapting learning strategies, self-awareness, strategic planning, reflective practices, monitoring and regulation of learning processes, optimization of learning processes
Pedagogical Impact	Teacher support, student autonomy, vibrant learning environment, pedagogical interventions
Academic Performance	Equitable participation, individual learning needs, academic performance

Note. This figure shows the themes collected after analyzing the information from the researcher's journal. Own elaboration.

The findings from the reflection journal entries offered valuable insights into the effectiveness of flipped instruction in developing students' metacognition. Additionally, they

underscored the importance of targeted interventions and pedagogical innovation in addressing challenges and refining instructional practices.

For instance, emphasized the iterative nature of the process, gradual advancement was revealed. Initially, students displayed varied levels of participation and engagement, with notable areas for improvement identified, particularly in fostering students' collaboration and developing metacognitive skills. These advancements denoted the effectiveness of flipped instruction in empowering students and promoting their metacognitive development.

To sum up, the reflection journal served as an essential tool for qualitative data analysis and research, as it provided a structured record of observations, perceptions and reflections collected during the implementation of flipped learning sessions.

Analysis of the Categories and Subcategories

In the context of this research triangulation, by integrating quantitative and qualitative data various data collection methods, triangulation strengthened the reliability and credibility of research findings. Data triangulation played a crucial role in creating the categories and subcategories by providing better understanding of the processes being examined.

According to (Denzin and Lincoln, 2018), triangulation in educational research involves utilizing multiple methods, data sources, and perspectives to enhance validity, corroborate findings, and provide a comprehensive understanding of the research topic. The researcher gathered the information to create these categories and subcategories through the combined use of qualitative and quantitative research methods. Additionally, the researcher drew upon existing literature on metacognition and flipped learning to inform the development of these categories and subcategories.

Category 1: Student Engagement. Student engagement, as suggested by (Chickering and Gamson, 1987), stands as a key indicator of the effectiveness of educational undertakings. By exploring the dimensions of engagement, involvement, and participation in collaborative learning activities, the complex relationship between teaching strategies and student engagement, was underscored particularly in the context of flipped learning. This category navigated the domain of student engagement, investigating its diverse nature and evaluating its transformative potential within educational settings.

Subcategory 1. Initial Engagement. The data indicated a mixed perception among students regarding their initial engagement with their teaching-learning process, involving their perception of alignment between efficacy of teaching methods, course content, learning-teaching goals, and level of active participation. Some positive aspects were recognized, regarding the perception of their involvement in the proposed learning activities and their satisfaction with the feedback given to their assignments. However, a significant number of students expressed their dissatisfaction with the alignment of content with the effectiveness of teaching methods and their learning goals.

Despite these initial challenges, as the implementation sessions progressed, students showed increasing interest and involvement in the learning activities, reflecting a successful integration of pedagogical strategies to enhance engagement.

Subcategory 2. Sustained Engagement. Sustained engagement refers to students' continued involvement and participation in their learning process over time. During the implementation period, there was evidence of sustained engagement among students participating in the flipped learning sessions. The collected data suggested a need for ensuring

continuous improvement in student engagement in the learning process. Initially, students exhibited different levels of sustained engagement, with some struggling to maintain focus.

However, as the sessions evolved, there was a significant increase in sustained engagement among students, actively participating in the proposed activities and demonstrating a strong commitment to their learning process. This sustained engagement over time demonstrated the effectiveness of the flipped learning approach in fostering student involvement and motivation.

Subcategory 3. Participation in Collaborative Learning Activities. Participation in collaborative learning activities makes reference to students' engagement in activities conducted within a group setting and interactions with classmates. The analyzed data suggested a positive perception among students regarding the promotion of collaborative learning in their classes. The majority of students perceived the class environment as favorable for collaborative learning, although, there were some concerns regarding the level of students' involvement and cooperation.

During the first sessions, students demonstrated varying levels of participation in collaborative activities, with some reluctancy and difficulty in working together effectively. However, as time went on in the sessions, there was a distinct advancement in student participation in collaborative learning activities. In later sessions, students were notably engaged in collaborative problem-solving tasks, demonstrating effective group interaction and cooperation. This increased participation in collaborative activities highlighted the success of the flipped learning approach in promoting teamwork and peer learning.

Category 2: Metacognitive Skills Development. This category involves the development of students' metacognitive awareness and management of their learning processes throughout the implementation of the flipped learning sessions. (Costa and Kallick, 2008) emphasize the importance of metacognitive habits as essential skills for effective learning and problem-solving.

This category stressed the crucial importance of metacognition in enriching students' learning experiences and promoting critical thinking skills necessary for lifelong learning. Developing metacognitive skills is essential for effective language learning, enabling learners to navigate the complexities of linguistic acquisition confidently. (Hattie and Timperley, 2007) argue metacognitive skills can significantly enhance students' ability to tackle complex tasks and navigate various learning environments. Therefore, language proficiency and lifelong self-directed learning and problem-solving abilities are enhanced by nurturing metacognitive awareness.

Subcategory 1: Awareness of Learning Strategies. Awareness of learning strategies is associated with students' understanding of the effectiveness of learning and their skills to offer solution to problems. During the flipped learning sessions, students demonstrated an increasing awareness of learning strategies, particularly metacognitive processes.

It was observed that students exhibited a gradual progression in the acquisition and refinement of conflict resolution skills demonstrating self-regulated learning. By the end of the implementation period, there was significant improvement in students' awareness and application of learning strategies. Students were actively participating in activities focused on goal setting, progress, and adapting learning strategies, as well as reflecting on learning experiences. This demonstrated a positive result in fostering metacognitive abilities among the students.

Subcategory 2: Reflection on Language Proficiency. Reflection on language proficiency denotes students' ability to reflect on their language learning progress and highlight areas for improvement. Despite facing initial challenges, such as distractions and challenges in staying focused, students managed to effectively adapt and enhance their time management and self-regulation strategies productively. And also, they were able to regularly reflect on their language proficiency and progress over time.

Students engaged in reflective practices regarding their language proficiency throughout the flipped learning sessions. They evaluated their progress, carefully analyzing their strengths, areas for improvement, and reflected on their learning experiences. Additionally, they collaborated with their partners to share insights and feedback to enrich their understanding further.

Also, student noted improvements in their confidence in speaking and participating during class activities, attributing this growth to the interactive and practice opportunities provided by the flipped learning methodology. Throughout the collected data, students expressed positive perceptions of the efficacy of the flipped learning methodology in enhancing their language learning process.

Subcategory 3: Transfer of Metacognitive Skills. Transfer of metacognitive skills makes reference to students' ability to apply metacognitive strategies learned in one context to new learning situations. As students progressed through the sessions, there was an evident improvement in their metacognitive development, specifically in areas such as strategic techniques to problem-solving, goal setting, and reflective techniques.

The transfer of metacognitive skills was evident throughout the flipped learning sessions, indicating students' ability to apply learned strategies beyond the classroom context. Students

demonstrated their competence in applying these skills by monitoring and managing their own learning processes. Students' performance in assessments showed evidence of strategic thinking and problem-solving skills, indicating their capacity to apply learned metacognitive strategies to new challenges. Additionally, during class discussions and presentations students effectively communicated their thoughts and actively participated in group problem-solving activities. Their performance in assessments was used as concrete evidence of their strategic thinking and problem-solving abilities, exhibiting the use of learned metacognitive strategies.

This transfer of metacognitive skills underscores the efficacy flipped learning has in fostering deeper levels of learning and critical thinking skills among students. The categories of student engagement and metacognitive skills development were instrumental in leading the research process, by offering a structured framework for data analysis and interpretation.

As stated by (Bergmann and Sams, 2012), flipped learning is particularly pertinent in modern educational settings as it aims to enhance student engagement, foster active learning, and cultivate higher-order thinking abilities. By moving direct instruction outside of class, flipped learning encourages students to assume greater responsibility for their own learning journey while enabling educators to tailor instruction to meet individual student needs more effectively. Furthermore, studies indicate that flipped learning can yield positive outcomes such as improved critical thinking, better retention of information, and increased overall satisfaction with the learning process.

Through methodical organization of the findings into distinct dimensions such as initial engagement, sustained involvement, and awareness of learning strategies, the researcher could identify patterns, trends, and areas for improvement within the context of flipped learning. Employing data triangulation and thorough analysis within these categories, the research

highlighted the need for promoting effective learning strategies, facilitating reflection and aligning teaching methods with learning objectives. To sum up, these categories offered specific recommendations for pedagogical improvements and curriculum adjustments, and also, provided bases for further research studies aimed at enhancing our understanding of effective educational methods.

Discussions and Conclusions

This research aimed to investigate the impact of implementing flipped learning on the development of metacognitive abilities among sixth-grade students. It sought to contribute valuable insights to educational research by emphasizing effective strategies that foster students' metacognitive development and improve academic outcomes across diverse learning environments.

Two interconnected concepts were at the center of this research, flipped learning and metacognition. Flipped learning, an innovative pedagogical approach, has recently become attractive to teachers because of the capabilities it offers to increase students' participation in class. Through the implementation of flipped learning sessions, students are empowered to interact with course material autonomously before coming to class, allowing for more focused and interactive classroom experiences. Metacognition, the cognitive process encompassing the monitoring, regulation, and assessment of one's own learning processes, is crucial for language students as it enables them to become more autonomous and strategic in their language learning process.

Essentially, flipped learning and metacognition complement each other, as flipped learning provides a framework for fostering and applying metacognitive skills, while metacognition empowers students to in engage proficiently flipped learning activities.

This chapter discusses the findings about the effects of the implementation of flipped learning on the development of metacognitive skills in an EFL course of sixth-grade students at a private bilingual school in the city of Cali, Colombia. Firstly, the perceptions of both students and teachers regarding their teaching-learning processes in the context of a Private Bilingual School in Cali were carefully analyzed.

Determining the impact of implementing flipped learning on metacognitive skill development among the sixth-grade EFL students involved a structured approach rooted in educational research methodologies. These tools helped assess students' awareness and control of their learning processes before, during and after the intervention. Following the implementation of flipped learning, qualitative methods such as classroom observations provided insights into how students engage with and reflect on their learning. Observations captured behavioral indicators of metacognitive strategies, such as goal-setting, monitoring, and evaluating their own comprehension and learning strategies during both independent and collaborative learning activities facilitated by the flipped model.

Quantitative data, including pre- and post-intervention assessments were analyzed using statistical methods to measure changes over time. Comparisons with historical data strengthened the findings by isolating the effects of flipped learning on metacognitive development.

Additionally, triangulating various data sources ensured a comprehensive understanding of the impact. This multifaceted approach determined the immediate effects of flipped learning on metacognitive skills and contributed to the broader discourse on effective instructional strategies in EFL contexts.

Students’ substantial participation rate helped this research by proving different perspectives and contributing to a more detailed comprehension of the ongoing teaching-learning process in sixth-grade EFL classrooms. This aligns with (Vygotsky's, 1978) sociocultural theory, which emphasizes the importance of social interaction and diverse viewpoints in learning. The initial disagreement on teaching effectiveness highlighted the need for an instructional design where students felt empowered to voice their concerns and contribute to the improvement of

teaching practices. The flipped learning model provided students with more opportunities for reflection as they engage with course content independently.

Students' appreciation for multimedia resources highlighted the integral role of technology in modern language education. According to (Prensky, 2001), by leveraging multimedia resources, educators can provide interactive and engaging learning experiences, catering to different learning styles and preferences. This finding aligned with the literature and research on technology-enhanced language learning, which emphasizes the potential of multimedia tools to enhance language acquisition. Through its diverse functionalities, it facilitated accessibility to instructional materials, promoted interactive communication and collaboration. Additionally, technology enabled asynchronous communication and collaboration among both students and instructors. Consequently, technology proved to be a powerful tool in effectively implementing flipped learning strategies and developing metacognitive skills among young students.

The results revealed a generally positive attitude towards the flipped learning approach, with students demonstrating autonomy and increased engagement in their learning process. Additionally, the teacher also expressed satisfaction with the increased student participation and active involvement facilitated by the flipped learning model. The design and implementation of a didactic proposal directed at the development of metacognitive skills through flipped learning produced promising results.

The organized and flexible nature of the flipped classroom setting provided students with opportunities for reflection, critical thinking and self-regulated learning. By participating in pre-class activities such as video activities and readings, students were able to engage with course material at their own pace, thus enhancing their comprehension and metacognitive awareness.

This research examined the application of metacognitive skills to other language learning domains, revealing notable improvements in students' ability to monitor and regulate their learning strategies across different linguistic contexts. This suggested that the benefits of flipped learning extended beyond the boundaries of the EFL classroom, enriching the development of students' metacognitive capabilities skills. Although, the potential of flipped learning as a pedagogical approach to cultivate metacognitive skills among sixth-grade EFL learners was highlighted, further research is necessary. to explore the long-term effects of flipped learning on metacognitive development and its significance for language learning pedagogy.

The research provided evidence of students taking responsibility for their own learning by engaging with pre-recorded multimedia resources outside of class time. This encouraged sixth-grade students to develop self-regulation skills, such as monitoring their progress, managing their time efficiently, and setting goals. By taking an active role in their learning outside of the classroom, students developed a sense of ownership and autonomy over their learning process.

This increased autonomy encouraged students to become more self-directed learners, capable of identifying their learning needs and seeking out resources to address them. According to (Zimmerman, 2009), this aligns with the principles of self-regulated learning which emphasize the role of self-monitoring and reflection in academic achievement.

The metacognitive skills developed by the students through the implementation of the flipped learning sessions were advantageous and beneficial for the immediate context of the EFL course, and additionally, had the potential for long-term transfer to other academic subjects and real-life situations. As students became more competent in monitoring and regulating their own

learning, they were more prepared to handle new challenges and adapt to different learning environments.

(Bishop and Verleger, 2013) highlight the flipped learning potential to cultivate self-directed learning habits and critical thinking skills. Flipped learning sessions involved the inclusion of collaborative and interactive activities during class time, where students demonstrated the application of the knowledge, they gained independently to solve real-world problems, and engaged in meaningful discussions. This process required students to think critically about their learning strategies and approaches.

By fostering reflective practices and collaborative learning experiences, flipped instruction gives students the necessary abilities and perspectives for their future academic pursuits. This preparation for lifelong learning aligns with the objectives of 21st-century education, which underscore the importance of developing adaptable learners capable of navigating an ever-changing world.

The implementation of a flipped learning methodology in my research on metacognition within the realm of English as a Foreign Language (EFL) substantively enhanced students' metacognitive skills. As stated by (Schraw and Dennison, 1994), metacognition encompasses the conscious awareness and understanding of one's cognitive and learning processes. The flipped learning model, characterized by proactive pre-class preparation and dynamic engagement during classroom sessions, provided students ample opportunities to deliberate upon their learning processes before and after direct instructional encounters.

(Hattie, 2009) underscores the crucial role of effective feedback mechanisms and self-regulatory practices in nurturing metacognitive development. Within the flipped classroom framework, students received prompt feedback on preparatory activities, enabling them to refine

their learning approaches and objectives accordingly. This iterative cycle empowered students scrutinize their comprehension levels and adapt their learning strategies in real-time, thereby cultivating heightened metacognitive acumen and governance.

Additionally, (Vygotsky's, 1978) social constructivist theory accentuates the significance of collaborative learning environments in cognitive maturation. In the flipped classroom environment, collaborative engagements during instructional sessions prompted students to articulate their cognitive processes, engage in discourse with peers to clarify their understanding, and receive constructive feedback, an indispensable catalyst for metacognitive advancement.

In conclusion, the flipped learning method fostered active learner engagement and profound comprehension, and additionally nurtured the development of metacognitive skills among EFL learners by promoting reflective practices, self-regulation, and collaborative learning dynamics.

Discussions

The results of this research offer valuable insights into how flipped learning influenced the development of metacognitive skills among sixth-grade students at a Private Bilingual School located in Cali, Colombia. This discussion chapter thoroughly assesses the importance of this research findings in relation to established theories, existing literature, and previous research while also acknowledging any biases or potential limitations in the research and suggesting interpretations or implications for the observed results.

(Strayer, 2012) points out the transformative capacity of technology in enhancing access to learning materials, and its role in cultivating self-directed learning behaviors among students. The majority of students conveyed gratitude for the variety of interactive learning engagements, and the multimedia resources. Technology played a crucial role while executing the flipped

learning sessions, emphasizing its transformative potential in access to language learning materials and fostering self-directed learning practices among students. The importance of technology in facilitating flipped instruction emerged consistently throughout the research components.

The significance of metacognitive development in EFL learning was a central theme arising from the analysis. (Brown, 2019) highlight the contribution of metacognition to language learning and students' academic achievement. Additionally, the importance of metacognitive development in EFL learning was validated through both quantitative and qualitative collection instruments. Additionally, the findings in this research indicated that while students manifested exhibited degrees of metacognitive awareness, there was a collective recognition of its essential importance in promoting language learning and academic success.

Following the implementation of flipped learning, sixth-grade EFL students at a bilingual school in Cali, Colombia, demonstrated significant advances in their metacognitive abilities. They notably improved their self-regulation by setting clear learning goals, monitoring their progress independently, and adjusting their study approaches based on ongoing self-assessment and feedback. Students also exhibited enhanced proficiency in planning and organizational skills, effectively managing their study routines and educational materials to optimize learning outcomes. Reflective practices played a crucial role as students engaged in critical self-reflection on their understanding of course content, identifying areas of strength and areas needing improvement to guide their learning path.

Additionally, flipped learning methodologies fostered the development of problem-solving skills during interactive classroom sessions, where students collaboratively applied learned concepts to tackle real-world challenges. This collaborative environment not only

strengthened their critical thinking skills but also promoted effective communication and teamwork. In general, the adoption of flipped learning enriched students' repertoire of metacognitive skills, promoting autonomy, reflective practice, and strategic thinking in their EFL educational experience.

According to (Bergmann and Sams, 2012), flipped instruction empowers learners to take charge of their learning pace and preferences. The findings concerning time management proficiency and learning strategies aligned with previous research that underscored the role of flipped learning in enhancing students' self-directed learning abilities. The inherent flexibility of flipped learning enabled sixth-grade students to optimize their study habits, fostering a sense of autonomy and mastery over their learning environment. This, in turn, nurtured the development of efficient time management skills and adaptable learning approaches adapted to students' individual requirements and needs.

According to (Zimmerman, 2000), the proactive setting of learning objectives enabled by flipped instruction reflects the self-regulatory aspect of metacognition, where learners actively monitor, regulate, and modify their learning approaches This study evidenced the development of reflective practices and goal-setting that resonated with literature that stressed the advantages of active learning of metacognition in language education. Through engagement in pre-class activities and the establishment of personal language learning objectives, students demonstrated increased awareness of their learning processes and a stronger sense of empowerment in achieving language proficiency.

These findings underscore the intricate nature of student engagement and emphasize the necessity of adapting instructional strategies to accommodate diverse learning requirements. The support for active learning methodologies and peer collaboration through flipped instruction

aligns with Vygotsky's constructivist learning theories (1978) which underscore the social and collaborative aspects of knowledge construction.

A notable revelation from the analysis was the transition towards an active approach to language learning, including cognitive, affective, and social facets. Students' positive acceptance of experiential learning approaches highlighted the significance of authentic language usage within meaningful contexts. The collaborative learning atmosphere created by flipped learning instruction generated a spirit of comradeship and solidarity among students, which motivated active involvement in knowledge generation and sharing.

Through engaging in reflection, collaborative tasks and peer discussions, students were able to strengthen their understanding of the course content, and also, enhance their metacognitive awareness. Additionally, the emphasis on developing self-regulated learning and metacognitive awareness emphasized a commitment to provide students with the competencies essential for lifelong learning and independent language acquisition.

The results revealed that the sixth-grade participants in this research gained substantial growth in both lower-order thinking skills (LOTS) and higher-order thinking skills (HOTS) after the implementation of the eighteen (18) flipped learning sessions. LOTS, including remembering and understanding, were enhanced through pre-class activities that focused on engaging with new vocabulary and grammar. Participants showed better recall and comprehension as they interacted with pre-class materials, which prepared them for more intricate cognitive tasks.

Meanwhile, HOTS, such as applying, analyzing, evaluating, and creating, were significantly improved through interactive in-class exercises that encouraged critical thinking and problem-solving. The flipped learning model, as described by (Bergmann and Sams, 2012), created a learning environment where students could collaboratively solve their class activities

and engage in reflective practices. This approach deepened their understanding and helped develop students' metacognitive abilities, enhancing their capacity to plan, monitor, and evaluate their learning strategies. The dual emphasis on basic knowledge and higher-order skills demonstrates the effectiveness of flipped learning in supporting comprehensive cognitive growth in EFL contexts.

Additionally, the flipped learning methodology affords students the opportunity to self-monitor their learning progress and adjust strategies accordingly, consistent with (Flavell's, 1980) conceptual framework of metacognition.

Research Implications for the Field of Study

The results previously discussed helped to emphasize the importance of implementing student-centered methodologies that prioritize cooperation, active involvement, and metacognitive development. Additionally, the discussion offered various suggestions for teaching strategies in EFL settings. Instructors need to foster a supportive learning environment that promotes innovation, reflection and exploration, as a result, thus, providing students with the tools to manage their learning their educational academic progress autonomously.

In this investigation, informed by (Vygotsky's, 1978) Zone of Proximal Development, it was observed notable enhancements in metacognitive skills among the sixth-grade students. By interacting with pre-recorded materials, readings, and videos ahead of scheduled sessions, students exhibited heightened readiness for engaging in complex cognitive tasks during synchronous interactions. (Hattie, 2009) states that this transition from passive reception to active participation fosters deeper comprehension and metacognitive introspection.

The research conducted on the effects of implementing a flipped learning methodology on the development of metacognitive skills in sixth-grade EFL students at a bilingual school in

Colombia carries significant implications that extend beyond the specific context of sixth-grade EFL education in Cali, Colombia, providing valuable insights for researchers, educators, and educational authorities in the field of EFL education around the globe.

This research provides new perspectives into the capability of flipped learning methodologies for enhancing metacognitive skills in EFL students, therefore, researchers can further investigate the processes supporting this correlation and investigate best practice approaches. Longitudinal studies can provide deeper insights into the impact of implementing extended flipped learning sessions in EFL education.

Given that this research was conducted in a bilingual school in Colombia, highlighting the importance of considering cultural factors in EFL research and practice, new research could explore the influence of cultural contexts in the effectiveness of flipped learning approaches and adapt them accordingly. Additionally, future research can investigate the long-term effects of flipped learning on metacognitive skills development and language proficiency, also it could be explored and experimented with flipped learning models to enhance student engagement and learning outcomes where language educators focus on explicitly targeting metacognitive skills development in their EFL instruction.

Implementing flipped learning effectively requires teachers to adopt new instructional methods and strategies. This research suggests the need for continuous teacher training and professional development programs to teach educator how to implement flipped learning in their classrooms. Teacher trainers are called to design, and carry out professional growth programs to give educators the knowledge and skills needed for implementing innovative teaching methodologies in their classrooms.

Flipped learning relies on technology for content delivery and interaction, thus educators can investigate ways to effectively integrate digital tools and platforms into their teaching practice to support flipped learning initiatives and adapt to diverse students' learning styles. Educators should explore the use of technology to design alternative assessment methods that align with the principles of flipped learning and metacognition.

Academic policymakers and curriculum developers can consider integrating flipped learning approaches into EFL curriculum frameworks, and provide guidelines and resources to support educators in implementing flipped learning initiatives effectively. Additionally, these academic developers can design assessment strategies to align with the principles of metacognitive skills development and flipped learning, and thus, encouraging the application of innovative assessment practices where students' learning outcomes can be accurately measured in flipped learning settings.

Research Limitations on the Present Study

This research offers valuable insights and also it is important to acknowledge the limitations it presents because they provide opportunities for further research and highlight the necessity for careful interpretation of the findings.

Firstly, the duration and intensity of the intervention, consisting of eighteen (18) flipped learning sessions of ninety (90) minutes each could be another limitation of the research. According to (Plumridge and Thomson, 2003) longitudinal studies are needed to assess the durability and transferability of instructional interventions over time. The intervention conducted in this research allowed for meaningful engagement with flipped instruction, however, it fails to capture the long-term effects or sustainability of flipped learning on metacognitive skills development.

The small sample size of 24 students in a single sixth-grade course could limit the generalizability of the study's findings. As noted by (Field, 2013), having small sample sizes heightens the risk of Type I and Type II errors, limiting the reliability and validity of research findings. Even though the study provides clear information about the specific context of this particular group of students, it is advised to be careful when applying the results provided her to larger populations of students or other educational environments.

Additionally, the gender distribution within the sample, with 12 boys and 12 girls, could generate potential biases or limitations in the findings. Therefore, the equal representation of boys and girls in the study sample could not adequately capture any potential gender-specific effects of flipped learning on metacognitive skills development. According to (Gurian and Stevens, 2004), gender differences in learning styles, preferences, and academic performance needs to be well-documented in educational research.

By focusing on a specific proficiency level (CEFR A2) among sixth-grade EFL learners, this research could limit the generalizability of the findings to learners at different proficiency levels. Krashen (2012) points out that language proficiency levels influence learning outcomes, with learners at lower proficiency levels requiring different instructional approaches than those at higher levels.

This research was conducted at a bilingual school in Cali, Colombia, a very specific educational context. Therefore, the generalizability of the findings to other cultural or linguistic contexts is limited, as well as, the effects of flipped learning on metacognitive skills development across diverse cultural and linguistic contexts.

In summary, while the study offers valuable perspectives on the impact of flipped learning on metacognitive skills development in sixth-grade EFL students, it is imperative to recognize the limitations inherent in the research process.

Recommendations for Further Research

Based on the research findings on the effects of flipped learning methodology on the development of metacognitive skills in sixth-grade EFL students in Colombia, different recommendations for future research can be made, so that the understanding and application of this teaching approach can be further enhanced.

Longitudinal research, to assess the long-term effects of flipped learning on metacognitive skill development can be conducted. Students' progress should be followed beyond the sixth grade to determine if the benefits observed persist over time or diminish. Also, the role of parental involvement and support in flipped learning environments can be investigated, as to gain insights on how parents can be engaged in the learning process and how their involvement could influence students' metacognitive skill development.

The role of teacher training and ongoing support in implementing flipped learning effectively can be investigated, as to explore how teacher expertise and comfort with the methodology can influence student achievement. Additionally, new research can explore the integration of innovative technological tools and platforms to enhance the flipped learning experience. Thus, it could be investigated how features such as discussion forums, interactive multimedia content, or collaborative online projects contribute to students' metacognitive skill development.

The effectiveness of flipped learning can be compared with other instructional methodologies in developing metacognitive skills. This could include project-based learning

traditional teacher-led instruction, or other innovative approaches. Collaborative research can be carried out with experts in fields like cognitive psychology or educational neuroscience to deepen the understanding of the cognitive processes underlying metacognitive skill development in the context of flipped learning.

The research could include diverse contexts such as different grade levels, school settings and diverse cultural backgrounds. These contexts could provide a wider understanding of how flipped learning impact metacognitive skill development across various educational settings. Qualitative research should be conducted to gather students' perspectives on flipped learning and its impact on their metacognitive development. This could shed light on how students' own learning processes should be perceived, and areas for improvement could be identified from their feedback.

By addressing these areas in future research studies, researchers can continue to further the application of flipped learning methodology to assist students in enhancing their metacognitive skills in different educational settings.

Conclusions

This research aimed to answer what the effects of the implementation of flipped learning were on the development of metacognitive skills in an EFL course of sixth-grade students in a Private Bilingual School in the city of Cali, Colombia.

According to (Bergmann and Sams, 2012), Flipped learning involves delivering instructional content outside of class and utilizing class time for interactive activities, showing potential to enhance metacognitive skills. Based on the studies analyzed in the Literature Review Chapter, flipped learning encourages students to assume greater responsibility for their learning, fostering abilities such as self-regulation, goal-setting, and monitoring of learning strategies.

Independent engagement with content prior to class allows students to reflect on their comprehension and identify areas needing clarification, thereby supporting metacognitive development.

Additionally, in-class activities, emphasizing collaborative problem-solving and application of knowledge, offer additional opportunities for students to practice metacognitive skills such as self-assessment and adaptation of learning approaches based on feedback.

Insights gained from this study contribute to discussions on effective educational methodologies, highlighting their role in promoting deeper learning and cognitive growth among students in diverse learning environments.

Following the detailed analysis of the research data, various conclusions emerge:

- Sixth-grade students significantly enhanced the development of their metacognitive skills with the flipped learning implementation. Through processes such as self-evaluation, reflective growth, goal setting, and, students demonstrated an increased awareness of their learning process, fostering proactive engagement and management of their language learning progression.

- Academic success and reinforced self-confidence among the EFL students can be directly related with flipped learning. Students exhibited greater confidence in their language abilities, fostering a positive attitude towards learning, by taking ownership of their learning process and actively participating during the proposed class activities.

- Students learned to make efficient use of their study time and apply different learning strategies adapted to their individual needs and likes. Flipped learning methodology greatly contributed to students' enhanced time management skills and the implementation of effective learning techniques.

- Through pre-class interactive assignments and in-class activities, students engaged in meaningful discussions, collaborative sessions with their partners, empowering their learning experience and fostering metacognitive awareness. Thus, flipped learning facilitated active learning methods and fostered peer collaboration among the sixth-grade students.
- The implementation of the flipped learning sessions prepared students for lifelong learning by promoting self-directed learning skills and autonomy Through engaging in activities at their own pace and conducting self-directed study, students were able to assume ownership of their learning, establish their learning objectives, and track their advancement, thereby developing adaptability and resilience for future challenges.

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Appendices

Appendix A

Resumen Analítico Especializado (RAE)

Resumen Analítico Especializado (RAE)	
1. Título	Empoderando a los estudiantes de EFL: explorando el papel del aula invertida en el fomento de las habilidades metacognitivas más allá de los enfoques tradicionales.
2. Autores	Fabián García Sarasty
3. Fecha	Mayo 25 del 2024
4. Palabras claves	Aprendizaje invertido, habilidades metacognitivas, educación de inglés como lengua extranjera, integración de tecnología, aprendizaje activo, compromiso estudiantil.
5. Descripción.	Dentro del ámbito educativo, ha habido un énfasis creciente en la incorporación de las TIC (Tecnologías de la Información y la Comunicación). Su implementación ha proporcionado variados enfoques, materiales y técnicas de instrucción nuevas para asegurar que los estudiantes reciban una educación adaptada a diversos ritmos de aprendizaje. Thorne (2003) sostiene que la incorporación de Tecnologías de la Información y la Comunicación (TIC) en el proceso de aprendizaje de idiomas ha transformado profundamente las dinámicas de interacción entre los estudiantes y el contenido pedagógico. Asimismo, ha posibilitado la

	adopción de enfoques educativos más personalizados, que se adaptan a las necesidades específicas de cada estudiante. Esta investigación aborda los desafíos en la incorporación de la tecnología dentro del contexto educativo colombiano, investigando el impacto de implementar el enfoque de aprendizaje invertido en el desarrollo de habilidades metacognitivas entre estudiantes de sexto grado de inglés como lengua extranjera en un colegio bilingüe privado en la ciudad de Cali, Colombia. La investigación se centró en brindar contenido educacional en línea por medio de la metodología de Aprendizaje Invertido previo a la clase y utilizar el tiempo de clase en actividades de aprendizaje activo. Al aprovechar la tecnología, el investigador buscó comprender cómo el aprendizaje invertido influía en el desarrollo de habilidades metacognitivas, ofreciendo valiosas contribuciones a la investigación educativa. Además, de superar las barreras para la exposición auténtica al lenguaje y la práctica significativa del idioma inglés para los estudiantes de sexto grado. El estudio reconoció limitaciones en la generalización a otros contextos y resaltó la importancia de futuras investigaciones que exploren dimensiones adicionales del aprendizaje invertido. Los hallazgos sugieren una correlación positiva entre el factor del aula invertida y el nivel de desarrollo significativo de habilidades metacognitivas entre los estudiantes de sexto grado que asisten al colegio bilingüe privado.

	El investigador espera que los hallazgos de la investigación puedan alentar a otros educadores a considerar la integración de enfoques de aprendizaje invertido en sus prácticas docentes, potencialmente mejorando la calidad educativa en la enseñanza del inglés.
7. Contenidos	1.Introduccion 2.Justificación 3. Definición del problema 4.Objetivos 5.Marco teórico 6.Definicion del diseño de investigación 7.Definicion de resultados 8.Conclusiones 9.Recomendaciones 10.Referencias bibliográficas 11. Anexos
8. Metodología	Esta investigación se centró en investigar los efectos del aprendizaje invertido en la metacognición, utilizando la metodología de investigación-acción. La investigación-acción se eligió por su capacidad para contribuir tanto al conocimiento teórico como a la práctica educativa, involucrando activamente a estudiantes y docentes en el proceso de investigación. Según (Vygotsky, 1978), el enfoque constructivista subraya la importancia del aprendizaje activo para que los estudiantes construyan su propio conocimiento basado en estructuras cognitivas existentes En este contexto,

	el aprendizaje invertido, que enfatiza el aprendizaje centrado en el estudiante e interactivo, se presenta como una herramienta prometedora para desarrollar habilidades metacognitivas (Bergmann y Sams, 2012). La investigación se llevó a cabo en un colegio bilingüe privado en Cali, Colombia, una ciudad conocida por su riqueza cultural y ambiente vibrante. El colegio atiende a estudiantes de diversos orígenes socioeconómicos, con el 90% proveniente de niveles medios a altos. A pesar de la alta motivación y aspiraciones académicas de los estudiantes, tanto ellos como sus familias expresaron preocupaciones sobre los desafíos derivados de su exposición limitada al idioma auténtico y las oportunidades de práctica. Basado en los estudios de (Bergmann y Sams, 2012), la adopción del aprendizaje invertido se planteó como una forma de elevar el estándar de la enseñanza de idiomas y fomentar el desarrollo de habilidades metacognitivas entre los estudiantes de grado sexto. Esta investigación utilizó el muestreo intencional para seleccionar participantes, un método elegido por su capacidad para dirigirse a individuos con características específicas relevantes para los objetivos de la investigación. (Patton, 2002) destaca que este enfoque garantiza la selección de una muestra altamente pertinente, facilitando una comprensión más profunda del fenómeno investigado. Para esta investigación se seleccionaron estudiantes de sexto grado de un colegio Bilingüe Privado en Cali, Colombia, con el objetivo de capturar una amplia gama de perspectivas y experiencias. La población de interés

	estaba compuesta por estudiantes de secundaria que representan una variedad diversa de antecedentes y experiencias. La muestra consistió en 24 estudiantes de sexto grado, con una distribución equitativa por género, y dos profesores de inglés del departamento de secundaria. En el año 2023, los estudiantes fueron evaluados utilizando el examen Cambridge KET for Schools, diseñado para personas en el nivel A2 de competencia en inglés, lo que sugiere que poseían habilidades básicas necesarias para la comunicación cotidiana. Esta investigación permitió que los estudiantes asumieran la responsabilidad de su aprendizaje y se convirtieran en estudiantes proactivos, independientes y competentes en el manejo de su proceso educativo. Más allá de mejorar los resultados del aprendizaje de idiomas, la investigación buscó preparar a los estudiantes para el éxito en un mundo cada vez más interconectado y competitivo.
9. Conclusiones	El objetivo principal de la investigación fue evaluar cómo el aprendizaje invertido mejora las habilidades metacognitivas en estudiantes de sexto grado de inglés como lengua extranjera en un colegio bilingüe privado, en la ciudad de Cali, Colombia. Tras el análisis detallado de los datos de investigación, surgen varias conclusiones: • Los estudiantes de sexto grado mejoraron significativamente el desarrollo de sus habilidades metacognitivas con la implementación del aprendizaje invertido. A través de procesos como la autoevaluación, la reflexión, el establecimiento de objetivos y la demostración de un

	aumento en la conciencia de su proceso de aprendizaje, fomentaron el compromiso proactivo y la gestión de su progresión en el aprendizaje del idioma. • El éxito académico y la autoconfianza reforzada entre los estudiantes de grado sexto pueden relacionarse directamente con el aprendizaje invertido. Puesto que, los estudiantes mostraron una mayor confianza en sus habilidades lingüísticas, fomentando una actitud positiva hacia el aprendizaje, al asumir la responsabilidad de su proceso de aprendizaje y participar activamente durante las actividades propuestas en clase. • Los estudiantes aprendieron a hacer un uso eficiente de su tiempo de estudio y a aplicar diferentes estrategias de aprendizaje adaptadas a sus necesidades e intereses individuales. La metodología de aprendizaje invertido contribuyó ostensiblemente al desarrollo de las habilidades de gestión del tiempo de los estudiantes y la implementación de técnicas de aprendizaje efectivas. • A través de tareas interactivas previas a la clase y actividades en clase, los estudiantes participaron en discusiones significativas y sesiones colaborativas con sus compañeros, fortaleciendo su experiencia de aprendizaje y fomentando la conciencia metacognitiva. Así, el aprendizaje invertido facilitó métodos de aprendizaje activo y fomentó la colaboración entre pares entre los estudiantes de sexto grado. • La implementación de las sesiones de aprendizaje invertido preparó a los estudiantes para el aprendizaje continuo al promover habilidades de

	aprendizaje autodirigido y autonomía. Al participar en actividades a su propio ritmo y realizar estudios autodirigidos, los estudiantes pudieron asumir la responsabilidad de su aprendizaje, establecer sus objetivos de aprendizaje y rastrear su progreso, desarrollando así la adaptabilidad y la resiliencia para enfrentar desafíos futuros.
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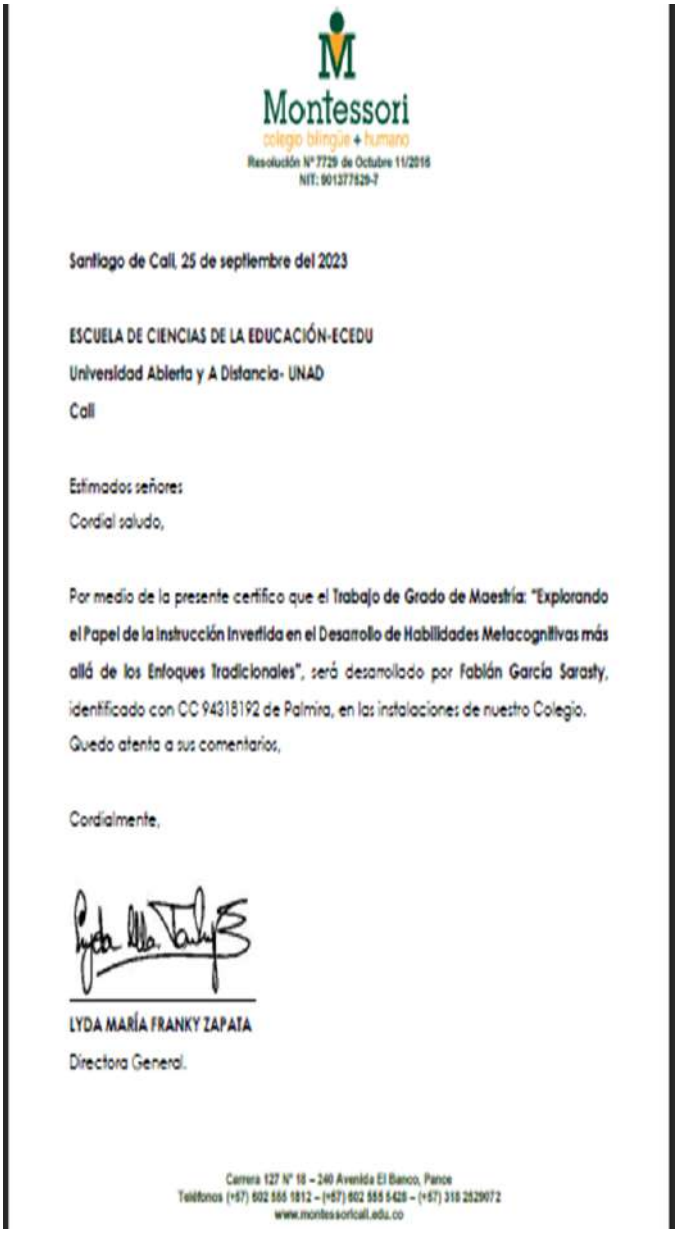
Appendix B

School Letter to Approve Research



Montessori
colegio bilingüe + humano
Resolución Nº 7729 de Octubre 11/2016
NIT: 901377529-7

Santiago de Cali, 25 de septiembre del 2023

ESCUELA DE CIENCIAS DE LA EDUCACIÓN-ECEDU
Universidad Abierta y A Distancia- UNAD
Cali

Estimados señores
Cordial saludo,

Por medio de la presente certifico que el Trabajo de Grado de Maestría: "Explorando el Papel de la Instrucción Invertida en el Desarrollo de Habilidades Metacognitivas más allá de los Enfoques Tradicionales", será desarrollado por Fabián García Sarasty, identificado con CC 94318192 de Palmira, en las instalaciones de nuestro Colegio.
Quedo atenta a sus comentarios,

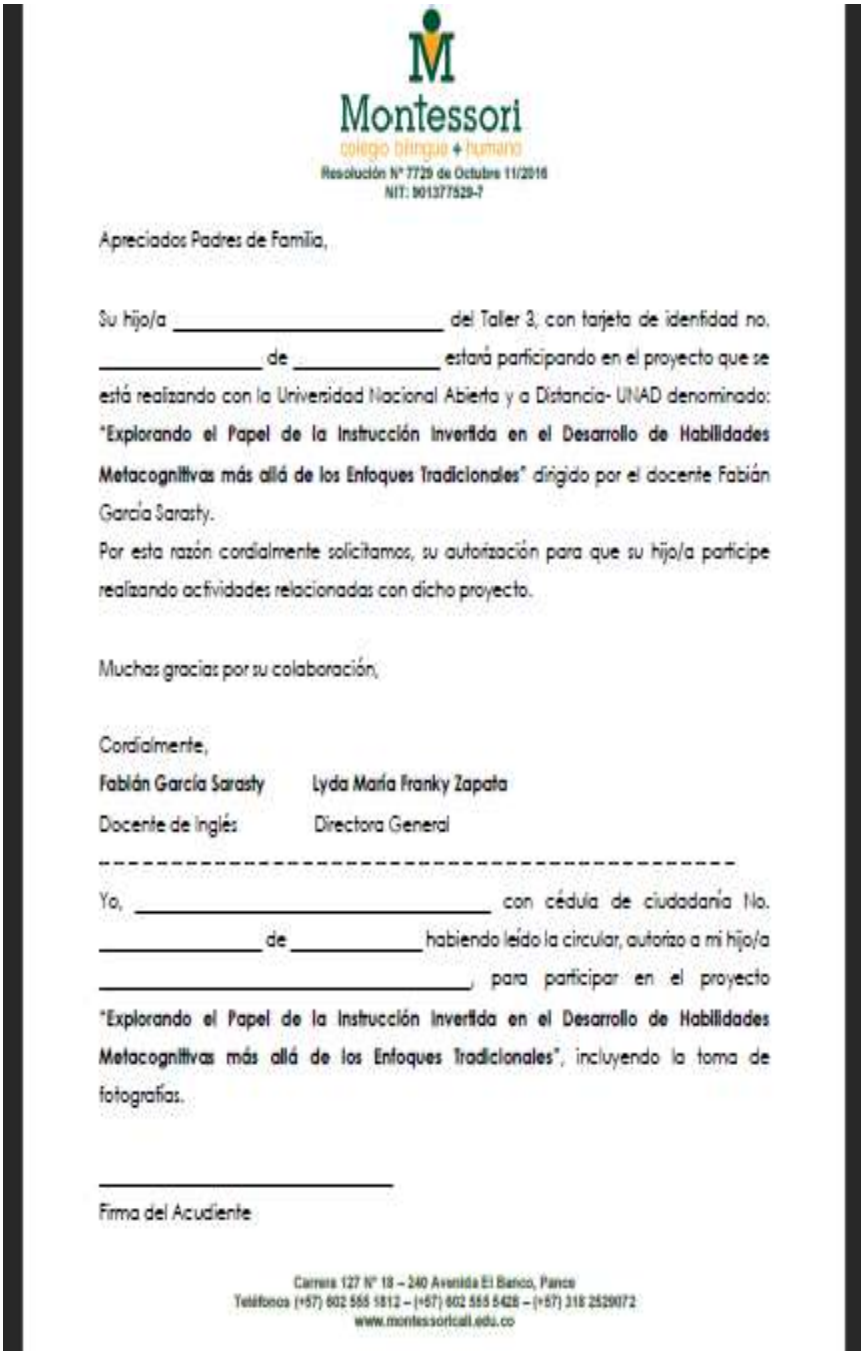
Cordialmente,

LYDA MARÍA FRANKY ZAPATA
Directora General.

Carrera 127 Nº 18 – 240 Avenida El Banco, Pance
Teléfonos (+57) 602 555 1812 – (+57) 602 555 5428 – (+57) 318 2529072
www.montessoricali.edu.co

Appendix C

Consent Format for Students and Parents



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Resolución Nº 7729 de Octubre 11/2016
NIT: 901377529-7

Apreciados Padres de Familia,

Su hijo/a _____ del Taller 3, con tarjeta de identidad no. _____ de _____ estará participando en el proyecto que se está realizando con la Universidad Nacional Abierta y a Distancia- UNAD denominado: **"Explorando el Papel de la Instrucción Invertida en el Desarrollo de Habilidades Metacognitivas más allá de los Enfoques Tradicionales"** dirigido por el docente Fabián García Sarasty.

Por esta razón cordialmente solicitamos, su autorización para que su hijo/a participe realizando actividades relacionadas con dicho proyecto.

Muchas gracias por su colaboración,

Cordialmente,

Fabián García Sarasty — Docente de Inglés

Lyda María Franky Zapata — Directora General

Yo, _____ con cédula de ciudadanía No. _____ de _____ habiendo leído la circular, autorizo a mi hijo/a _____, para participar en el proyecto **"Explorando el Papel de la Instrucción Invertida en el Desarrollo de Habilidades Metacognitivas más allá de los Enfoques Tradicionales"**, incluyendo la toma de fotografías.

_____

Firma del Acudiente

Carrera 127 Nº 18 – 240 Avenida El Banco, Pance
Teléfonos (+57) 602 555 1812 – (+57) 602 555 5428 – (+57) 318 2529072
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Appendix D

Description of Flipped Learning Sessions

FLIPPED LEARNING SESSIONS				
GENERAL OBJECTIVE		· To improve 6th-grade students' English proficiency and autonomy through flipped learning methods.		
SPECIFIC OBJECTIVES OF THE SESSIONS		· Students will be able to narrate past events · To promote and emphasize autonomous learning.by using technology in English class.		
UNIT 9 CONTENT		· Old and new technology.		
UNIT 9 OBJECTIVES		· Students will be able to talk about things that have changed in your life. · Students will be able learn to describe how things used to be. · Students will be able explore old technologies and gadgets.		
UNIT 10 CONTENT		· Inventions and discoveries		
UNIT 10 OBJECTIVES		· Students will be able to talk about things that happened to you recently. · Students will be able to learn to describe recently completed actions · Students will be able to find out about some interesting recent discoveries		
TALLER	**3**	**GRADE**	**6th**	
NUMBER OF SESSIONS		**18**		
DESCRIPTION OF THE FLIPPED LEARNINGSESSIONS				
SESION	**UNITS**	**ACTIVITIES**	**DESCRIPTION**	**RESOURCES/MATERIALS**
1	**UNIT 9**	Pre-assessment questionnaire	Formative assessment, diagnostic assessment	Computer, Internet, Pre-assessment test.
2		Interactive Activity	Students practice with an online interactive activity.	Computer, Tablet, Smartphone, Internet, activity link.
3		YouTube Video	At home, students watch a video, which shows different inventions and prepare questions or doubts they might get.	Computer, Tablet, Smartphone, Internet, YouTube links
4		Textbook Study	Students work on the given activities from their books.	Textbook, discussion prompts

5		Song Listening Activity	At home, students listen to a song about some past events.	Computer, Tablet, Smartphone, Internet, activity link.
6		Textbook Exercises	Students work on the given activities from their books.	Textbook, answer key
7		Interactive Activity	Students practice with an online interactive activity.	Computer, Tablet, Smartphone, Internet, activity link.
8		Group Project presentation	At home, students look for information and prepare a presentation.	Research materials, presentation guidelines
9		UNIT QUIZ	Students put their knowledge into practice with an online interactive activity.	Computer, Tablet, Smartphone, Internet, activity link.
10	**UNIT 10**	YouTube Video Discussion	At home, students watch a video, which shows different inventions and prepare questions or doubts they might get.	Computer, Tablet, Smartphone, Internet, activity link.
11		Textbook Study	Students work on the given activities from their books.	Textbook, discussion prompts
12		Timeline Project	Students create a timeline illustrating the development of a significant scientific discovery.	Research materials, presentation guidelines
13		Interactive Activities	Students practice with an online interactive activity.	Computer, Tablet, Smartphone, Internet, activity link.
14		Textbook Practice	Students work on the given activities from their books.	Textbook, discussion prompts
15		UNIT QUIZ	Students put their knowledge into practice with an online interactive activity.	Computer, Tablet, Smartphone, Internet, activity link.
16		Final assessment session	Summative assessment, feedback	Computer, Internet, Pre-assessment quiz, answer key.
17		Post-assessment questionnaire	Summative assessment, feedback	Computer, Internet, Post-assessment test
18		Interviews	Students' insights on the implementation sessions	Computer, Internet, Post-assessment test

Appendix E

Evidence of Collection of Data in the School

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Resolución No. 0095 (Febrero 2004), Resolución No. 7729 (Octubre 2016) y Resolución No. 01018 (Marzo 2021)
NIT: 901377529-0
Código DANE: 376001029932

Santiago de Cali, Mayo 23 del 2024

Diana Liceth Martínez
Líder Nacional Maestría en Mediación Pedagógica en el Aprendizaje del Inglés
Universidad Nacional Abierta y a Distancia – UNAD

Cordial saludo.

Por medio del presente, damos fe que, al estudiante de Maestría en Mediación Pedagógica en el Aprendizaje del Inglés, Fabián García Sarasty, identificado con C.C. 94318192, le fue aprobado el permiso para hacer la recolección de Datos Cuantitativos y Cualitativos, para el proyecto de Investigación "*Empoderando a los estudiantes de EFL: Explorando el papel de la instrucción aula invertida en el desarrollo de habilidades metacognitivas más allá de los enfoques tradicionales*".

Este comunicado se expide a los 23 días del mes de Mayo del 2024.

Cordialmente

Jesús Vicente Benavides
Rector
Colegio Bilingüe Montessori
rectoria@montessoricali.edu.co

Carrera 127 N° 18 – 240 Avenida El Banco, Pance
Teléfonos: (+57) 602 555 1812 – (+57) 318 252 9072