

ESCUELA SUPERIOR POLITÉCNICA DEL LITORAL

Facultad de Ciencias Sociales y Humanísticas



**“THE FLIPPED CLASSROOM MODEL ON B1 STUDENTS’ ACHIEVEMENT IN THE
LEARNING OF GRAMMAR IN ENGLISH AS A FOREIGN LANGUAGE”**

**A DISSERTATION SUBMITTED IN PARTIAL SATISFACTION
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF EDUCATION IN TEFL**

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GUAYAQUIL – ECUADOR

2017

ACKNOWLEDGEMENTS

First, we would like to express our most sincere appreciation to Ph.D., Jorge Flores for tutoring and enlightening us with patience and practical support during all this process. Thanks a lot for your guidance in every moment we needed.

Thanks a lot to both of our master program's directors; MSc. Helen Camacho and MSc. Karen Yambay for being so supportive and encouraging until the very end so that nobody would be left behind, thanks for such a great commitment.

We would also like to thank the members of the committee, Master Karen Yambay, MAP. Dennis Maloney, and Dr. Jorge Flores. A big thank to all of you for your time and knowledge you kindly shared with us as our professors and for making this achievement possible. Many thanks to all the 16 professors, who taught us with responsibility and seriousness, but also with commitment and for encouraging us in every one of their subjects.

Special thanks to MSc. Graham Stagg who kindly guided and supported us during the thesis process.

We wish to thank our participants for being willing to take part in this study, for providing us with the necessary data.

Finally, and always, much love and many thanks to our great family who has always been our support, without them, we would not have accomplished this great and valuable goal.

DEDICATION

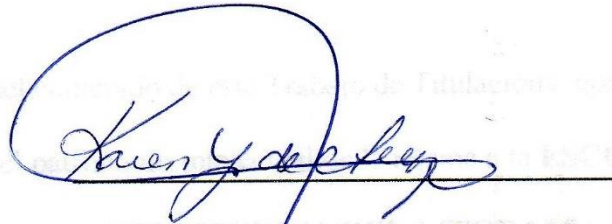
This document is dedicated to my beautiful and smart daughter and best friend, Maria Isabel,
who, at her short age, has supported me all the way.
To the memory of my dearest father, Mauro and to my beloved mother, Isabel, even though you
cannot realize it, mum, because of that illness, I did it!
And to my special friends, Anita and Kevin, whose encouragement never let me be down.

-Maritza Garcia

This work is dedicated to my dearest and lovely wife Alexandra B. de Pizarro, who has
continuously supported and encouraged me in every stage of my life, and who has greatly helped
me in a number of ways in this study to achieve this important goal. I would also like to dedicate
this study to my two beautiful and smart children Jaimito and Alexita who have been the
happiness in my home and an inspiration for me to succeed even in the most difficult moments in
my professional life.
Finally, to my parents Eduardo and Bethania, who have been my first and best teachers
academically as well as spiritually since I was born.

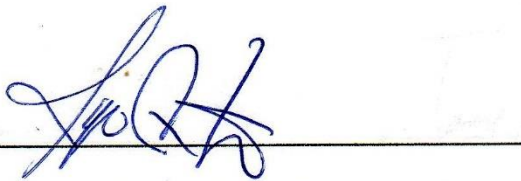
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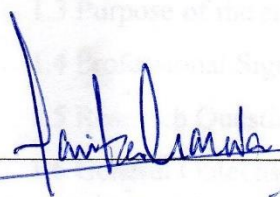
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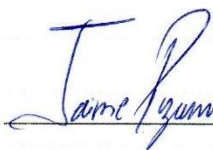
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ABSTRACT

The flipped classroom technique helps learners to become active rather than passive receptacles of information (Jinlei, Ying & Baohui, 2012) finding the opportunity to build their own knowledge at their own pace. Based on this principle, the researchers wanted to compare the impact and effectiveness of the flipped classroom technique on EFL students' achievement versus a traditional classroom instruction to teach grammar. This study was designed to gather evidence from 2 groups of 40 students each who were taking the intermediate course (B1) in a public university in Guayaquil, Ecuador to determine if they performed better in the flipped classroom or in the traditional classroom. For the flipped classroom, the teacher looked for videos to learn grammar together with some PowerPoint presentations to be seen and checked at home. Students then got ready for the next session. Students returned to their classrooms to complete homework and projects based on the material already sent. In the traditional classroom, students received their instruction via lectures. Students then practiced with the grammar content by completing homework outside the classroom. The researchers utilized a quantitative research design and used the program MINITAB 17 to analyze if the data followed a normal distribution to apply the t-test student and the paired t-test. The study investigated students' achievement between the students in the flipped classroom and those students in the traditional classroom. The findings indicated that students' achievement did improve with a flipped learning model being useful and effective to learn grammar fostering the autonomous work and groups working cooperatively which are essential tools when applying the flipped classroom.

Keywords: flipped classroom, quantitative study, method, traditional classroom, grammar achievement.

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CHAPTER I

1.1 Introduction

Teaching English as a second language is a challenge that every educator has to face especially in Ecuador, where the teaching of English, is conditioned by different factors such as the level of the students, the students' background and sometimes the lack of interest of the students mainly at university level. Grammar has been an essential part of learning a language, especially in the productive skills like writing and speaking in a more accurate manner. Even though, it has been taught and learned in a variety of ways and applied using different approaches and techniques, both deductive and inductive in nature, it still causes some inconveniences to educators due to the time it takes to present it. In order to cope with some of the factors that might interfere in the learning process, teachers have to go from being dispensers of facts to being architects of learning activities designing activities and using methods that students can experience to become active learners responsible for their own learning (Jinlei, Ying, & Baohui, 2012). Educators have used and applied different techniques to help students accomplish their goals and personalize their own learning in this millennium world (Flumerfelt & Green, 2013). The flipped classroom is a method that has become useful and efficient in the last decade (Butt, 2014) and has been adjusted to put its attention on new and innovative models of teaching (Vaughan, 2014). Vaughan added that teachers should be aware of the changing nature of education to prepare students in the correct way taking into account their goals as well their weaknesses and strengths in the technological world. According to Yunus, Salehi, & Nordin in 2012, EFL teachers are looking for new techniques and methods to teach and learn English more effectively considering the technological advances and the power that it has to transform teaching and learning (Meier, 2005). Besides, students use technology more than ever before,

which is an advantage as well as a way to engage them into writing. In 2011, Ismail said that writing is an important element of learning and it is seen as a process of discovering because when writers write they struggle thinking about what they will put in the papers as well as organizing their ideas in a well-structured way.

The flipped classroom has been known by different names included the inverted classroom, backwards classroom, or more simple like the flip (Arnold-Garza, 2014). They found out that this term evolved from the concept of hybrid or blended learning where a number of active techniques were used and combined with the available technology to engage students. Most credit about the creation of this method is given to Jon Bergmann and Aaron Sams who were chemistry teachers in a high school in Colorado. They started using recorded lectures for students who couldn't attend classes because of health problems. They found out that other students began watching those recordings as well. They saw that students felt more confident and engaged in participating in class, becoming active learners.

Taking all the above into account and looking for new strategies and techniques to reach students' goals and meet their needs, the academic head of the university where this study took place, decided to implement the use of the flipped classroom technique in some courses.

1.2 Definition and Statement of the Problem

Flipped classroom is a new technique that has given successful results to educators and learners in different areas of knowledge when it is applied properly. The flipped classroom method helps learners to become active learners rather than passive receptacles of information (Jinlei, Ying & Baohui, 2012) because students have the opportunity to build their own knowledge at their own pace to later participate actively in the classroom. Research suggests that twenty-first century learners prefer to learn by interaction and experience using active learning

techniques; that is why the flipped classroom is a powerful method that millennial students will enjoy as stated by Phillips & Trainor in 2014. This is the reason why the researchers planned to carry out a study in a public university in the city of Guayaquil to observe and analyze the effectiveness of the flipped classroom model for EFL students as well as verify if students' achievement rises.

Another reason for this important study is that this method has recently been applied in some pilot courses of the university, so the researchers want to see in this quantitative study through statistical results if it will help learners to get better results in their English grammar learning process.

In our teaching experience, students show neither interest in long explanations about how language works (a teacher-centered approach) nor in doing homework at home. The teaching-learning environment must be student-centered because teachers have to become more guiders and supporters to motivate their learners' active participation and self-discovery of the language. This tendency has helped teachers to be aware of the need to orientate students more towards a student-centered environment. Student-centered learning environment that is delivered with additional resources such as relevant materials enables learners to address their own learning needs and interests, which means that students have to become more independent, and actively involved in the classroom with the help of the teacher as a facilitator. The flipped course design does not just change what happens before, during, and after a class, but it also presents new challenges and opportunities in terms of grading and feedback.

1.3 Purpose of the study

The purpose of this study was to examine the efficacy of the flipped classroom delivery techniques comparing a traditional classroom in a public university located in the city of Guayaquil following a quantitative approach.

1.4 Professional Significance of the Study

It seems that nowadays the flipped classroom model would benefit more and more teachers and students because we are living in a digital era. Sinouvassane & Nalini (2016) in their study refer to the 21st-century generation as the ‘millennials’ or generation ‘Y’ because they have been born with a technological chip incorporated to their brain which enables them to succeed in the flipped classroom model as they show more propensity for working with technological things. Flumerfelt (2013) mentioned that in this new technological era, schools must be or get prepared to meet this need in order to show a continuous improvement regarding technological instructions. Similarly, Phillips & Trainor (2014), explained that millennial students have preferences for interactive and experiential learning approaches because they do not see these technological devices as tools but as a holistic part of their everyday lives. This new generation is described as self-confident, controversial, team-oriented, self-critical, demanding, and practical.

In Ecuador, schools are trying to update both teachers and the classrooms. The government is making a big effort to try to provide most of the public schools with the necessary technological devices and at the same time are offering courses to teachers to be digitally competent. Private schools have understood the need to incorporate computers, overhead projectors, the internet, audio and digital boards to promote and encourage learning. Phillips & Trainor (2014) argued that educators have to be aware and understand this technological

generation of learners in order to educate and guide them effectively. All these changes and advances are a big help and a good reason to incorporate the flipped classroom model in class.

Students who begin their studies at university have experienced and benefited from the use of technological devices at different times of their previous years of study and have great interest and expectations to become more independent and autonomous learners. Students are becoming more and more aware that the educational setting is changing with the help of the technology and different techniques have been implemented. However, many institutions are struggling to help students learn grammar as a fundamental tool to speak and write accurately.

Taking the advantage that the University is running this methodology and being the English department one of the subjects involved in the new project, the decision to run the present study was taken to compare the traditional method and the flipped classroom technique to identify the advantages and disadvantages of each.

1.5 Research Questions

Based on a complete review of the literature and the importance of the topic in our educational context, the researchers presented four research questions to guide this quantitative study. These questions focused on the impact of the flipped classroom model on B1 students' achievement in the learning of grammar as a foreign language.

1. What difficulties do learners and teachers encounter when dealing with grammar in the EFL classroom?
2. What advantages and disadvantages do learners and teachers find when applying the flipped classroom in an EFL context?

3. How do students in classrooms utilizing flipped instruction, and traditional instruction with lecture-homework learning strategies, compare academically on grammar achievement?
4. What is the level of satisfaction of the students at the end of the intervention?

1.6 General Objectives:

The general objective of this study is to examine the effectiveness of the flipped classroom method on EFL students' achievement versus that of a traditional model in a public university in Guayaquil.

1.7 Specific Goals:

To determine how the flipped classroom affects the students' achievement in an EFL classroom.

To compare how the application of the flipped model in an EFL classroom differs from a traditional class.

To determine the level of students' satisfaction at the end of the intervention.

1.8 Background of the Study

This study was carried out in a public university in Guayaquil.

As a part of its academic requirements, students must take EFL courses during their academic studies. The language center of this public university offers these English language courses to the students. If students do have previous knowledge of the language, they can take a placement test to see the level of their knowledge and according to it, they then are assigned to the corresponding level. The language courses currently consist of six levels that range from A1 to B1+ according to the Common European Framework of References (CEFR). These levels are organized around reading and vocabulary, writing and grammar, and listening and speaking.

Basic A (A1) level is taught using blended learning in which students meet only once a week in a 2-hour-face to face session with their teacher. In this session, students have the opportunity to clarify doubts and make all the necessary questions that might have arose from checking the content in an online platform developed by the same institution in which students need to complete 4 hours of autonomous study.

From Basic B (A2) to Intermediate B (B1), students have to attend 6 hours of class per week. Nevertheless, in the Advanced courses (B1+) students attend 4 hours per week only.

All the courses have different content, which is recycled in the corresponding level in a different context and with a greater level of complexity.

During the classes, teachers try to vary all the techniques used in order to deliver the content along with their training, teaching experience, and teaching practices and beliefs.

The institution has developed a virtual learning platform that allows teachers to open forums for discussion, upload links for revision and set, receive and evaluate homework. This platform is the online communication tool between teachers and students. This rich variation of resources makes a positive contribution to the teaching and learning process of EFL.

All teachers in the Language Center try to incorporate computer-aided learning in their classes with the idea of using technology to aid students' achievement in all the skills.

This eagerness of engaging learners in a more dynamic system of learning has opened the door to the flipped learning, which combines face-to-face learning with at-home technology components (Bergmann & Sams, 2012; Overmyer, 2014). This gives students the opportunity to work at their own pace and in a more autonomous way collaborating with their peers when they meet in groups at their regular classes.

1.9 Conclusion

The flipped classroom technique is an exceptional combination of constructivist with behaviorist principles. Learners are actively involved in knowledge construction through their interactions with their peers, their teachers and the learning material (Duffy and Cunningham, 1997) in order to move from a lower-order to higher-order evaluation skills (Bloom and Krathwohl, 1956 as stated by Limniou, M., Lyons, M., & Schermbrucker, I., 2015). Generally, flipped classroom promotes activities before, during and after a formal class. Learners study learning material and/or participate in online activities before face-to-face sessions in order to get familiar with a learning topic and to gather questions about it. These questions and misconceptions are key points in the process since they lead the teacher to guide learners in the classroom by providing the necessary help to work through problems individually or in groups to explore the knowledge fostering cooperative learning and facilitating their learning process in all circumstances. Before the face-to-face session finishes, teachers offer additional explanations and resources to continue guiding students toward deeper understanding (Pierce and Fox, 2012; Strayer, 2012).

Flipped classroom activities motivate learners' engagement and teachers guide them to deeper thinking following Bloom's taxonomy (before class: knowledge, comprehension, during class: application, analysis, synthesis and after class: evaluation) (Krathwohl, 2002; McLaughlin et al., 2013 as stated by Limniou, M., Lyons, M., & Schermbrucker, I., 2015). Consequently, learners are conducted through interactions with learning material and discussions/collaborations with their peers, while their teachers facilitate their learning allowing them to follow a path that is more effective for their learning (Gilboy, Heinerichs and Pazzaglia, 2015).

The Flipped classroom approach combines a number of teaching methods and builds on theories such as student-centered learning, constructivism, problem-based learning and peer assisted learning.

The researchers followed the above-mentioned process in order to analyze the differences between the traditional methodology and the flipped classroom techniques having a great impact on the learners as well as on the instructors.

CHAPTER II

Review of the Literature

2.1 Introduction

The main purpose of this review of the literature is to explain how the theory of flipping techniques can be applied to teach grammar in a student-centered environment.

It also explains the different roles of grammar in the various theories of language acquisition as well as in the methods and approaches to EFL teaching, and how they have changed with the help of technology over time.

2.2 Theories of Second Language Acquisition

Some of the theories of Second Language Acquisition that have been the foundation for the different processes to teach EFL and grammar instruction are behaviorism, cognitivism, and Krashen's (1982) theory of acquisition and learning which have influenced the assortment of common methods and approaches to grammar methodology and foreign language teaching.

2.2.1 Behaviorism.

According to Graham (2011), Behaviorism was one of the first theories to influence foreign language methodology, the role of grammar and the teacher's roles. This theory implies that all human behavior, including language acquisition, is conditioned and reinforced either positively or negatively (Harmer, 2003). Behaviorist principles have confirmed that language is acquired through stimulus–response–reinforcement, a pattern that also applies to other skills that children learn at an early age. This behaviorist pattern has influenced traditional language methods used with adult learners for several decades (Harmer, 2003).

By the 1950s and 1960s, most syllabus design in textbooks followed traditional approaches influenced by behaviorism. Teachers used materials and activities that followed the

approaches suggested by the textbooks. Teachers' attention was drawn to the application of grammar rules presented in progression and in separate units. The teacher's role was to transmit the grammatical structures the learners required for the target language (Celce-Murcia, 2001 as stated by Graham, 2011). Learners were expected to learn the rules of grammar so they could master the foreign language successfully. Grammar, according to behaviorists, was considered a necessary tool, and teachers and learners accepted the belief that grammar was an important component of teaching and learning a foreign language.

2.2.2 Cognitivism.

Graham stated that Chomsky's (1959) theory of cognitivism emerged as an opposing response to the theory of behaviorism. Simple repetition, as suggested by Behaviorists was not enough for adult learners to easily acquire a language. He defended the idea that language is not a set of habits but "an intricate rule-based system. There are a finite number of grammatical rules in the system and with knowledge of these, an infinite number of sentences can be performed in the language" (as cited in Harmer, 1991, p. 33).

As a result, learners require different stages to use the language in a meaningful manner, rather than in a series of mechanical drills and repetition as suggested by the theory of behaviorism.

To set an example, the teacher asks learners in small groups to structure an email to a friend that is coming to their city for the first time. They have to recommend places to visit, activities to do, food to eat, and things not to do. Once they have collected all the information, they should present their final product to open class. In this activity, the learners use a variety of strategies to act in the real world and create new knowledge. The language is used in a meaningful way, and grammar learning is not the main part of the lesson. Rather, the focus is on

the mental process that allows learners to acquire grammar rules while communicating in the target language (Graham, 2011). The theory of cognitivism supports the inclusion of grammar in the lessons. Grammar is taught deductively in the classroom and the learners are allowed to make errors while learning the language in meaningful activities (Larsen-Freeman, as cited in Celce-Murcia, 1979).

2.2.3 Krashen's Acquisition and Learning Theory.

Krashen's (1982) acquisition and learning theory also opposed the theory of Behaviorism (Graham, 2011). Krashen did not favor the behaviorist mode that language is conditioned and habit forming, nor did he favor learning a language based on grammar rules and practice. Krashen favored the theory of cognitivism regarding the acquisition of grammar rules while using the language in meaningful context. Krashen introduced his acquisition and learning theory, which asserts that adult learners acquire the target language by using an internal process similar to the one children use to construct language (Graham, 2011). Adult learners use language for the purpose of communication; however, they are unaware of the subconscious process that is involved while they acquire the target language. Krashen (1982) argued that some adults follow a conscious process to learn a language. In this procedure, students are aware whether they are learning grammatical structures or vocabulary while producing the language. To illustrate, teachers present and explain grammar rules and students must learn these rules as part of language learning.

According to Krashen (1982), learners are able to acquire the language on their own if they receive ample comprehensible input. This comprehensible input is language that is somewhat higher than the knowledge students possess. In other words, students can learn the language even if it is more difficult than the language they know. Krashen (as cited in

Thornbury, 2004) asserted that learners might acquire a second language by interacting with native speakers without having to learn the grammatical structures of the second language.

Krashen did not support the inclusion of grammar instruction in the language classroom (Graham, 2011).

2.3 Theoretical Perspectives

The theories of behaviorism, cognitivism, and Krashen's (1982) acquisition and learning theory view the role of grammar from different perspectives. Behaviorists believe grammar should be learned inductively, that is, through the choice of grammatical points and in mechanical drills. Cognitivists believe grammar is necessary for language learning. However, opposite to the beliefs of behaviorists, they support learning grammar deductively rather than in a series of mechanical drills. On the other hand, Krashen did not view grammar as a necessary tool for language learning. He believed learners do not require grammar instruction to learn a foreign language. The three theories have influenced methodologists in the decision to include or reject grammar instruction. Graham (2011) believes that once the decision is made to include grammar instruction, these theories influence the selection of different instructional approaches.

2.4 Teaching English as a Foreign Language

Over the past decades, the field of EFL has experienced different changes in the approaches and methods to language teaching and grammar instruction. The decision whether to teach grammar or not, which has been a polemic issue for several decades, has led methodologists to search for more effective ways to approach grammar instruction. The following items explain some approaches and methods to the teaching of EFL that have been widely used around the world, while focusing on the role of grammar, grammar teaching and learning.

2.4.1 Grammar-Translation Approach.

This approach was used to teach Latin and Greek more than 500 years ago. Celce-Murcia (2001), declare that grammar is the focus of the lesson and sentence construction is based on grammar rules.

The teachers explain the grammar in detail and the students have to learn lists of words based on grammatical structures rather than context. In the grammar-translation approach, the teaching of grammar is considered essential and teachers have to be knowledgeable of the grammar of the target language. The role of the teacher is to transmit the grammar rules of the target language.

2.4.2 Audiolingual Approach.

This approach followed the grammar-translation approach, which is based on the theory of behaviorism (Celce-Murcia, 2001). As stated above, behaviorists believe language is acquired by following the stimulus–response–reinforcement patterns of learning. One example of this approach is when the teacher gives extensive drills and the students are expected to learn the language by repeating the examples given by the teacher (Harmer, 2003 as cited by Graham, 2011). To illustrate, the teacher may give the following statements and the students are required to repeat after the teacher:

Teacher: “This is a pencil. Repeat.”

Students: “This is a pencil.”

Teacher: “Pen.”

Students: “This is a pen.”

Teacher: “Book.”

Students: “This is a book.”

Inductively taught, grammar is delivered in selected structures practiced in mechanical drills. These structures are taught one at a time and in repetitive practice (Celce-Murcia, 2001). In contrast to grammar-translation, in the audiolingual approach, the teacher does not give detailed explanations of grammar rules since this is not a necessary tool to learn the language. Instead, language is to be learned through continuous repetition, as recommended by the theory of behaviorism. The role of the teacher in this approach is to control the activities performed in class and monitor the students' performance. The approach is teacher-centered because the students must follow the teacher's orders (Richards & Rodgers, 2001).

2.4.3 Cognitive Approach.

The cognitive approach provides students with a more comprehensive view of language as well as the grammar-translation. The emphasis is on meaningful communication rather than the meaningless repetition of the audiolingual approach (Celce-Murcia, 2001). This approach highlights the need to teach grammar deductively, that is, the teacher explains the rules explicitly and the students must first deduce rules before they use the language for communicative purposes. The goal is to learn the language accurately. The cognitive approach is grammar-based. In other words, this approach follows a grammatical syllabus that indicates what structures the students have to learn, as well as in what order (Graham, 2011). In the cognitive approach, communication is not the main goal; instead, the main goal is to learn the language accurately.

2.4.4 Communicative Approach.

In this approach, a whole change of beliefs takes place since its supporters believe that language teaching should not follow a grammar-based syllabus because the focus is on communication rather than the learning of grammar rules (Graham, 2011). The goal for the

learner is to acquire communicative competence. In this way, this approach offers learners opportunities to work in pairs or small groups while using the target language. In other instances, learners have the opportunity to discover how the language is used in a given context (Richards & Rodgers, 2001).

This approach leads teachers to teach language for communicative purposes. In other words, students should have the opportunity to use the language in communicative activities to obtain information or respond to a given situation. Furthermore, this approach supports learning the language in terms of the communicative functions, not in terms of the structures (Harmer, 2003; Littlewood, 1981; Richards & Rodgers, 2001). The function of language is more important than the structures and rules of grammar (Graham, 2011). According to Richards and Rodgers (2001), the focus is on the fluency of the language, not on the accuracy of the grammatical structures. The role of the teacher is to act as a facilitator and a guide in the learning process. The teacher also organizes activities in the language classroom that will allow students to communicate using the target language (Richards & Lockhart, 1994).

2.4.5 Task-Based Learning.

Proponents of task-based learning assert that language is learned by using tasks that need to be developed to find solutions to certain problems promoting effective communication (Ellis, 2004). The focus here is not on language structures but on the performance and process. At the end of the activities, the teacher may explain the grammar rules if any language problems had occurred during the activity. Following is an example of the task-based learning approach:

Teacher: Today we are going to practice listening to obtain flight information that is given in airports through loudspeakers. Let's pretend that you are in the airport waiting for information about your flight. You have only the flight number. You do not have the departure

and arrival times. In pairs, you are going to listen to a recording about flights and schedules to different countries. Your task is to write down the flight number, and the departure and arrival times to Frankfurt, Germany. You will listen to the tape twice. Next, check with your partner to make sure that you have written down the same information. Finally, you will send an e-mail to your family to inform them of the flight number and the time of your arrival because they want to be in the airport long before you arrive. (Nunan, 2003, p. 178)

Graham (2011) explains that while the students are developing this activity, the teacher may help any students who may be having problems with the structures they need to use. For example, students may have problems choosing the appropriate verb tenses when writing the e-mail and may ask the teacher to explain the verb tenses they need to use. Although the focus of this lesson is on communication rather than grammatical structures, the teacher may help the students to select the appropriate structures.

2.4.6 Language Discovery.

The language discovery approach brings a different view of the role of grammar. Grammar instruction is not supported in the language classroom i.e., individuals learn optimally by discovering the language by themselves.

Harmer (2003) agreed, arguing, “The things we discover for ourselves are absorbed more effectively than things we are taught” (p. 75 as cited by Graham, 2011). This approach proposes that teachers offer learners opportunities to discover how the language is used in the given examples and how it works. The language discovery approach does not favor explaining grammar rules to the learners. It prefers that they observe and analyze how the language functions in context rather than in grammatical pieces (Graham, 2011). For example, the teacher gives learners some examples with a specific structure (simple present tense, present perfect

tense, simple past tense) and helps them decipher the grammar rules. Rather than explaining the rules, the teacher allows the learners to notice the language and discover the rules (Harmer, 2003). The teacher's role is not the traditional, as Harmer (2003) suggested; instead, the teacher becomes a facilitator and observer of the learning process.

Teachers and students have experienced different approaches and methods to grammar instruction during the teaching and learning process of the target language. Some of these approaches may result more effective than others. Therefore, some teachers may prefer to work and apply ones instead of others. However, in some other cases, there may be a mixture of approaches where learners will feel helped and more comfortable during their learning stages.

2.5 Role of Grammar and Grammar Instruction in the EFL Classroom

As Graham has asserted, grammar has been a polemic topic in the field of foreign language teaching for several decades. Proponents of the various teaching approaches used in the past 50 years have offered different and sometimes opposing views regarding grammar and foreign language teaching and learning. Some researchers have even argued that grammar is not necessary for language acquisition, so teachers must not dedicate time to rules and explanations. Moreover, given the adequate context, "Language can be learned holistically without explicit instruction in grammar." (ZhonggangGao, 2001, p.1) As previously stated, Krashen (1982) believed learners only require sufficient exposure to the target language in context for acquisition to occur. He added that learning rules and practicing grammatical structures do not facilitate the learning process.

Contrary to the belief that grammar teaching is not necessary, other researchers have asserted that grammar is an important and necessary device for language teaching.

Teachers must give grammar explanations in the classroom to ensure comprehension and accuracy of the target language. By providing grammar rules and practice, adult learners “Can induce or deduce meaningful hints out of these rules” (Zhonggang Gao, 2001, p. 1). This process will facilitate language comprehension and learning. Celce-Murcia (2001) argued that although some teachers agree with researchers who oppose grammar instruction, other teachers agree with those who favor the inclusion of grammar in the language classroom.

Despite the controversy about grammar instruction, many teachers are in favor of grammar instruction and prefer to use a deductive method to teach it. To illustrate, the teacher presents and explains the rules in the classroom. The teacher also gives examples of how the new structure is used (Woods, 1995). Many teachers believe explaining the rules overtly helps students to understand what they are practicing and improves the accuracy of the language.

Not all teachers favor a deductive method to teach grammar. Some teachers favor an inductive method, that is, the students find the rules and meanings in examples provided by the teacher. The teacher does not explain grammar rules but guides the students in a “process of discovering the language” (Woods, 1995, p. 77). Teachers who favor the inductive method believe that allowing students to discover the rules of grammar on their own helps them to understand how the language functions.

The teacher gives any additional information about grammar points if the students are not able to discover the rules on their own.

Grammar instruction has been a controversial topic for decades. The decision to select certain approaches to grammar teaching and learning results from past experiences with approaches that have proven to be successful in the language classroom depends on the teachers but also based on the students’ needs.

Today, teachers and students can benefit from the use of technology in and outside the classroom since a lot of time may be saved for further practice, especially if learners want to have grammatical rules provided by the teacher. But, how can time be saved if there is the need to cover the grammatical issues of a lesson? The flipped classroom technique is one of the answers. The next section provides information about this technique that will be useful when teaching grammar.

2.6 Defining the flipped classroom

The flipped classroom, also known as a reverse classroom, inverted classroom or backwards classroom is a relatively new technique that has given positive results to educators and learners in different areas of knowledge when it is applied properly. The flipped classroom helps students to become active learners in the classroom rather than passive holders of information because students have the opportunity to build their own knowledge at their own pace to later participate actively in the classroom. Research suggests that twenty-first century students prefer to learn by interaction and experience using active learning techniques. That is why the flipped classroom is a powerful method that millennial students will enjoy as stated by Phillips & Trainor in 2014. According to Price, C. (2011) their interest for research and their ideal learning environment which includes less lecture, use of multimedia and collaborating with peers will make it possible to connect course content to their current culture and the learning outcomes and activities more relevant.

In this sense, how can the flipped classroom technique be defined? The application of this technique is simple and it needs a short time for learners to adapt to it and get used to it as well as for the teachers. It is to move the material from the classroom to their home using videos and other appropriate means so that students can use their time in class for interaction and class

discussion relevant to the material seen at home as stated by Butt, A (2014). Greener, S. (2015) as cited in Yarbrow et al (2014), gave an interesting definition, stating that direct instruction moves from the classroom to their own individual space and as a result, a new active and interactive space is created. Similarly, Bishop, J. L. (2013) as cited by Lage, Platt, and Treglia (2000) defined this technique as follows; *“Inverting the classroom means that events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa.”* Bergmann & Sams (2014), in their book *Flipping learning* state that this term can be defined in this way: “when students watch instructional videos at home and do the typical homework in class.” This way of teaching can be of great help for teachers and students because teachers can now count with the time for interaction and classroom practices, which they have always been complaining they did not have because they had to teach. That is why this way of teaching moves from a teacher-centered to a student-centered approach and helps students enormously to be more independent in their studies, which should have a consequent benefit in their professional life as well.

2.7 Bloom’s Taxonomy (inverting Bloom’s taxonomy)

The pyramid of Bloom’s taxonomy is well known in the educational setting and applied worldwide by educators. Some researchers have reported that flipped classroom founders have based this approach on this taxonomy because it has given them the opportunity to invert the class in such a way that the class becomes active and student-centered. According to Zainuddin & Halili (2016), the study of flipped classroom was based on the theory of Bloom’s revised taxonomy of cognitive domain where six levels of learning are introduced from the lowest to the highest: remembering, understanding, applying, analyzing, evaluating, and creating. The first two levels understanding and remembering take place at home leaving more time for applying,

analyzing, evaluating and creating in class. In this way, more time is allotted for that domain which was used less in class, but which is actually the most important one for learners. Similarly, Toqeer (2013), referring to the flipped classroom and Bloom's Taxonomy mentioned that the idea of this technique is to lead students to work on the three lowest levels at home and the highest ones in class giving learners the opportunity to master their knowledge and skills.

2.8 History and contribution to the Flipped Classroom

To talk about the history of the flipped classroom is fascinating and motivating at the same time because some educators began flipping because there was a need in the classroom which moved the educator's heart to fill those needs and in other cases, it was done to help some weak students to understand a particular topic better. Several educators claimed that they were the first ones to use this technique. According to Wiginton (2013), at the beginning of the 1960s, Gregor Novak, a physics professor began flipping the classroom because his students who were adults felt tired during the evening classes; therefore, he started to split the content he had to teach in smaller sections to be seen previously to his class.

On the other hand, in the early 1980s, Baker began to worry about how to cover some material outside the classroom, but it was not until 1995 that he accomplished it; he subsequently presented this new concept at conferences between 1996 and 1998 (Baker, 2011 as cited by Johnson, 2012). However, Lage, Platt, and Treglia (2000), designed a procedure similar to Baker's which they called "the inverted classroom," where students could watch lectures in advanced giving the educators the chance to explain difficult concepts and help students to work collaboratively.

Nevertheless, a lot of credit has been given to two chemistry teachers, Jonathan Bergmann and Aaron Sams, who claimed that they began using this technique in the year 2007

as a way to help those students who could not attend some classes. Nevertheless, the impact was bigger because other students also began watching the videos that these teachers had recorded and posted online. They found out that students felt more confident and engaged in participating in class, thus becoming active learners. (Phillips & Trainor, 2014). Therefore, it can be said that teachers and educators at different points in history and even in our time have worked hard for the students' sake and have contributed in one or another way to help students become more independent, practical, interactive, and collaborative in the learning process, which is why the flipped classroom technique was created.

2.9 Role of technology in the flipped classroom

Technology has played a very important if not the most important role in the application of the flipped classroom technique because it has allowed both teachers and students to use it for teaching and learning benefits and in doing so the traditional classroom has suffered a tremendously positive and interactive change. It is well known that thanks to technology, the flipped classroom model has developed so fast because it has given teachers the necessary tools to create this new environment. For instance, the use of presentation software such as PowerPoint, and Prezi are among the most favorite tools teachers have used to introduce a topic. Audio and video recordings have been used a lot for both teachers and students and these tools have become part of teachers and students' lives, not just because of their usefulness but because they enjoy using them. Technology enables teachers to easily record their classes and upload them giving the opportunity to many students to watch them; at the same time, teachers can benefit from other videos and PowerPoint presentations that have been uploaded by other teachers on internet sites such as YouTube, Slide Share, among others. According to Wiginton (2013), 3.9 out of 5.0 on the Likert scale favored the flipped classroom in an experiment done by

researchers at Miami University in Ohio. He also mentioned that instructional technology has radically got better which has eased the teachers and students' path. Flumerfelt & Green (2013), pointed out that in the future, schools will continue improving because instructional technology is getting better and better. Zainuddin & Halili (2016) mentioned that the use of technology in the flipped classroom is so important that is why various technological tools such as Wikis, blogs, online platforms or technological media can be used to work at home. It has been evidenced that over time, technology has been evolving in such a way that it has become a fundamental part of education and it has been of great support to the flipped classroom approach as it has provided many useful tools. We can also expect that technological advances will increase more rapidly than in the previous years.

2.10 Students' opinion on flipping

There are many different reactions towards this relatively new way of teaching. Most of reported feedback from students has been positive once they have seen and experienced this technique. In one of the most recent studies, Sinouvassane & Nalini (2016) found that students appreciated this approach for different reasons; "it has helped them to understand and learn better, it involves technology, a very interesting way to study and remember, the online learning is very different from the traditional one, videos have helped them to remember content until today." Gaughan (2014) in his article mentioned that most of the students thought that the flipped classroom technique helps them a lot to participate in in-class discussion.

2.11 Educators' opinion and experience on flipping in previous studies

It seems that most of the teachers who have used this technique have really enjoyed it after seeing the advantages it provides. For instance, Sinouvassane & Nalini (2016), mentioned that this approach has provided them with more class time for more engaging activities and

classroom discussions. Gaughan (2014), is very enthusiastic about this technique because it engages students, and he can meet his students in advance which improves the classroom experience for each one.

2.12 Advantages and disadvantages of flipping a classroom

Researchers have identified both advantages and disadvantages of the flipped classroom technique. Flumerfelt (2013), Crews & Butterfield (2014), Herreid & Schiller (2013), Togger (2013), Enfield (2013), and Talley & Scherer (2013) among others reported that both teachers and learners have benefited from using the flipped classroom model. For instance, some students have become more responsible and autonomous learners. Students get to know the content beforehand; they can work at their own pace and revise the content as many times as they need. They become more active and self-critical because students and teachers benefit from the organization and advanced planning that allow them to work better in class sessions. Teachers can get feedback from students about the usefulness and quality of the videos. Consequently, teachers can reuse or change them, teachers will have more time for meaningful activities and class analysis, and finally there are some students who have benefited from self-explanation since they were very young.

On the other hand, some researchers have also noticed that the flipped classroom may present some pitfalls or drawbacks. For instance, Herreid & Schiller (2013) in his case study identified two major difficulties. The first one was that some students would come to class unprepared, showing a lack of responsibility and resulting in possible failure. The second difficulty was that teachers struggled to find good quality videos and material in general, which would not interest nor engage students in learning; these videos have to be relevant and meaningful to the topic that they will see in class to connect both stages. Togger (2013) in the

revision of the literature pointed out that if teachers do not plan in advance, the model will not succeed. He also mentioned that there are students who have some issues with having to study from videos while others will give more credit to the videos than to the face-to-face classes.

The flipped classroom approach follows constructivist theory because students build their own knowledge when they work on their own and at their own pace at home to later interact with their classmates and teachers on meaningful activities. According to Saunders (2014), students acquire knowledge through social interactions and experiences following Vygotsky's social constructivism theory. He added that concepts from this theory are evident within the inverted classroom curriculum and consequently it works very well within this framework. This theory suggested teachers apply scaffolding activities within the flipped classroom approach to support students' reasoning and problem-solving skills. The inverted classroom teachers need to be aware that the activities they implement in class and the ones they send home would help students to build their knowledge effectively.

2.13 Active learning

Prince, M. (2004), defined active learning as any kind of instructional method that engages students in the learning process, which means students being actively involved in meaningful activities that help them reflect on what they are producing. It is important for students not just to work on assigned homework, but also to engage in those activities that are introduced in the classroom that would raise their awareness and critical thinking.

Bonwell, C. & Eison, J. (1991), state that active learning creates excitement in the classroom; students feel more engaged and excited when learning becomes active and interactive. Learning does not just involve listening (perceptive skills), but it has to deal with writing, reading, discussing (productive skills), and solving problems. Bonwell and Eison

encouraged colleges and universities to actively engage and support students in the learning process using interactive instructional techniques to make the promise of active learning real because it is necessary in the 21st century to help students to be creative as well as critical and this could be led by a constant active learning environment.

Several studies have shown that students prefer activities that cause an active learning setting, where they have a constant participation rather than the traditional class (Bonwell C. & Eison J. 1991). In addition, Grabinger and Dunlap (1995) explained that a number of strategies should be adopted to create a rich learning environment. For instance, teachers should aim students to become more responsible, enterprising, decision makers, intentional learners, creative, and critical thinkers. He added that a knowledge-building learning environment should be established in class to provoke high-level thinking processes in a dynamic and constructively way.

2.14 Teacher-Centered vs Self-Directed Learning

Traditional teacher-centered classes did not prove to be successful as students did not have enough chance for participation or interaction and students did not construct their knowledge because they spent more time receiving information. (Hirsch, 1998 as cited by Kain, 2003) stated that a significant number of students were more receptive to traditional methods of teaching. However, Stephens (2000) affirmed that student-centered approaches to learning lead students to achieve higher grades.

Self-directed learning, also known as autonomous learning, aims at the students' learning process and it is centered on them. Self-directed learning is important in today's teaching and learning processes to respond to the challenges of this millennium because students are more autonomous and more into learning by doing (O'Shea, 2003). O'Shea (2003) also explained that

self-directed learning is based on the principles of adult education and it can take many different formats. Thus, it offers many benefits to students because they will become independent; on the other hand, teachers become more like a facilitator, a guide who will support the students to address their weaknesses.

In 2000, Tillema argued that students should be more actively involved in constructing their own knowledge under a different perspective, becoming more participatory and active in their learning process, centering the class in the students rather than in the teacher. Similarly, Moore M. (1983) explained how we learn, for example how our point of view and behavior vary due to a result of an experience. We learn more by experiencing something rather than by listening to someone. For example, a teacher can explain to us the traffic rules and correct form of driving. However, it seems to be more remarkable when we experience it by driving the car. This suggests that students can learn much more by interacting and experiencing.

2.15 Summary

In summary, the flipped classroom has become a very useful and practical way of teaching and it does not just help students, but also teachers even though it does not ease their work but it does give more responsibility to the learners allowing them to become more autonomous, critical, and creative. The teacher becomes more like a guide and can lead his or her class to become more interactive and practical creating a different environment from what it typically used to be. This way of teaching has been evolving parallel to technology advances and it will continue developing through the years in the future, which is why many educators have changed their traditional way of teaching to flipping their classes especially if saving time in the face-to-face session is needed.

CHAPTER III

Methodology

3.1 Introduction

The purpose of this research was to study the effect of the flipped classroom technique on students who were taking the intermediate course (B1) in a public university and to compare with the students who received the class in the traditional way to analyze their achievement and see if this technique gave better results or not. According to Bryman, 2012, the quantitative paradigm is deductive because it tends to test a theory. Its epistemological orientation is a natural science model and its ontological orientation is objectivism. Similarly, McKay (2006) notes that in a quantitative approach, reality is single, the researchers can look at reality objectively, the researchers' role is to observe and measure using statistical procedures and the purpose is to generalize. This is why the authors chose a quantitative approach to respond to the research questions stated above. In this study, the researchers aimed to test the theory that the flipped classroom technique gives better results than when the class is presented in the traditional way. They aimed to isolate the impact of the instructional model on measures of learning outcomes, while continuing to keep high-quality educational standards, given that the researchers carried out the study with groups of students who were investing their time and energy in attending the course during a whole semester with the goal of both learning and passing.

3.2 Research questions

This quantitative study answered four research questions, which focused on the flipped classroom technique on intermediate students' achievement in the learning of grammar as a foreign language.

1. What difficulties do learners and teachers encounter when dealing with grammar in the EFL classroom?
2. What advantages and disadvantages do learners and teachers find when applying the flipped classroom in an EFL context?
3. How do students in classrooms utilizing flipped instruction, and traditional instruction with lecture-homework learning strategies, compare academically on grammar achievement?
4. What is the level of satisfaction of the students at the end of the intervention?

3.3 Research Hypothesis

In this quantitative study, the researchers focused their investigation on the alternative research hypothesis, which was that the students who received the class with the flipped classroom technique achieved better results than those who did not receive the treatment. There are two hypotheses; the null and the alternative hypothesis.

3.3.1 Alternative Hypothesis.

Those students who received the class with the flipped classroom technique achieved better results than those who did not receive the treatment (the traditional class).

3.3.2 Null Hypothesis.

There is no difference between those students who received the class with the flipped classroom technique than those students who did not receive the treatment.

3.4 Participants

This study took place in a public university in the city of Guayaquil, Ecuador. The participants were two intact groups of intermediate levels (B1 according to the CEFR). There were 41 students in the first group (traditional class), where 33 students took part in the

experiment; 15 women and 18 men. The other students did not continue in the course, they dropped out and others did not show up when the authors gave the post-test. In the second group (flipped class), there were 39 students, but just 28 students participated in the study: 15 women and 13 men. The other students did not take the post-test exam and in other cases, they dropped out. Each group was simultaneously taking the intermediate level. The groups were intact groups, and the time assigned to collect data was three weeks where students watched videos outside the class and completed assignments during their face-to-face sessions. One group received the class following the flipped classroom technique, while the second group received the same class in the traditional way.

Table 1
Participants' Demography

Class	Male	Female	N
A (T.C.)	18	15	33
B (F.C.)	13	15	28
TOTAL	31	30	61

Source: Authors

3.5 Research design

Two full-time professors conducted this quantitative research study in a public university, in the English education department at the same university in the summer of 2016, in the month of August. Both professors had received instructions related to the flipped classroom technique. During the course of the Master's program both researchers got interested in this new way of teaching and did previous work regarding this topic in different skills. However, the main driver of their interest was the fact that the university where they work began piloting with this new

method, that is why both researchers decided to focus on this topic and through a quantitative paradigm verified if this way of teaching gave better results than the traditional method.

Before the researchers implemented the flipped classroom technique in the intermediate class, they had received the class in the traditional way where the teachers explained the grammar, wrote notes on the board, introduced grammar topics through PowerPoint presentations in both inductive and deductive way. Students did their homework outside the class and delivered it in the following class session. The course met three times a week for 2 hours in every class, which means 6 hours a week.

The researchers began the study piloting two different groups where students did the test and wrote down any comments indicating whether instructions or one of the items was unclear. Once the researchers had checked the test and made the necessary changes, they began the treatment. First, the researchers passed a consent form to students to collect students' demographic data where they freely signed if they were willing to participate in the study. The consent form explained the purpose, the length, and the procedure of the study, as well as an explanation telling them that it was optional and that they could withdraw at any time with no negative repercussions.

Second, the researchers gave a diagnostic exam to both groups; the flipped classroom group and the traditional class group to verify that the groups were equivalent even though both groups were intermediate and were following the same content of the unlimited version books Tilbury, A., Clementson, T., & Hendra, L. (2010). Third, both researchers chose useful and helpful videos from reliable sources. They also created useful and engaging PowerPoint presentations, and sent identical homework assignments and assessment to give to students to avoid being biased and to give students the same opportunity to learn to avoid ethical issues.

Fourth, a questionnaire using a five-point Likert scale was administered to students at the end of the study. The questionnaire asked students to respond to questions about the method they preferred to be taught, whether it was the traditional way of learning or the flipped classroom model, the frequency they do autonomous work and the level of difficulty of this assignment. Besides, the authors asked the groups if cooperative work had helped them to be more skillful in the language and if the professor's feedback had been effective in this new way of teaching. Finally, the researchers analyzed the data using the statistical tool, 't-test' to calculate the strength of various predictors on exam scores and to determine the amount of variability that is accounted, and most importantly to conclude if the equality of means H_0 was rejected and to analyze if the grades were dispersed or uniform . In addition, the researchers analyzed the data using the program "MINITAB 17."

3.6 Variables

Mackey & Gass (2005) identify the dependent and independent variables as the two main variables types. The researchers have chosen these two variables in this quantitative study to analyze how the dependent variable may cause the result and how to measure the independent variable, which in this study is the achievement of the students.

3.6.1 Independent variable.

The independent variable in this research study was the teaching instruction with two levels; traditional teaching instructions represent one level of the independent variable applied in one group and the flipped classroom technique represents the second level.

3.6.2 Dependent variable.

The dependent variable, which is the one that is affected by the independent variable, is the achievement of the students.

3.7 Procedure

The researchers followed the following procedures in this study: first, they chose two intact groups: one that received the class in the traditional way and the second that received the treatment using the flipped classroom technique. Second, they applied the diagnostic test to both groups. Third, they gave the pre-test to both groups. After, the researcher applied the intervention to the groups. Finally, after the third week of the study, the researchers applied the post-test to all the participants. At the end of the intervention, the authors delivered a survey to students to verify how useful and effective the flipped classroom technique was for them.

3.8 Instruments

The authors used a quantitative method design to investigate the research questions. This section describes the instruments that the researchers implemented in both the pilot courses and the courses where the treatment took place. Before the researchers began their study, they applied the test (Appendix A) to two pilot groups. Then, the researchers gave both researched groups a diagnostic exam, which was a multiple-choice exam. This exam was given to both groups in the English laboratory of the same University to see if both groups were identical, later a consent form was utilized (Appendix B), and to examine the achievement of the students regarding grammar learning, the researchers used two quantitative instruments. Another instrument was the pretest (Appendix C), which the authors administered at the beginning of the first three weeks in the month of July and the post-test, which the authors administered in the middle of August. Both tests, the pretest and the post-test were analyzed using student t-tests with 0.05 confidence level to note any achievement gain between the experimental group (N = 28) receiving the flipped classroom technique and the control group (N = 33) using traditional

learning strategies. Finally, at the end of the treatment, the participants completed a Likert scale survey (Appendix D) related to the flipped classroom technique they were taught.

3.9 Description of the traditional class

The traditional class required students to work in two settings. Firstly, in class, students received lectures where the researcher explained the grammar in context so that students could practice it in similar situations, then guided practice were held, followed by semi-guided activities and finally free tasks were assigned by the researcher. The researcher presented the new grammar topics using PowerPoint presentations and short practical videos. Secondly, outside the class, students had to do homework, and had to complete additional tasks about the grammar they studied in class that the researcher could not give in class to them on account of the lack of time. Students turned in their homework at the beginning of the following class and the researcher gave them back in the following class meeting. The researcher provided general feedback in SIDWEB (on-line platform where teachers and students interact and instructions and announcements are made by the researcher) were the researcher posted the answers.

3.10 Description of the flipped classroom

The flipped classroom also took place in two settings; in class and at home, but with a variation in the way the instructor (the researcher) presented the class. Following this new way of teaching, the instructor flipped the class in the following way; the researcher did not introduce a new grammar topic in class like he did in the traditional way, but videos and Power point presentation with an assignment component were provided to students before class. Students watched the videos and read the PowerPoint presentations as many times as they needed to understand the topic. The instructor gave three videos and three PowerPoint presentations to students during the three weeks. The students wrote notes about the grammar that was unclear or

confusing to discuss in class. The aim was to cover all the grammar instructions and explanation before class so that students could come to class with some previous knowledge and theoretical background so as to leave class time to practice it in class and to apply it in free writing and speaking activities. The researchers made PowerPoint presentations and they chose practical and interesting short videos. These videos were around 5 to 10 minutes in length and the researcher assigned them with a task to be done and completed before students met in class. In class, the instructor brought up questions students had posted in the forum and clarified them in an interactive way. The instructor made students work in groups to do collaborative and cooperative tasks with the grammar they had seen at home and monitored the activities providing students with feedback according to their needs.

Table 2
Teaching Grammar Methods

	Traditional	Flipped
Outside Class	Homework based on previous class lecture covering both procedural and grammar practice	<p>Finish conceptual practice questions from previous class meeting</p> <p>Watch video and read PowerPoint presentation covering grammar material for next class meeting</p> <p>Do and complete 1-2 procedural practice questions</p>
Class Time	<p>Students hand in homework</p> <p>Lecture covers both instructional grammar and exercise practices</p> <p>Quiz given based on class explanation and homework</p>	<p>Feedback is provided according to questions posted in the forum by students</p> <p>Brief lecture to clarify and expand grammar topic</p> <p>Free writing and speaking activities are assigned</p> <p>Students begin working on cooperative and collaborative tasks with teacher as facilitator</p>

Source: Authors

The researchers assigned the same PowerPoint presentations as well as homework and if possible, the same activities in class. However, the researcher could not do all the activities in the traditional class because there was not enough time to interact and practice as there was in the flipped classroom. All these tasks were the same to avoid bias and to give both groups the same learning opportunities.

3.11 Validity and Reliability of Test

To ensure the validity of the test, the researchers made the test using the English Unlimited program, which tested what was taught in class. Besides, the researchers ensured the reliability of the test by including enough test items, based on the objective of the course and controlling for specific skills (Tuckman, 1988).

Content validity of the test was established by the textbook publisher and the test was aligned with the content of the course as mentioned before. To ensure the validity and reliability of the test (pre-test and post-test) the researchers first applied them to two pilot groups, which were similar in their level of English to the researched groups. In addition, both researchers made and checked the tests. Then, they improved it according to students' comments from the pilot groups.

Additionally, both professors graded all tests. These measures were put into place during the design of the research to rule out inconsistent instrumentations as a threat to internal validity.

3.12 Validity and Reliability of the study

To increase the validity of the study both professors collaborated to create the PowerPoint presentations and looked for useful and practical videos from which the participants could benefit. In addition, the following factors were held constant for both groups to ensure

consistency: Both classes had the same instructor, the same material for both groups; the same PowerPoint presentations and the same information from the videos. The researcher gave the same exercises to the groups, he covered the same topics in the same period of time (3 weeks), and he handed out identical exams (pre and post-test) to both groups.

There were some threats to validity that remained even though the researchers worked hard to avoid them. These threats were caused by personal differences, learning styles, differences in class size, difference in knowledge and background, or difference in Hawthorne effect. According to Adair (1984), this effect is usually defined as the problem in field experiments that students show regarding their behavior because of the knowledge they have acquired. However, this study still embodies enough strong design to enable valid comparison between the traditional class group and the treatment group.

3.13 Data analysis

The researchers analyzed the data collected for this project in a quantitative way. The first data collected by the researchers were from the pilot groups, whose levels of English were similar to the researched groups. The authors considered two pilot groups in this study to ensure the validity of the tests and to enable the researchers to refine data collection procedures and to improve questions if necessary with the aim to make it clear to the participants. In the first group, 25 out of 35 students took part, and in the second group, 26 out of 28 students participated in this pilot group. The data was analyzed statistically and was presented graphically using histograms, besides different calculations were performed such as: mean, median, mode, variance, standard deviation, kurtosis, skewness, etc. The researchers gave the exams to both groups and after being collected, both researchers scored both the pre-test and the post-test and saved the grades in a document. Data from both researched groups regarding the pre-test and post-test were entered

into the program 'MINITAB 17.' This program helped the researchers to get the boxplot for the total number of students and per group. A histogram was also provided by the program as well as the normal distribution of the data. The researchers also used excel to apply the student t-test, which is a tool that tests hypothesis with a confidence level of 0.05. If the significant level is less than 0.05, then the null hypotheses is rejected in favor of the alternative hypotheses. Finally, students took a survey about the flipped classroom instructions to analyze if they prefer the flipped classroom method or the traditional one.

CHAPTER IV

Results

4.1 Introduction

The purpose of this research was to prove that the flipped classroom model plays an important role in intermediate students' achievement in the learning of grammar in English as a foreign language and to verify if this new way of teaching provides teacher with more time class for more interactive activities in class.

This chapter presents the results from the pilot and most importantly from the study groups in two ways; firstly, in a descriptive way and secondly in an inferential form. A pre-test, post-test, and survey were carried out in order to collect data. In section 4.2, results about the pilot groups are presented. In 4.3, the researchers present results of the diagnostic exam that showed that both groups were identical. In section 4.4, the researchers show the results using MINITAB 17 which is a statistical program that presents results of the pre-test and post-test in both groups in a histogram and in a boxplot. In 4.5, the author analyzes and shows the results using the t-test for both groups. This t-test compares the means of two related groups to determine whether there is a statistically significant difference between their means. Finally in section 4.5 the survey results are shown using Excel.

4.2 Pilot groups result

As part of the research design, the researchers applied the test with two pilot groups to validate it. The students from these groups did the test and took notes about the questions or items from the test that were unclear to them. The test had five topics, each one with ten items, except the second topic, which just had five items. The first group did not comment on questions 1, 2, or 3 but they wrote comments on questions 4 and 5 as shown in table 3.

Table 3*Comments from the Pilot Group No. 1, pre-test*

Questions	1	2	3	4	5
Comments	No comments	No comments	No comments	I do not understand.	It is not clear. I do not understand what to do.

Source: Authors

The second group presented similar concerns about the last two topics as well as similar comments, however, students commented much more on question five. Their general concern regarding this question was that instructions were not clear. The comments for this pilot group are shown below in table 4.

Table 4*Comments from the pilot group No. 2, pre-test.*

Questions	1	2	3	4	5
Comments	No comments	No comments	No comments	It seems that a verb is needed.	I do not understand the instructions I do not understand the question. I do not know what to do. I did not understand the questions. I do not understand when you say the correct form of the adjectives. How do we have to change the adjectives? What means 'correct form'?

Source: Authors

The researchers also analyzed the grades of both groups individually using Excel. The grades showed that both groups had previous knowledge about the grammar topics presented in the test, especially the second group whose mean was 24.64 over 40 points as shown in the chart below.

Table 5
Pilot Groups Statistical Data

	Group 1	Group 2
Mean	19,52	24,64
Typical error	1,492335976	1,340248733
Median	18	23
Mode	22	23
Standard deviation	7,461679882	6,701243666
Sample variance	55,67666667	44,90666667
Kurtosis	-0,576422451	-0,176566365
Skewness	0,605797688	0,577638762
Range	26	25
Minimum	8	13
Maximum	34	38
Sum	488	616
Number	25	25
Confidence interval (95.0%)	3,080030075	2,766137433

Source: Authors

On the other hand, the first group also showed previous knowledge but their mean was lower comparing to the second group, 19.52, and the standard deviation showed that the grades were disperse in a similar way in both groups. This occurred because students have different experiences and background in the target language. The chart above shows the result of this group.

Furthermore, the lowest grade in the pilot groups belongs to the first group, which is 8 and the highest grade belongs to the second group which is 38 and the standard deviation in the second group is lower than in the first group showing that the data in the first group are more dispersed as shown in the graphs below.

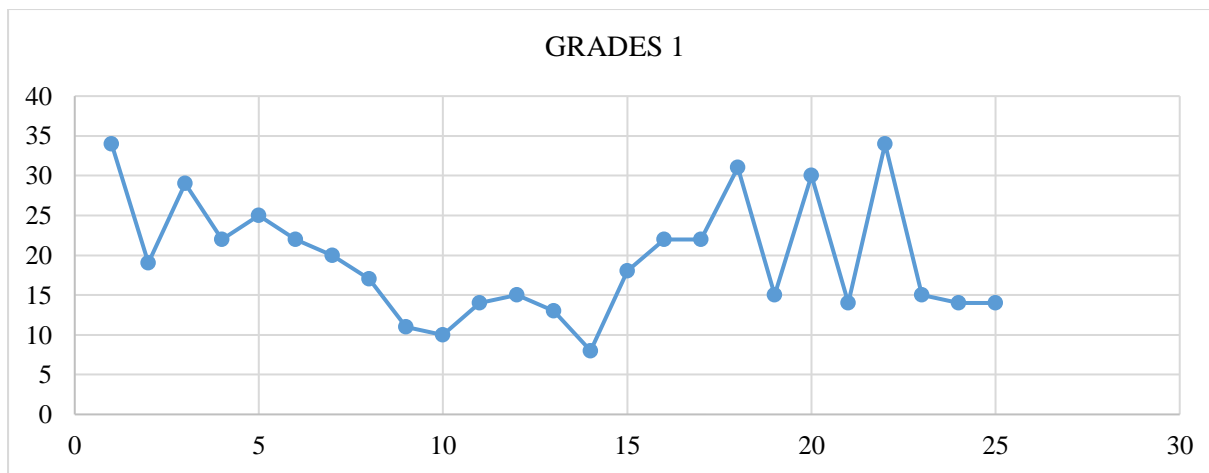


Figure 1. Grades, pilot group No. 1. Source: Authors

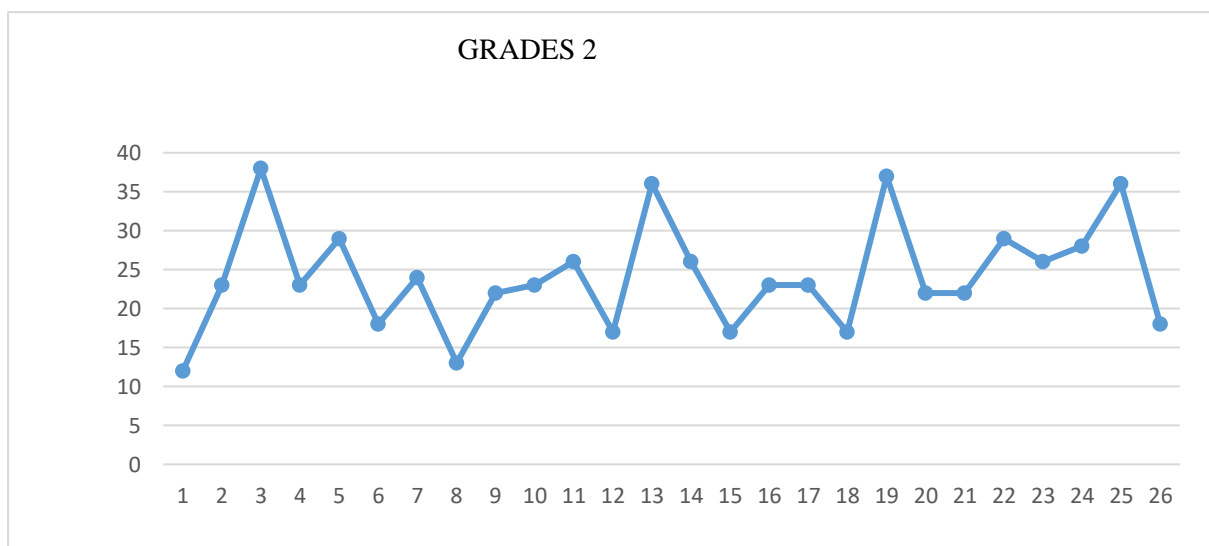


Figure 2. Grades, pilot group No. 2. Source: Authors

4.3 Diagnostic grades results from researched groups

The researchers gave a diagnostic exam to the studied groups to verify the level of English they had before the study took place, and to confirm if both groups were identical. The same university provided the diagnostic exam where the research took place. The students took the exams in a computer-based format and they were delivered in the English laboratory of the faculty. The system automatically and instantly graded the exams, and the researchers saved the

scores. Both groups were taking the *Intermediate A* English course so they were all expected to have at least an A2 level of English according to the CEFR.

However, the results in the traditional classroom showed that 36% of them had a lower level of English than the one they were supposed to have as they scored grades that fell into the A1 level according to the CEFR. Nevertheless, 61% of the students had an acceptable level of English and 3% had a higher level of English as they were rated B2 according to the results of the test as indicated in figure 3 and table 6 below.

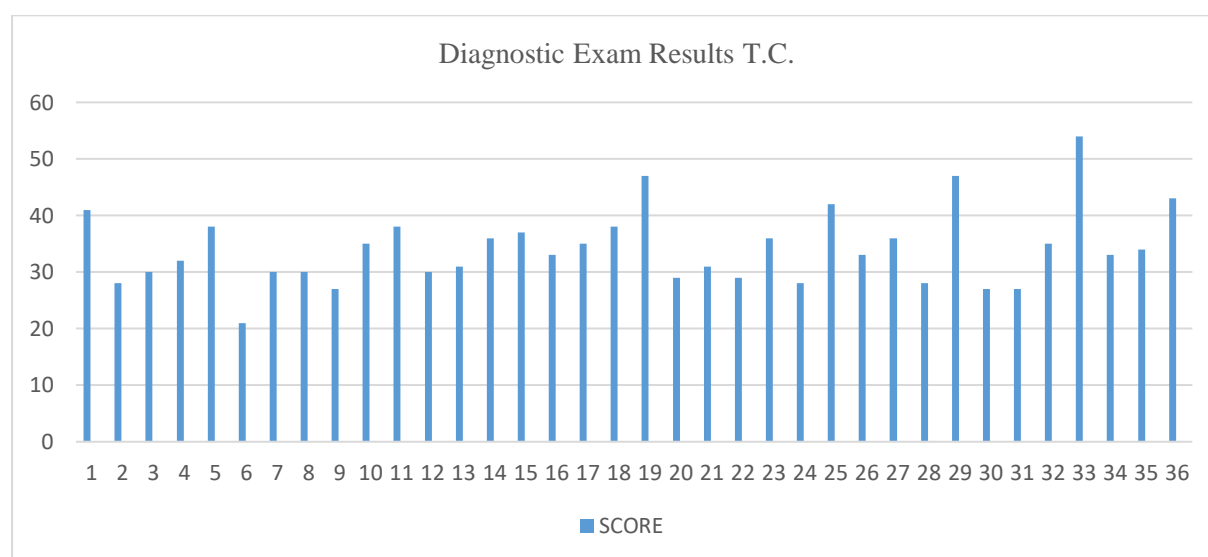


Figure 3. Diagnostic exam grades for T.C. Source: Authors

Table 6

Diagnostic exam grades T.C

Traditional Class		
LEVEL	FREQUENCY	PERCENTAGE
A1	13	36
A2	17	47
B1	5	14
B2	1	3

Source: Authors

Similarly, the results in the flipped classroom group showed that 45% of them had a lower level of English than the one they were supposed to have as they scored grades that fell into the A1 level according to the CEFR.

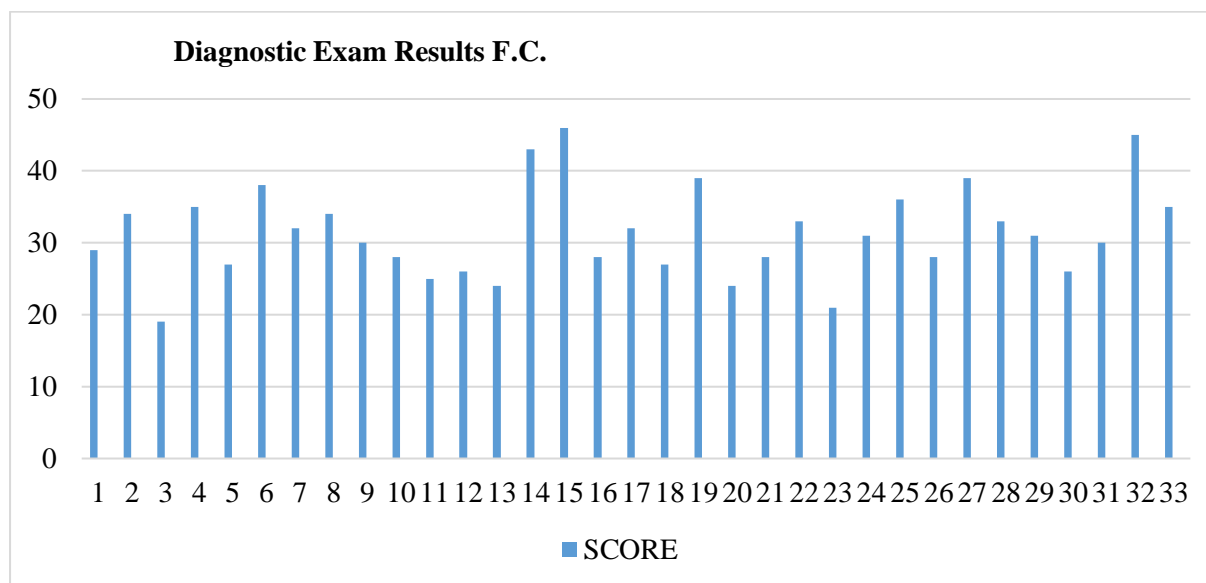


Figure 4. Diagnostic exam grades for T. Source: Authors.

Table 7

Diagnostic Exam Grades T.C

Flipped Classroom		
LEVEL	FREQUENCY	PERCENTAGE
A1	15	45
A2	15	45
B1	3	10
B2	0	0

Source: Authors

Nevertheless, 55% of the students had an acceptable level of English and no one had a higher level of English (B2) according to the results of the test as indicated in figure 4 and table 7 above.

It can be seen that students from both groups had different level of English according to CEFR. However, the grades from the traditional class were slightly higher comparing to the grades of the flipped classroom group, which might have slightly affected the outcomes of the study.

4.4 Results from researched groups using MINITAB 17

The researchers used the program MINITAB 17 to analyze if the data followed a normal distribution to apply the t-test student and the paired t-test. In figure 5 below, the researchers presented a graphical summary of the distribution of the pre-test in the control group where the mean was 19, the standard deviation 5.2, and 33 students took the pre-test.

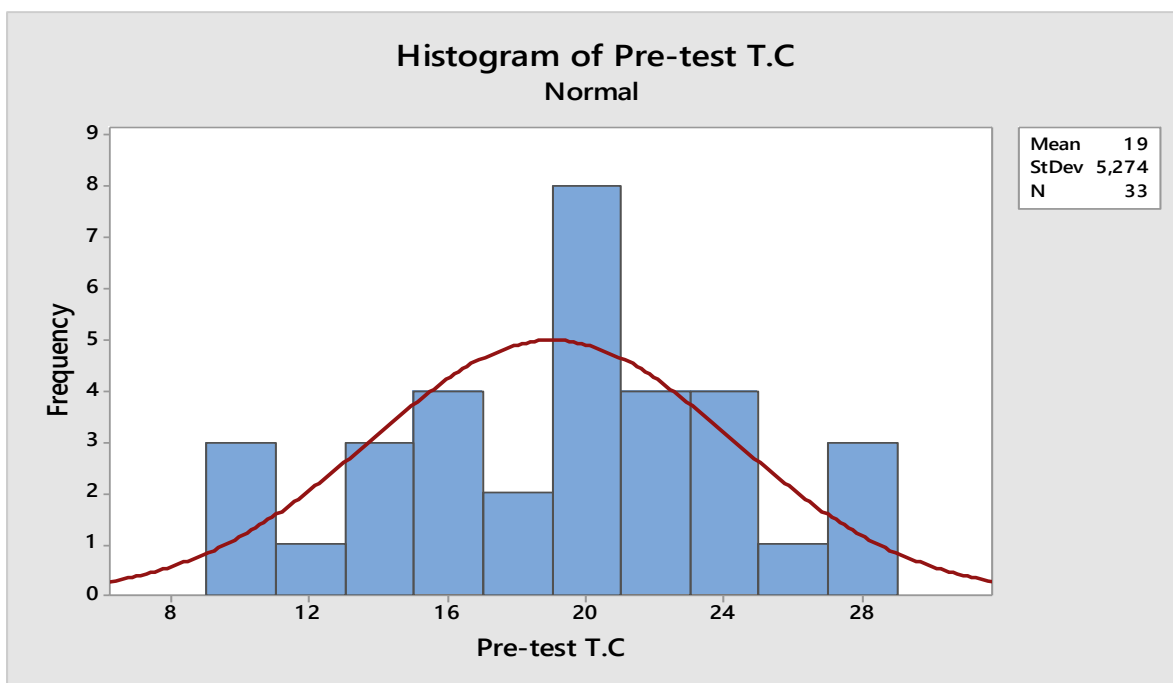


Figure 5. Traditional class, pre-test. Source: Authors

In the figure below, the researchers notice that the mean of the control group was 17.79, the standard deviation was 7.1, and 28 student took the pre-test. Comparing both groups, the researcher noticed that in the control group, the students' grades were better than those students from the experimental group.

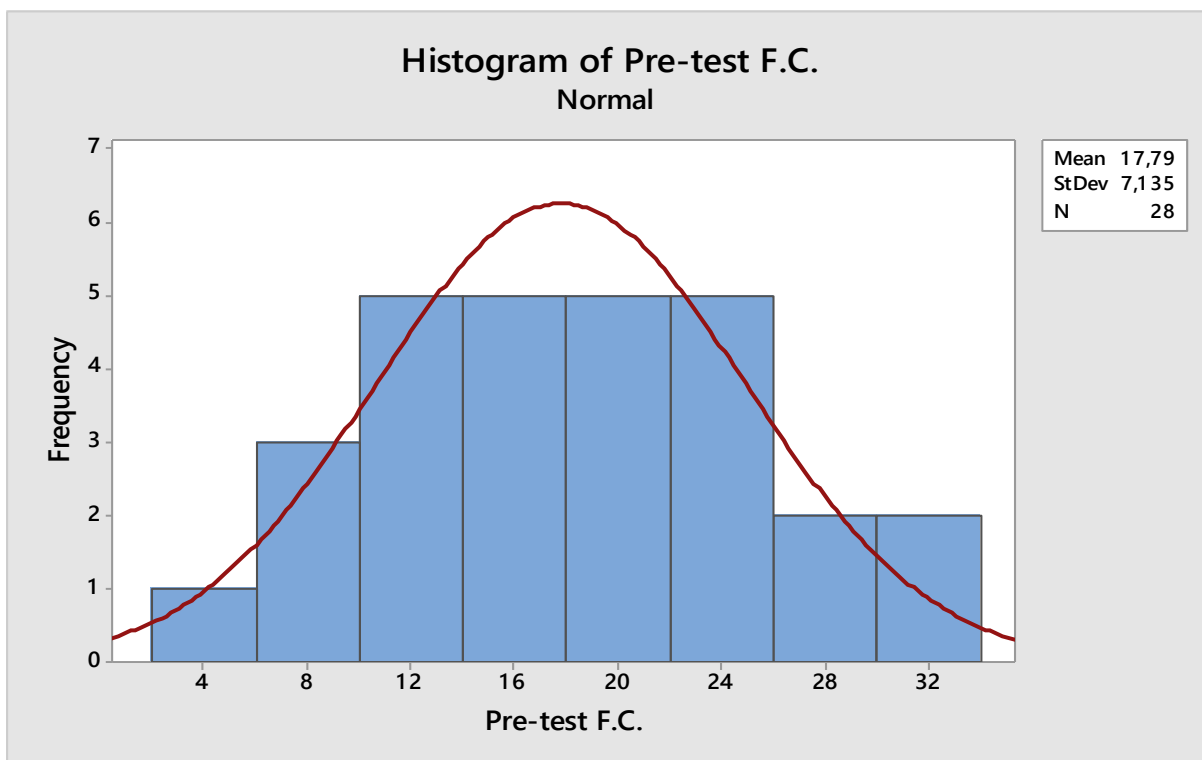


Figure 6. Pre-test, flipped class. Source: Authors

In the histogram below, the data was organized to show its distribution and the grades of the 28 participants who took the post-test in the experimental group. In this figure, we can see that the median (28.04) is higher than the median (17,79) in the pre-test. Furthermore, the standard deviation, 6.03 showed that the grades were more uniform when comparing to the pre-test scores.

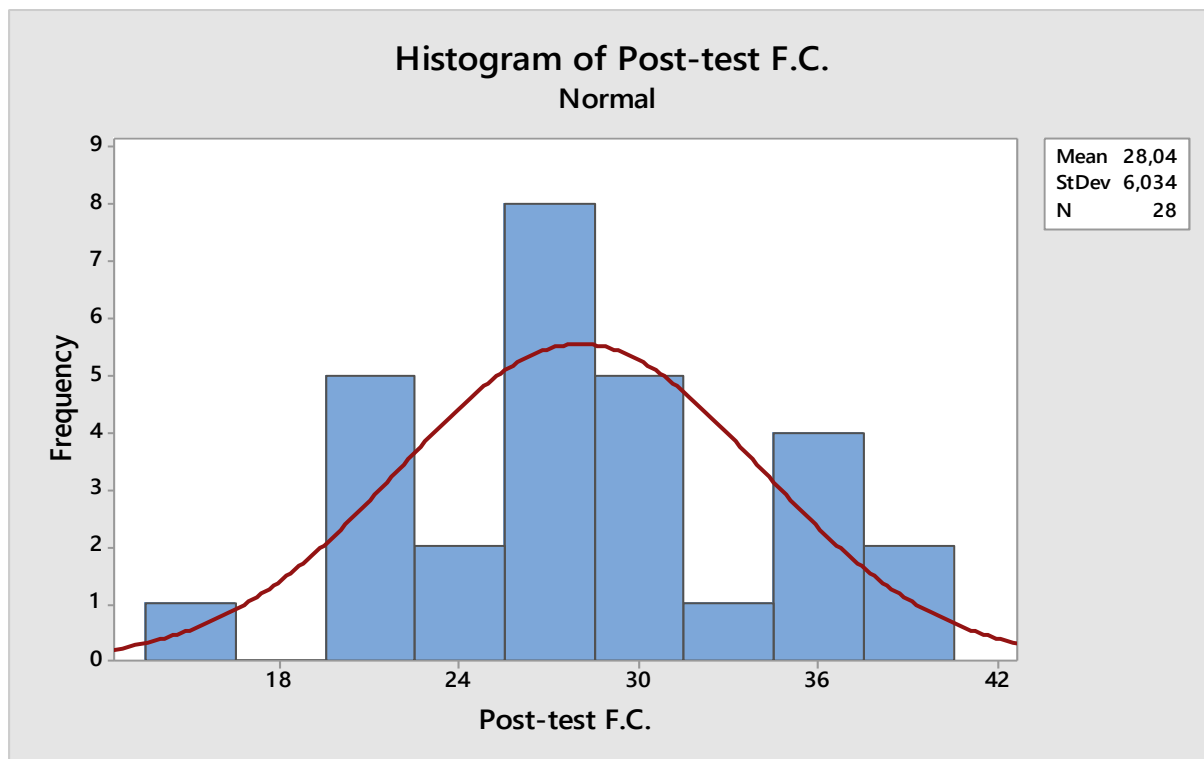


Figure 7. Post-test, flipped classroom class. Source: Authors

However, the researchers also wanted to show how the grades in the experimental group in the post-test suffered a positive change after the three weeks as it is shown in figure 8 below. The data moved to the right, which means students' grades had improved. The mean was 25.30 and the standard deviation 7.45 showing that the data was less uniform and more disperse than in the flipped class.

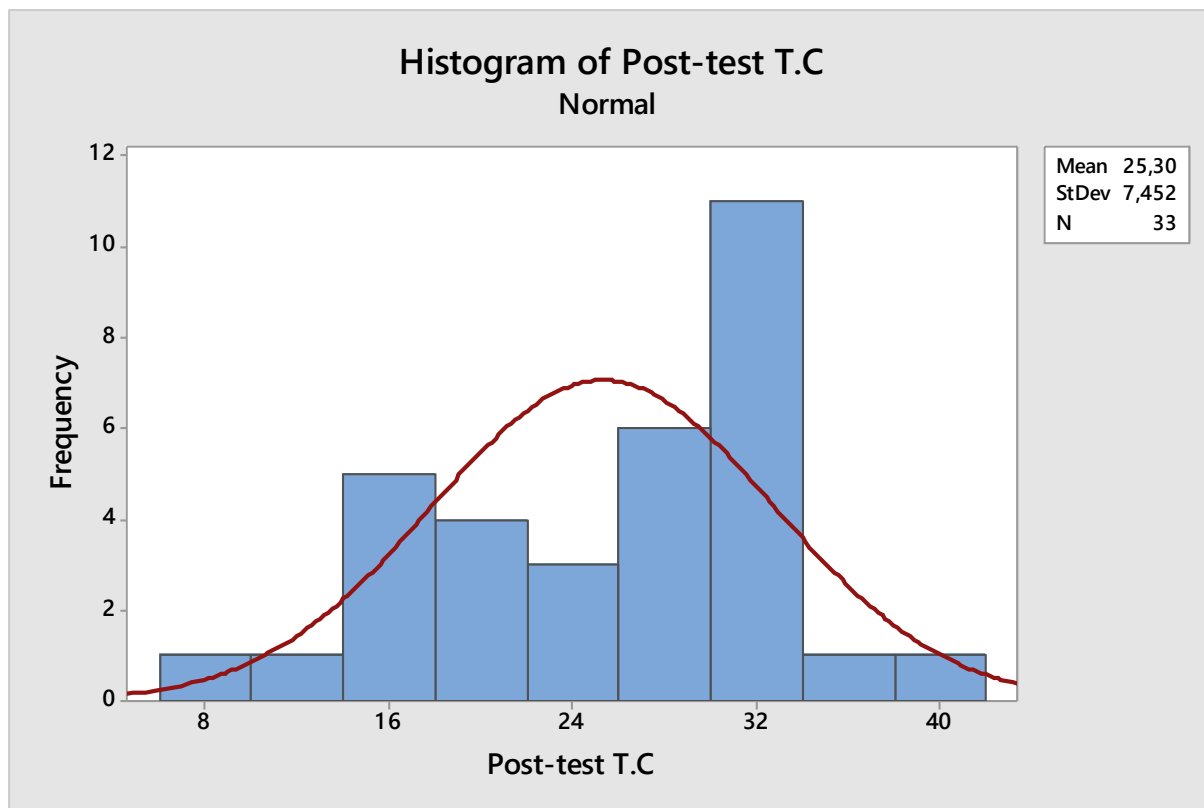


Figure 8. Post-test, traditional class. Source: Authors

The boxplot below (figure 9) shows the differences of the pre-test and the post-test in the traditional classroom. There was a significant change after the three weeks of classes that students had, however, the box got wider in the post-test, which means that the data were more dispersed, the grades were less uniform and compact. In addition, the minimum grade in both tests was quite similar. The word 'NO' means that the treatment was not applied in this group.

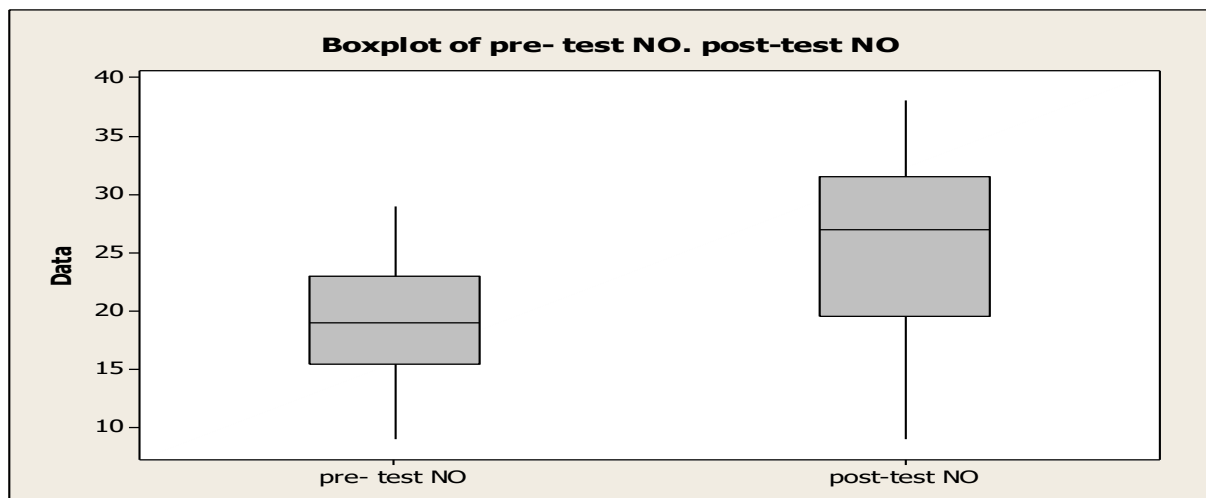


Figure 9. T.C. Grades for pre-test & post-test. Source: Authors

The boxplot of the treatment group (FC) in figure 10 showed a much better distribution of the data than the traditional class boxplot. The boxplot is narrower and all the data in the upper and lower whiskers are shorter than the traditional class whiskers, which means that students, in general, got a better understanding of the topic given by the instructor. In addition, the boxplot of the post-test shows a substantial improvement compared to the grades of the pre-test. Furthermore, the whiskers and the quartiles of the post-test are narrower than the pre-test, which means that the grades in the post-test were more uniform as they were close to the mean.

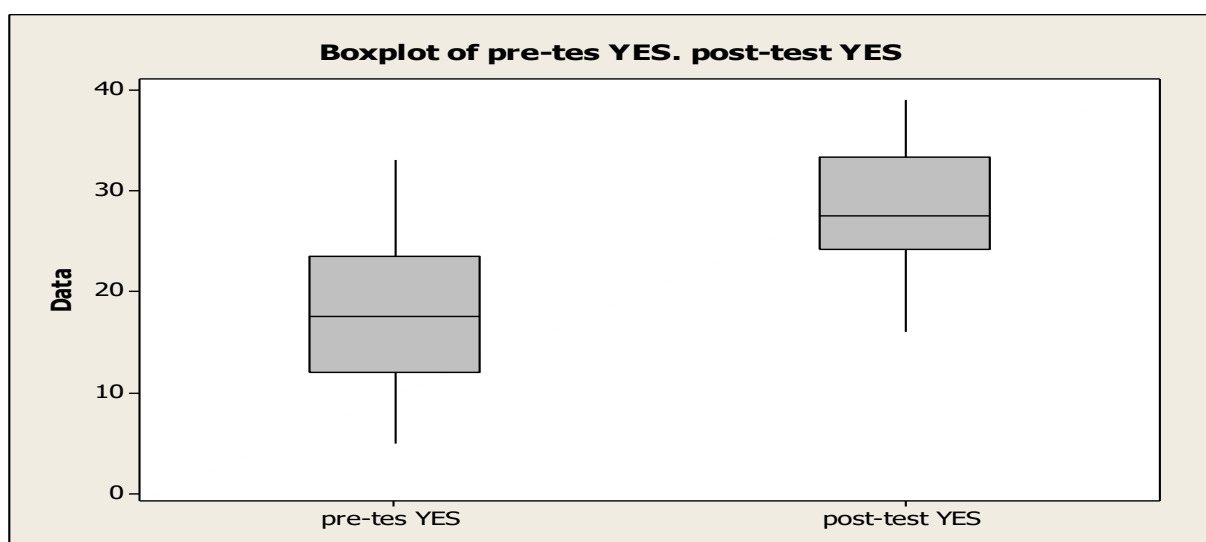


Figure 10. F.C. Grades for pre-test & post-test. Source: Authors

The boxplots in figure 11 present all the data from both groups the traditional and flipped groups. This graph summarizes and shows the differences in both groups, as well as how the students improved their grades in the post-test in both groups. Nevertheless, the figure shows that the group of students who received the intervention achieved better results than the group of students who received the classes in the traditional way. Moreover, the grades in every quartile were better because the quartiles were narrower and more uniform and compact comparing to the traditional class boxplot.

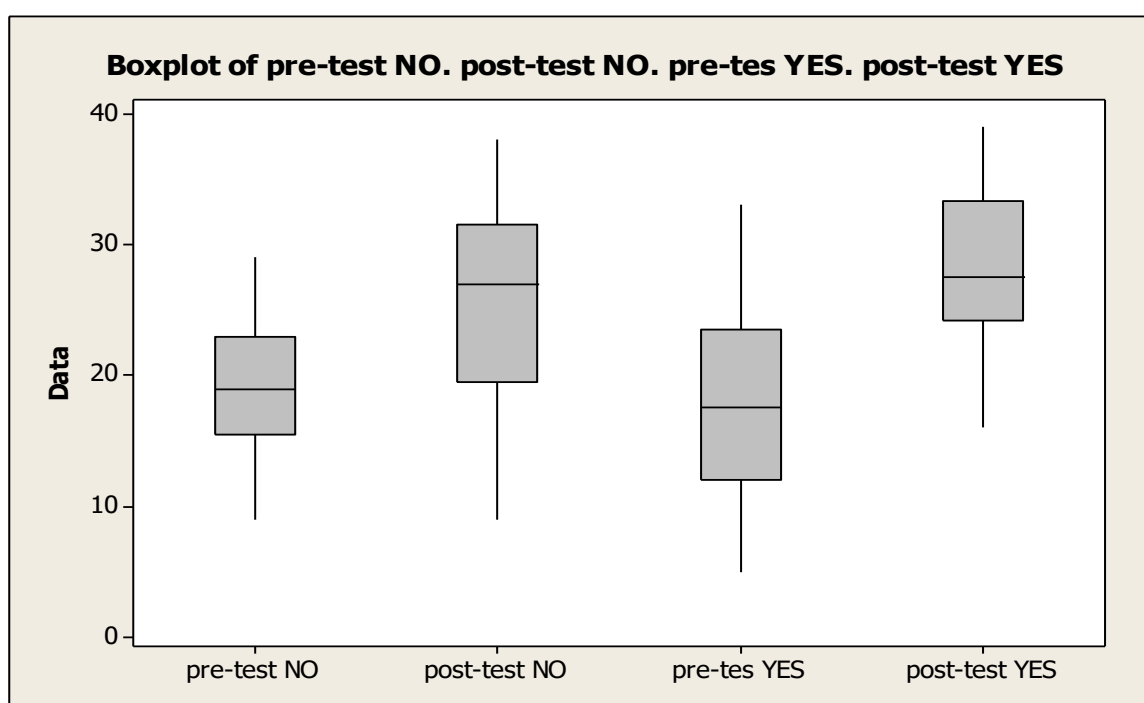


Figure 11. T.C. & F.C. Grades for pre-test & post-test. Source: Authors

The researchers consider it interesting and challenging to separate the groups by gender to see if one sex learned more than the other in either the traditional classroom group or the flipped classroom group. In the boxplots below, the data was analyzed first in the flipped classroom group and surprisingly it showed that women scored better than men did; this analysis suggests that women also took advantage of the flipped classroom model more than men did.

Moreover, the grades in the women's boxplot are more compact than in the men's boxplot.

Nevertheless, there are outliers that were beyond the upper and lower whisker. Future research regarding the application of this method (FC) in both gender groups could help understand which group learns more.

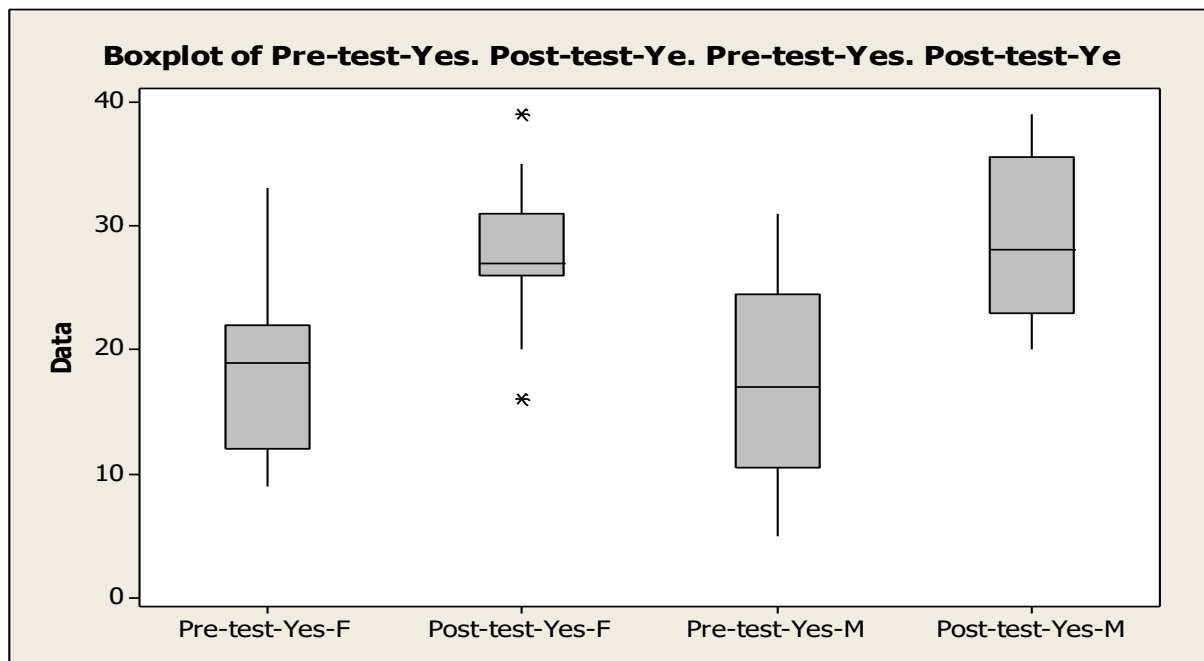


Figure 12. Flipped Class Grades for pre-test & post-test for Female (F) and Male (M). Source: Authors

Interestingly, the outcomes in the traditional group are similar from the treatment groups, especially because here women got better results than men did in the post-test and the women's grades are more uniform and compact than the men's grades. Figure 12 above showed that men got lower scores than women, and their grades were less uniform when comparing to the women's grades. Moreover, in figure 13 below, men's scores are also less uniform and lower than women's score. Based on these data, the researchers could conclude that the flipped classroom model caused a bigger effect on women than on men, which would be interesting to analyze in further studies.

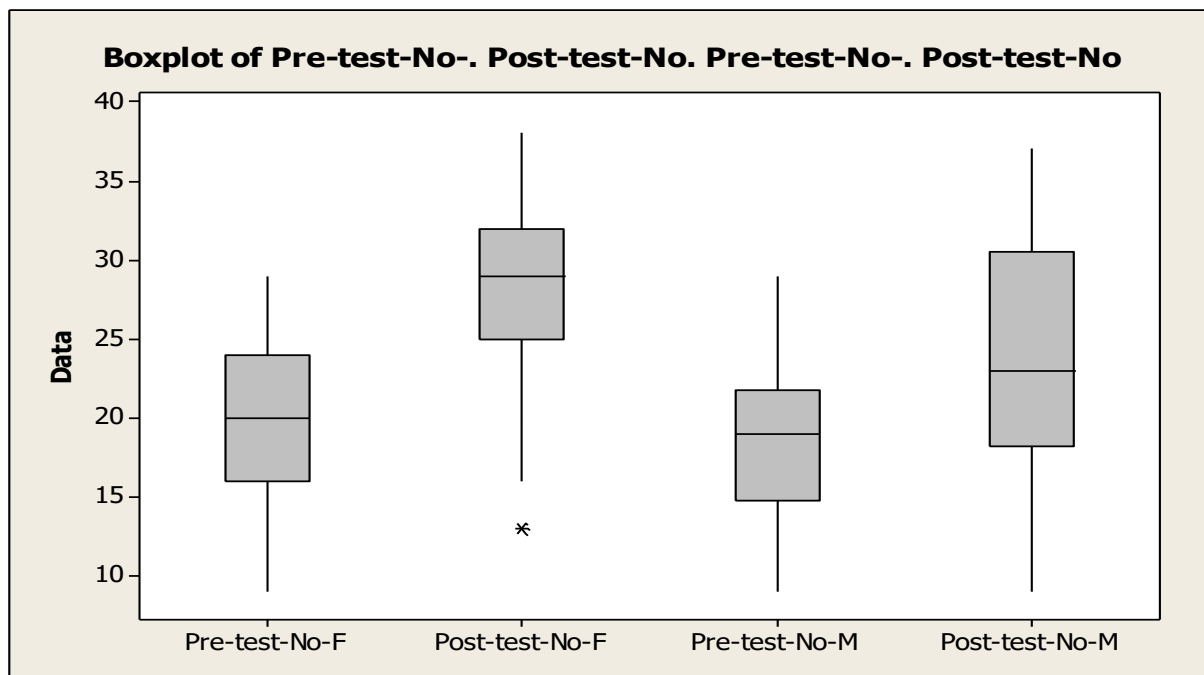


Figure 13. Traditional Class Grades for pre-test & post-test for Female (F) and Male (M). Source: Authors

When comparing the data shown in figures 12 and 13 before, the researchers could confirm the research hypotheses that students in the experimental group would accomplish higher scores than students in the control group.

4.5 Pair t-test between the pre-test and the post-test of the control group

Once the researchers had applied the diagnostic test to both groups and had analyzed the scores according to the CEFR, the researcher gave the pre-test to the participants. In the traditional class, only 33 students out of the 43 took part in the study; 15 students were women, and 18 students were men.

The t-test is used to determine if two population means are equal. In this study, the researchers found that this tool was useful to analyze the data from both groups. A hypotheses testing was conducted in order to determine if the means are different.

The hypotheses that the researchers tested using this tool were:

Alternative Hypothesis, Ha: The mean of the post-test is greater than the mean of the pre-test.

$$Ha: \mu_2 > \mu_1$$

Null Hypothesis, Ho: The mean of the post-test is equal to the mean of the pre-test

$$Ho: \mu_1 = \mu_2$$

The level of significance $\alpha = 0.05$

The control group of students who did not receive the treatment (the flipped classroom instructions), but followed the traditional class, had an average of 19 over 40 in the pre-test, and after in the post-test their mean rose to 25.30, showing an increase of 6.30 in the average grade. The growth was logical because the students received classes about the topics given in the test for three weeks, which generated this learning impact. The variance also increased at the end, which means that the grades were more disperse. When the t-test hypotheses was applied the researchers observed that the p-values are less than 0.05 as shown in the chart below, from which they concluded that the equality of means was rejected for the contrast of one tail because the p-value was 7,2935 E-10 and the p-value for the two-tailed test was 1,4587 E-09. (Pérez, 2002).

Table 8
Paired Sample t-test for the traditional class

	Pre- Test	Post-Test
Mean	19	25,3030303
Variance	27,8125	55,530303
Observations	33	33
P(T<=t) one tail	7,2935E-10	
P(T<=t) two tails	1,4587E-09	

Source: Authors

Figure 14 shows the difference between the pre-test and the post-test scores and the increase that most of the students had in their grades, however, very few of them got lower grades in the post-test which may mean that they did not take the post-test very seriously.

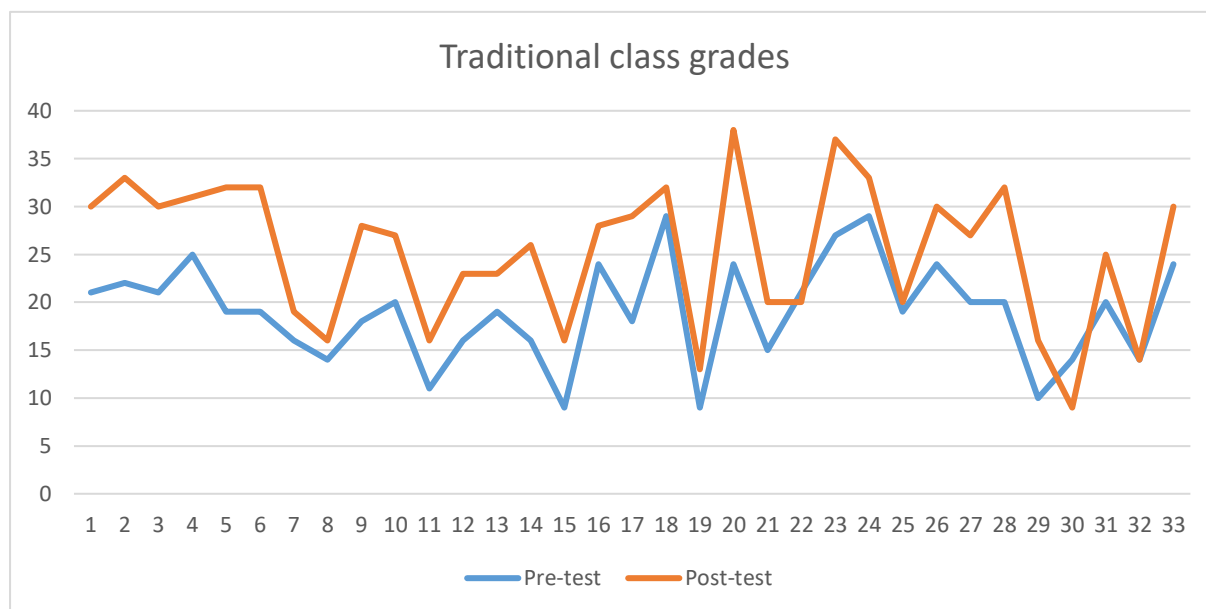


Figure14. Traditional class grades pre-test & post-test. Source: Authors

4.6 Pair t-test between the pre-test and the post-test of the experimental group

The t-test is used to determine if two population means are equal. In this study, the researchers found that this tool was useful to analyze the data from both groups. A hypotheses testing was conducted in order to determine if the means are different.

The hypotheses that the researchers tested using this tool were:

Alternative Hypothesis, H_a : The mean of the post-test is greater than the mean of the pre-test.

$$H_a: \mu_2 > \mu_1$$

Null Hypothesis, H_o : The mean of the post-test is equal to the mean of the pre-test

$$H_o: \mu_1 = \mu_2$$

The level of significance $\alpha = 0.05$

In the second group (the flipped classroom), where the treatment took place, just 28 students participated in the experiment; 15 students were women and 13 were men. This group took the pre-test before receiving the flipped classroom technique with a mean of 17,7 over 40 and after receiving the intervention (FC) for three weeks, their mean rose to 28,03 showing a remarkable increase of 10,3 points. Furthermore, the variance decrease after the participants have received the treatment, which means that the grades were less dispersed and more uniform than before. After applying the t-test, where the p-values were less than 0.05, the researchers concluded that the equality of mean H_0 was rejected in the contrast of one tail because of the p-value (2,82565E-13) and the p-value for the-two tailed test was 5,65129E-13 as shown in the following chart. (Pérez, 2002)

Table 9
Paired Sample t-test for the flipped class

	Pre-test	Post-test
Mean	17,78571429	28,0357143
Variance	50,91534392	36,4060847
Observations	28	28
P(T<=t) one tail	2,82565E-13	
P(T<=t) two tails	5,65129E-13	

Source: Authors

In the experimental group, the chart shows the differences students got between their pre-test and the post-test and how much they improved because of the flipped classroom technique. Figure 15 also shows that very few students did not improve or got even worse grades than before.

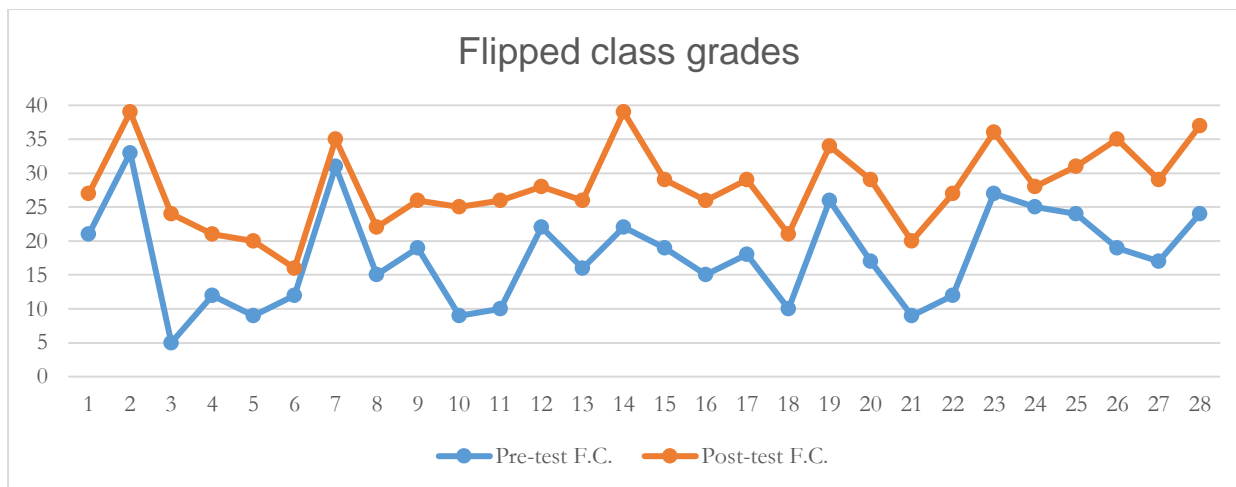


Figure 15. Flipped class grades pre-test & post-test. Source: Authors

Here, the researchers concluded that for both cases, the null hypothesis (H_0) was rejected, and H_a was not rejected. This suggests that the role of the teachers and the methods and techniques they used affected the outcome of both groups. However, while comparing both figures, the researchers noticed that there was a difference in their means; the students who received the flipped classroom technique scored better grades than the ones of the traditional classroom, a remarkable difference of 4 points. Besides, there was a difference in the variance of both groups; the variance of the traditional class group was 55.53, while the treatment group was 36, which means that the grades of the flipped classroom group are more compact, more uniform; indicative of a better group of students. This showed the researchers that this new way of teaching (FC) gave better results than the traditional methods.

4.7 Student t-test between the post-test of the experimental group and the post-test of the control group

The hypotheses that the researchers tested using this tool were:

Alternative Hypothesis, H_a : Those students who received the class with the flipped classroom technique achieved better results than those who did not receive the treatment (the traditional class).

$$H_a: \mu_1 \neq \mu_2$$

Null Hypothesis, H_0 : There is no difference between those students who received the class with the flipped classroom technique than those students who did not receive the treatment.

$$H_0: \mu_1 = \mu_2$$

The level of significance $\alpha = 0.05$

In the table below, the researchers applied the t-test to both groups the traditional and the treatment group in the post-test with a 0.05 level of confidence, different number of observations and with a mean difference of 1.2. This difference in mean was obtained after following some statistical procedures. The results show that the mean of the post-test in the traditional class was lower than in the flipped class, showing that students who studied with the new methodology learned more than those who received the traditional class. In addition, the variance in the flipped classroom was lower than in the traditional class. This means that the grades in the treatment were more uniform and closer to the mean, while in the traditional class the grades were more disperse. The p-values in both cases were less than 0,05 as shown in the table below. The researchers concluded from these results that equality of means H_0 was rejected.

Table 10
T-test for both the Traditional and Treatment Groups

	Post-test Traditional Class	Post-test Flipped Classroom Class
Mean	25,3030303	28,03571429
Variance	55,53030303	36,40608466
Observations	33	28
Hypothetical mean difference	1,2	
P(T<=t) one tail	0,013213466	
P(T<=t) two tails	0,026426933	

Source: Authors

4.8 Results from survey

The students who participated in the survey were the students who received the treatment (the flipped class). The survey showed that most of the students preferred the flipped classroom technique. However, there were some students who were neutral, and other few students who favored the traditional class method.

In the first question, ‘What is the instructional preference between the traditional class and the flipped classroom approach?’ 57% of the students preferred the flipped classroom technique; 21.25% of them strongly preferred it, and 35.75% normally preferred. 28.75% did not have a preference in learning, while 10.75% of the students preferred the traditional class, and 3.5% of them strongly preferred the traditional class. Figure 16 shows both the number and percentage of students who favored each approach.

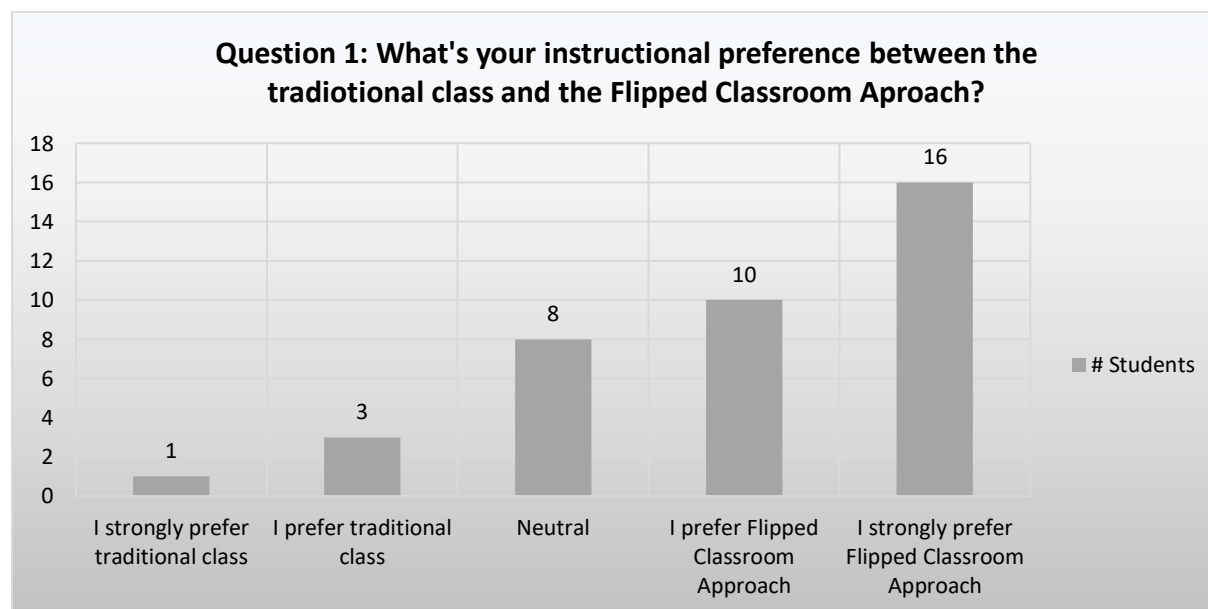


Figure 16. Survey question 1. Source: Authors

Table 11 below shows some of the comments students wrote in the survey regarding the first questions.

Table 11*Survey question 1 comments*

Question 1. What is the instructional preference between the traditional class and the flipped classroom approach?	
I strongly prefer the traditional class	In all the stages of my life, my education was based on the traditional class. It would be very difficult to get adapted to a new methodology today.
I prefer the traditional class	The professor can give more details to learn the subject. Class activities I feel like I learn more and easier in this way. If I have any doubts, I can ask in that moment.
Neutral	I like normal classes. I do not have any preferences. The traditional class is more enjoyable and effective. I like both methods. I consider that it good to innovate, but the background is important that is why it is important to write notes and class explanations. I can ask questions if there are doubts. The fundamental part is in the autonomous work, the rest is complementary. I think it can be combined in a 50%.
I prefer the flipped classroom	It helps me to work in my own pace and comfortably. Besides, I always do autonomous work in every subject. There are more activities in class and it allows us to practice. We got previous knowledge and then the professor clarifies any doubt. We learn more working in groups. I feel like I interact more when we work in groups and I get more interested in the topic. Because I can research the topic, and then I can come and ask. That is why I prefer the flipped classroom approach. Because I can research more the topic at home and if I have any doubt, I can ask in class. Because I can practice it out of class and it becomes easier to understand. Because it helps you to prepare and study for the exam. I learn a lot more. It is more didactic.
I strongly prefer the flipped classroom approach	Because it helps students to understand better because I have some supportive material to check. Because it provides with some help to students to learn and get knowledge.

Source: Authors

From these comments, we could conclude that most of the students consider this new way of teaching (FC) very useful and helpful to learn English as a second language.

In the second question, ‘how often do you do autonomous work assigned before a class; reading, videos, audios, PowerPoints, activities?’ all the students replied that they always did autonomous work. However, 25% of the students said they did it every week, another 25% replied they did it most of the weeks, 35.75% told us they did it about half the time, and the other 14.25% confessed they did these assignments less than half the times they were sent to them. From this data, we can conclude that most of the students did autonomous work, and just a very small percentage did not do more than half of these assignments.

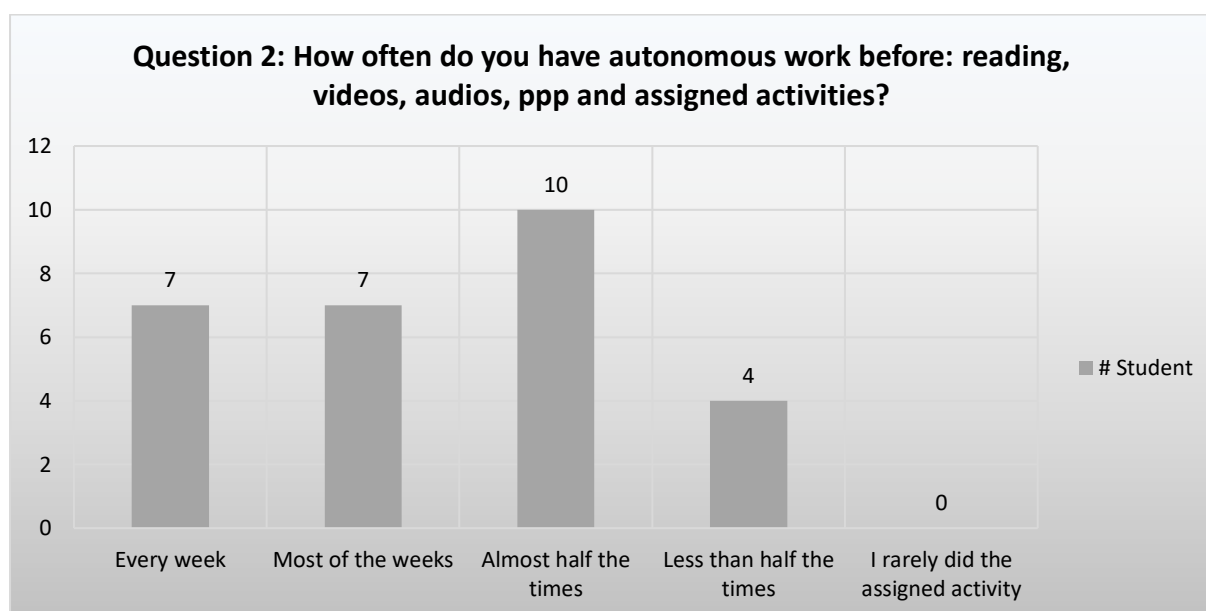


Figure 17. Survey question 2. Source: Authors

The third question asked, ‘In your opinion, what is the level of difficulty of the assigned autonomous work?’ Just 14.25% of the students considered this work difficult, and nobody thought it was very hard. At the other end of the scale, 14.25% thought that these autonomous assignments were easy, but nobody considered them easy. Finally, a high percentage, 71.50% of the students, felt neutral about the level of difficulty of these kinds of tasks. It can be concluded

that these assignments were not really hard, nor easy, but had a normal level of difficulty that everybody felt achievable.

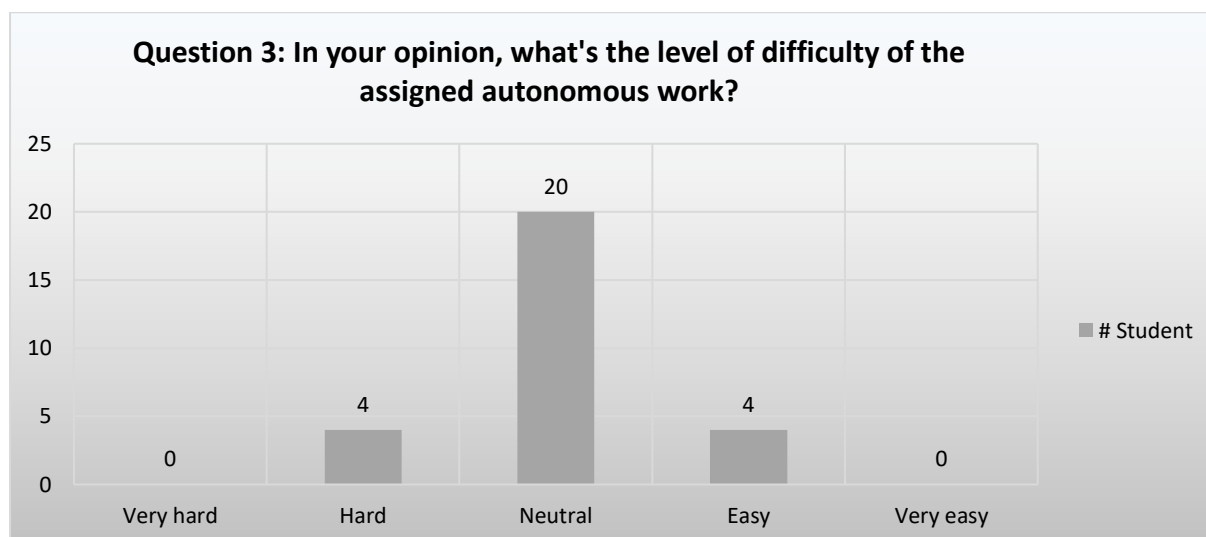


Figure 18. Survey question 3. Source: Authors

Question four asked, ‘Do you consider that cooperative work has helped you to improve your skill to learn English?’ None of the students disagree with this question, nevertheless, a low percentage (14.25%) of them felt neutral about it. However, a very high percentage (85.75%) thought that cooperative work has helped them to improve their skills to learn English. From the vast majority, 57.25% agree and 28.75% strongly agree with this question.

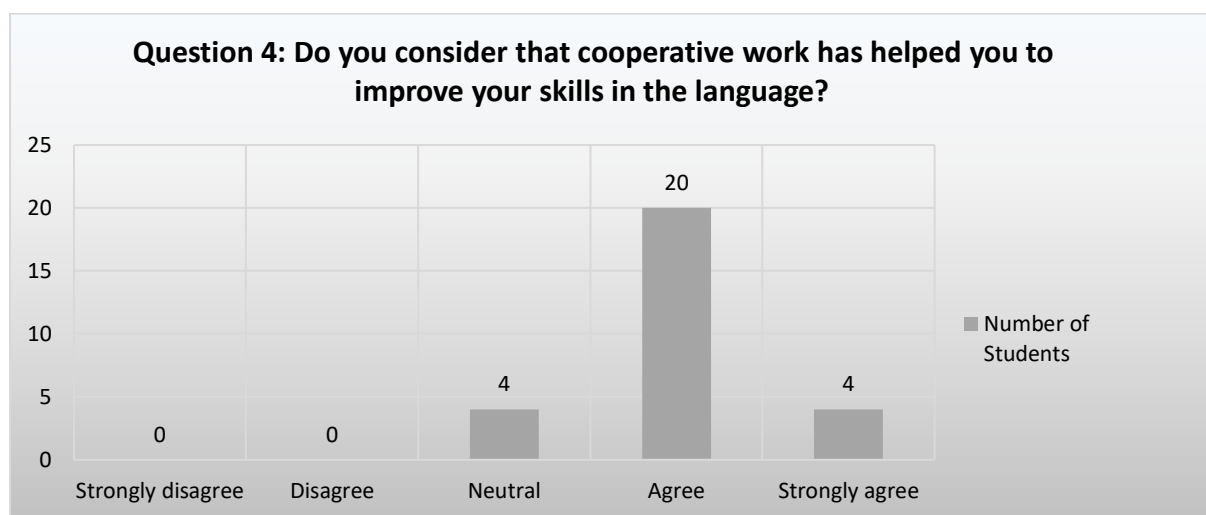


Figure 19. Survey question 4. Source: Authors

The fifth question asked, ‘Do you consider that the professor’s feedback has been effective to apply this new methodology?’ Most of the students were positive about this question, considering the professor’s feedback effective when he applied this new way of teaching. 57.25% of the students agreed and 28.25% strongly agreed with this statement, and only 14.25% were neutral about the role of the teacher to apply this new methodology. Nobody (0%) disagreed with this statement.

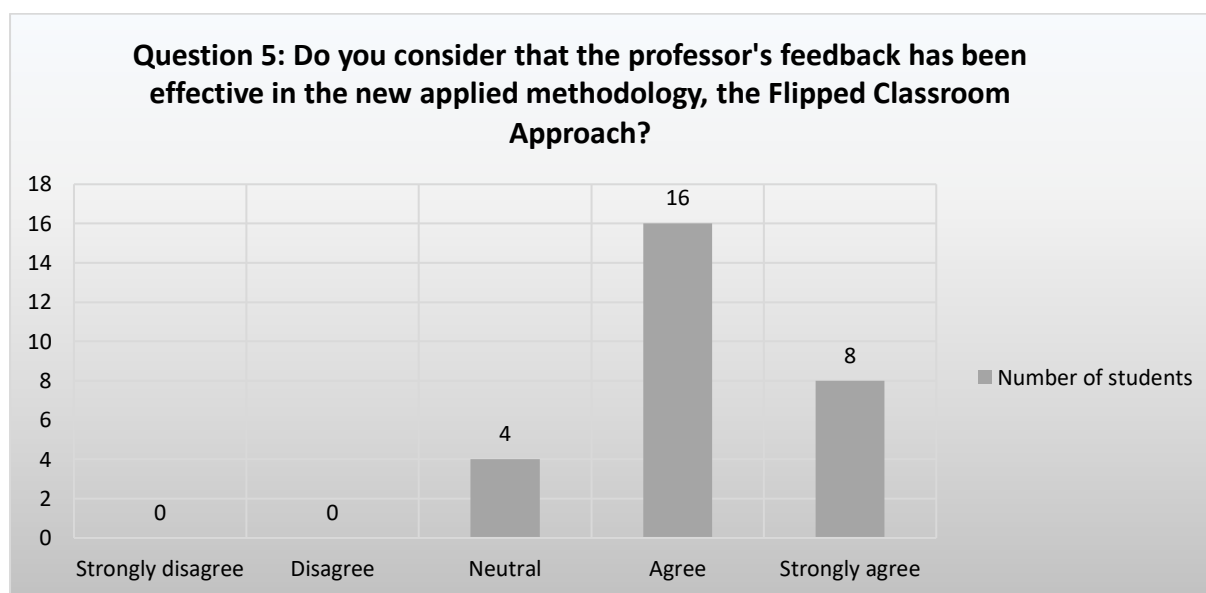


Figure 20. Survey question 5. Source: Authors

In the final question, ‘How useful do you consider this methodology to learn grammar in English?’ 14% of the students (4 of them) were neutral regarding the flipped classroom approach. Nevertheless, 86% (24 students) considered that this methodology was useful to learn grammar in English. From this data, it can be concluded that most of the students found this methodology useful to learn grammar. 0% of the students (Nobody) considered this new way of teaching useless.

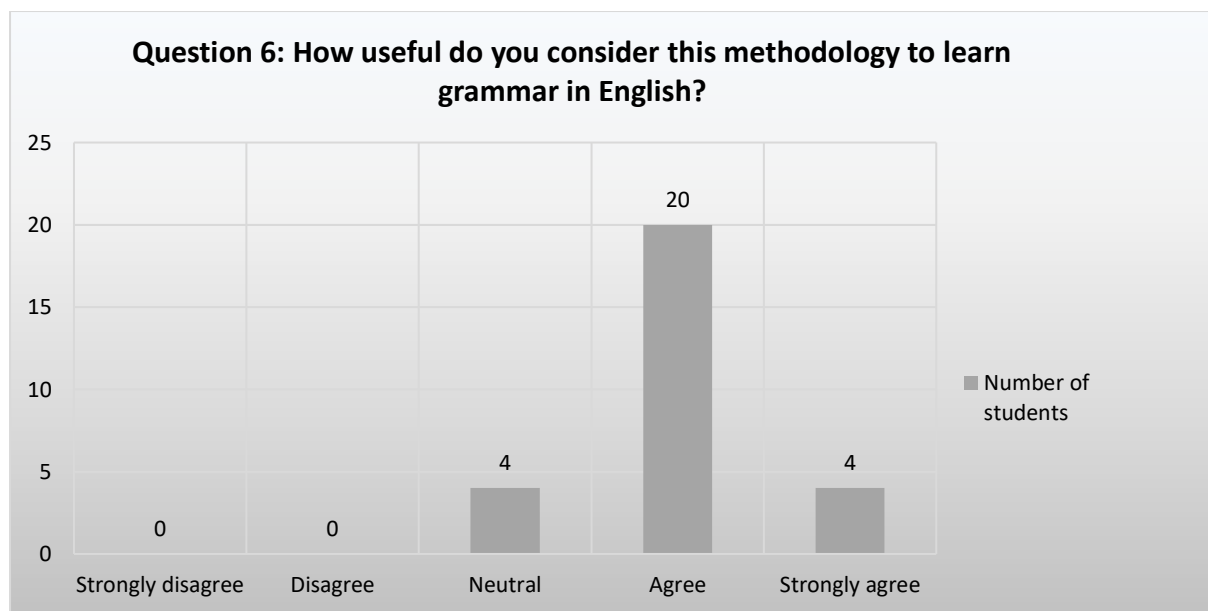


Figure 21. Survey question 6. Source: Authors

4.9 Summary

The results presented in the graphs showed that this new way of teaching, the flipped classroom technique, was both useful and effective for students to learn grammar in English. It also showed that most of the students preferred this methodology, but just 14.25% considered the traditional approach a better way to learn. Students also favored the way the professor gave feedback to them using the flipped classroom technique and it could be inferred from questions 2, 3, and 4 that autonomous work, group work, and cooperative work, which are essential tools when applying the flipped classroom, have become part of their learning process.

CHAPTER V

Discussion

5.1 Introduction

This research work has been of great help to the researchers because of the data they collected as well as the analysis done to reach to a number of conclusions based on the findings.

In this chapter, the researchers will discuss and explore the significance of the findings and will discuss why the researchers think those results occurred; besides they will draw on their experience as the researchers in the room and the conclusions and findings of other writers from the literature review.

5.2 Findings from pre-test and post-test

Average scores in the pre-test were slightly different. In the control group, the mean was 1.2 points greater than the experimental group showing that students had more previous knowledge than those from the experimental group even though both groups were in the same level of English (B1 according to the CEFR).

Average scores in the post-test showed a significant difference. The students who received the new methodology had 3 points higher in their mean than those of the traditional class group. However, the researcher found out that the improvement was higher because of the difference in the mean in the pre-test, which means that the students who received the intervention had 4.2 points higher when comparing their means.

Comparing the results of both groups individually, the experimental group had an improvement of 10.3 points in the mean (pre-test, 17.8; post-test 28), while the control group increased their average grades in 6 points (pre-test, 19; post-test, 25). This means that the students who followed the flipped classroom achieved better than those of the traditional class in

4.3 points, which is a remarkable difference when comparing the means of both groups. This improvement happened even though the material that the researchers used in both groups were quite similar so that both groups would benefit from them. Flumerfelt (2013) found out that this technique helped students to improve the language.

Both groups the control and the experimental group improved regarding the method they received, showing that the role of the professor was an important key factor. Nevertheless, the study showed that the students who received the treatments achieved better than those who did not receive the treatment as Crews & Butterfield (2014) mentioned in their study.

Average scores in post-test when comparing the groups according to their sex, it was found that women benefited more than men did from this new way of teaching. However, the researchers found that this outcome was important for future studies to determine whether it occurs in different scenarios.

The survey showed that most of the participants preferred the flipped classroom technique than the traditional one. In addition, most of the comments confirmed the usefulness and effectiveness of the flipped classroom technique. The researchers found out that students came to class more confident and their participation increased because of the knowledge they had previously acquired from materials they saw at home before class.

5.3 Research questions analysis

In the first research question, “What difficulties do learners and teachers encounter when dealing with grammar in the EFL classroom?”

One of the main difficulties learners and teachers encountered while dealing with grammar in the classroom is the lack of time to cope with all the different structures presented in a course program. In this study, the researchers found that the difficulties for both groups were

different. The students in the control group had more problems to learn grammar because they did not have enough time to practice it in different context despite of the effort of the professor. Another difficulty students had was regarding their homework because some of them just copied, others did not work because they felt insecure or had too many doubts, and others did it in the wrong way. So when they came to class, it was harder for the teacher to help those students in class and it took more time for them to do the grammar activities, and many times, the teacher had to leave out some activities. In the control group, the main difficulty that the researcher found was that some students did not have internet access to work at home, as this new methodology required. Another problem was that some students did not watch the videos and PowerPoint presentations sent by the teacher, which made it more difficult for them to work properly in class and for the teacher to do what he had planned.

Nowadays, the main focus in an EFL classroom is to develop the productive skills through the communicative approach therefore little time is devoted to long grammar explanations. Most of the time, grammar is conducted through a self-discovery activity and in that way, teachers sometimes assume students have understood or discovered what they want them to know. However, this does not always happen.

Another difficulty is that some learners need more time to go over and over a grammatical rule to understand how that piece of language works before putting it into practice even though some theories read that grammatical explanations are not really necessary to get learners to start using the target language.

On the other hand, the pace at which different students learn is not always the same, which presents another difficult situation for teachers especially if large groups are involved.

The second research question asked, “What advantages and disadvantages do learners and teachers find when applying the flipped classroom in an EFL context?”

This study shows that both teacher and learners had different advantages or benefits from using the flipped classroom model. For instance, students became more responsible and autonomous for their own learning because they got to know the content beforehand; they could work on their own pace and revise the content as many times as they needed. They became more active and self-critical in class. Students and teachers benefited from the organization and advance planning that allowed them to work better in class sessions. Teachers could get feedback from students about the usefulness and quality of the videos and power points so teachers could reuse or change them. Teachers also had more time for meaningful activities and class analysis, and finally there were also some students who had benefited from self-explanation since they began using this method. Some of these advantages and benefits were also mentioned by some researchers like Flumerfelt (2013), Crews & Butterfield (2014), Herreid & Schiller (2013), Togger (2013), Enfield (2013), Talley & Scherer (2013) among others,

On the contrary, the researchers also noticed that the flipped classroom presented some pitfalls or drawbacks. For instance, the researcher identified three major difficulties. The first was that some students came to class unprepared, showing a lack of responsibility and resulting in failure to learn the grammatical goals, to work properly within the class activities, to participate and collaborate within their group work. The second difficulty was for the teachers to find good quality videos, which would interest and engage students into learning, thus, these videos had to be relevant and meaningful to the topic that they had seen in class and the third difficulty was when students had no access to internet or when the internet connection failed. Togger (2013) in the revision of the literature pointed out that if teachers do not plan in advance,

the model will not succeed. He also mentioned that there are students who have some issues with having to study from videos while others would give more credit to the videos than to the face-to-face classes.

The flipped classroom approach follows the constructivism theory because students build their own knowledge when they work by their own and at their own pace at home to later interact with their classmates and teachers on meaningful activities. According to Saunders (2014), students acquire knowledge through social interactions and experiences following Vygotsky's social constructivism theory. He added that concepts from Vygotsky's social constructivism theory are evident within the inverted classroom curriculum and as a consequent works very well within this framework. This theory suggested teachers to apply scaffolding activities within the flipped classroom approach to support students' reasoning and problem solving skills. The inverted classroom teachers need to be aware that the activities they implement in class and the ones they send home would help students to build their knowledge effectively.

In the third question, "How do students in classrooms utilizing flipped instruction, and Traditional Instruction with lecture-homework learning strategies, compare academically on grammar achievement?" The researchers found that there was a remarkable difference when they applied the two different approaches. In the traditional class the mean of the pre-test was 19, and in the post-test the mean was 25.30 over 40 points. Conversely, in the flipped classroom class, the mean in the pre-test was 17.78, and the mean in the post-test was 28.03. Therefore, the increase in the treatment group was 10.30, and in the traditional class, the increase was 6.30 as mentioned before. Moreover, the variance in the treatment group was lower than in the traditional one ($VF.C = 36.40 \leq VT.C55.53$) which means that students' scores in the flipped group were more uniform and compact than in the traditional group. Additionally, the students'

comments from the survey showed that they benefited more and achieved higher score with the flipped instructions than those who followed the traditional approach as indicated in a previous table.

The researchers found that the experimental group not only achieved better than the control group when dealing with grammar, but they became more autonomous, they expressed their ideas with more confidence and accuracy. In these three weeks, the researchers could notice that there was a remarkable difference in the learning of grammar outcome when learners were serious and responsible. From the results and from the survey, the researchers noticed that some students from the experimental group took more advantage of this new methodology than others from the same group because as they mentioned in the survey, they liked the methodology implemented and mostly because they found this new of teaching was really useful to them. It can be concluded that students who received the treatment achieved better than those who received the class in the traditional way.

In the fourth question, “What is the level of satisfaction of the students at the end of the intervention?” First, we need to mention that the students who participated in the survey were the students who received the treatment, the experimental group. From the survey, the researchers could notice that a high percentage of the students preferred the flipped classroom technique. However, there were some students who were neutral, and other few students who favored the traditional class method. The percentage of students who preferred this methodology was 57%; 21.25% of them strongly preferred it, and 35.75% normally preferred. 28.75% did not have a preference in learning, while only 14.25% of them preferred the traditional class; 10.75% of them normally preferred the traditional class, and 3.5% of them strongly preferred the traditional class.

Some of the things that students mentioned regarding their preference to this methodology were “Because I can research the topic, and then I can come and ask. That is why I prefer the flipped classroom approach. There are more activities in class and it allows us to practice. We got previous knowledge and then the professor clarifies any doubt. Because I can practice it out of class and it becomes easier to understand. It is more didactic. Because it helps students to understand better since I have some supportive material to check.”

However, there were some comments against this methodology from the 14.25% where students showed their preference towards the traditional class. Some of the comments were; “In all the stages of my life, my education was based on the traditional class. It would be very difficult to get adapted to a new methodology today. If I have any doubts, I can ask in that moment.”

The researchers considered useful to highlight some of the neutral comments where students did not have any special preference towards a particular methodology. Some of their comments were I like both methods. I think it can be combined in a 50%. The fundamental part is in the autonomous work, the rest is complementary.

From the last question of the survey “How useful do you consider this methodology to learn grammar in English?” Students confirmed their preference to this methodology when 86% of them favored this methodology, 14% showed themselves neutral and nobody was against it.

From these comments, the researchers could conclude that a great number of students showed a preference to this new way of teaching (FC) because they considered it very useful and helpful to learn grammar in English as a second language.

5.4 Assumptions of the study

It was assumed that all the participants were able to read and understand the questions of the survey as it was done in their native language, Spanish. The researchers also assumed that the experimented group has never been exposed to this methodology, the flipped classroom.

Participants were enrolled in an intermediate A class, so it was supposed that all of them had at least an A2 level, but it was discovered after the diagnostic exam that some of them were just A1 according to the CEFR. It was finally assumed that the participants understood this new way of learning and applied it as they were instructed, watching the videos as many times as they needed, reading with attention the information provided to them through the PowerPoints that the professor sent them, and following some instructions related to this methodology.

5.5 Limitations

This research work was applied to students who were enrolled in intermediate A (B1 level) in a prestigious university in the city of Guayaquil, where two intact groups took part in the study. One group received the class in the traditional way and the second group received it with the intervention (FC). The research groups were not chosen at random which is considered a limitation for the authors.

There were some other limitations in this study; one limitation was the size of the study group as mentioned in the previous paragraph.

Another limitation was the level of English the participants had. A large number of students (36% in the traditional class and 45% in the treatment group) had a level of English rated at A1. The period of time when the research took place may have been another limitation because it was the end of the semester, when students felt pressure and conflicting demands from other subjects and sometimes they missed classes.

5.6 Further research

Further quantitative and qualitative research to study the effect of flipped instructions in learning English as a foreign language (LEFL) in the four skills would help to confirm the importance of our findings.

Interesting sub-divisions could be made: firstly by splitting men and women, as previously mentioned and also measuring variance according to age, school background (whether private or public school), place of residence, social status, among other factors. The researchers have noticed that all these factors may affect students' learning for a number of reasons. Hence, it would be interesting to go deeper into these fields to test the effectiveness of the flipped classroom considering each one of these aspects in the four skills, as well as studying the perception of the participants in the different groups giving the opportunity to do further research following different approaches.

5.7 Conclusions

The findings of this study lead to some important conclusions. First, students learn more when the professor flips the class because they attend class with previous knowledge ready to take part in class discussion. Second, learners feel more confident in class due to the flipped instructions therefore, their interaction increases. Third, the teacher has more time in class to do more grammar practice in class and create activities that are more productive where learners put into practice what they have learned at home. Finally, the flipped classroom approach creates a better class environment for both teachers and students because learning becomes more active in class and passive at home so the outcome improves remarkably.

5.8 Recommendations

Based on the findings of this study, we recommend that teachers implement the flipped classroom technique. When doing so they should take into consideration the following suggestions. First, explain this new way of teaching to the students making sure all of them really understand the purpose and goal of this methodology to achieve better results. Second, send short, interesting and practical videos that help students to understand and learn the topic in a simple and easy way. Third, make clear PowerPoint presentations, for example in the case of flipping grammar, make sure to include in every presentation not just the form, but also its meaning and use with practical examples and pictures. Fourth, teachers should include group work activities with the videos and PowerPoint slides students use at home to encourage them to work more seriously and consciously at home. Fifth, classroom teachers ought to implement the suitable classroom management and formative assessment strategies to ensure that learners stay on-task and productive while working cooperatively and collaboratively in the active learning component of the inverted classroom. Sixth, teachers need to make accommodations regarding students' need. Finally, teachers need to take advantage of the time they get by applying this new way of teaching creating active learning environment.

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1. PRE-TEST FOR PILOT GROUPS

APPENDIX A

Pre-Test – Quantitative Research

ESCUELA SUPERIOR POLITECNICA DEL LITORAL

GUAYAQUIL – ECUADOR

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THE FLIPPED CLASSROOM MODEL ON A2 ENGLISH LEVEL (CEFR) STUDENTS' ACHIEVEMENT IN THE LEARNING OF GRAMMAR AS A FOREIGN LANGUAGE

1. Complete the paragraph with the correct form of the verbs (past simple or past continuous) 5 marks

Two years ago, my mom and I _____ (travel) to the highlands when something really strange _____ (happen). A weird noise _____ (break) the silence of the trip and our car immediately _____ (stop). While we _____ (get off) the car, we _____ (see) a strange light coming from above. It almost _____ (make) us blind. My mom _____ (grab) my arm and _____ (tell) me to be quiet. We never _____ (know) what it was.

2. Choose the correct option to complete these sentences. (5 marks)

- a. We stayed in Madrid for two nights and then we _____ to Barcelona. It was a nice trip.
 - a. Were going
 - b. went
 - c. go
- b. _____ TV when Ian called?
 - a. Did you watch
 - b. you were watching
 - c. were you watching
- c. I _____ Ali 2 days ago.
 - a. Saw
 - b. was seeing
 - c. were seeing
- d. At 8.30 yesterday, they _____ travelling to Quito.
 - a. Was
 - b. are
 - c. were
- e. What did you do after _____ university?
 - a. Did you leave
 - b. you were leaving
 - c. you left

3. Complete the sentences with the correct form of CAN or HAVE TO, positive or negative (10 marks)

- a. Is there a cash machine near here? I _____ get some money.
- b. "Can I get myself a glass of water?" "Of course you can. You _____ ask."
- c. Where I live, you _____ buy anything after 6 pm. All shops are closed.
- d. Daniel's not coming to work today. He _____ go to the doctor's.
- e. Ok, I can hear you! You _____ shout!
- f. Foreigners think Ecuador's a cold country in winter. But they _____ bring heavy clothes because it is not really cold.
- g. The university likes teachers to dress smartly. You _____ wear jeans, and men _____ wear a tie.
- h. Sorry, I _____ meet you for dinner tonight. I _____ take my daughter to her violin classes.
- i. I _____ get up at 5:00 on a typical day.
- j. This weekend is really stressing! I _____ do a lot of things from my work.

4. Choose the correct option. (10 marks)

1. Mary is going to Cuenca on a business trip, so she _____ pay for her fare.
 - a. Doesn't have to
 - b. don't
 - c. doesn't have
2. A: Can Jerry meet us at the cinema? B: Yes, _____
 - a. He is
 - b. he can
 - c. he does
3. _____ speak to the manager, please?
 - a. I can't
 - b. Can I
 - c. I can
4. Sara and Peter can't go out this evening. They _____ study for a test.
 - a. Has
 - b. have to
 - c. have
5. You _____ go out if you're feeling tired.
 - a. Can't
 - b. shouldn't
 - c. should
6. The notice in the park says you _____ swim in the lake in summer.
 - a. Have to
 - b. can
 - c. should
7. You _____ a visa if you want to travel to some countries.
 - a. Should
 - b. have to
 - c. can
8. If you need to get a book out of the library, you _____ leave your university ID.
 - a. Can
 - b. should
 - c. don't have to
9. You _____ be an adult to get married.
 - a. Have to
 - b. can
 - c. should
10. Robert is taking the TOEFL exam next week. So he _____ study a lot to pass it.
 - a. Can't
 - b. have to
 - c. has to

5. Complete the sentences with the correct form of the adjectives (10 marks)

- a. It's much _____ (wet) in the north of the country than in the south.
- b. Jaime is _____ (relaxed) person I know.
- c. Annie is much _____ (happy) now than she was.
- d. Soraya is as _____ (good) at her job as Anita is.
- e. Carlos is much _____ (energetic) than I am.
- f. That's _____ (bad) meal I've ever had here.
- g. This report isn't as _____ (interesting) as the last one.
- h. Is this _____ (good) hotel you could find?
- i. I can't feel my feet! Today I'm _____ (tired) than yesterday.
- j. Vicky is _____ (careful) girl I've ever met.

2. INFORMED CONSENT

APPENDIX B

Informed Consent Form For A Quantitative Research

ESCUELA SUPERIOR POLITECNICA DEL LITORAL

GUAYAQUIL – ECUADOR

RESEARCHERS: Maritza Elizabeth García Arana, Escuela Superior Politécnica del Litoral

Jaime Roberto Pizarro Velasteguí, Escuela Superior Politécnica del Litoral

THE FLIPPED CLASSROOM MODEL ON B1 ENGLISH LEVEL (CEFR) STUDENTS' ACHIEVEMENT IN THE LEARNING OF GRAMMAR AS A FOREIGN LANGUAGE

Please read and complete this form carefully. If you are willing to participate in this study, sign it at the end of the form. If you do not understand something and would like more information, please feel free to ask.

I, here by voluntarily consent to participate in the study “THE FLIPPED CLASSROOM MODEL ON B1 ENGLISH LEVEL (CEFR) STUDENTS’ ACHIEVEMENT IN THE LEARNING OF GRAMMAR AS A FOREIGN LANGUAGE”. I have read and understood the following:

- The purpose of the study is to examine the impact and effectiveness of the flipped classroom method on students’ achievement in the learning of grammar.
- The study will be carried out for a period of 3 weeks.
- I will be asked to participate in two tests. One at the beginning of the study and the other at the end. These tests will be in paper and they will be graded by the researchers.
- The results of these tests will not affect in any way my regular grades at my current program of study.
- I will be also asked to fill in a survey of satisfaction that will be kept anonymous and it will be read only by the researchers.
- I may withdraw from the study at any time with no negative repercussions and request the destruction of all data related to my person.
- There are no reasonable foreseeable (or expected) risks.
- I will receive neither benefit nor discomfort from my participation in this study.
- No information of this study shall be passed on to a third party such as another institution.
- All data will be kept for three years and then will be destroyed.

If I have any questions or issues, I can contact Maritza García or Jaime Pizarro at mgarciaa@espol.edu.ec or jpizarro@espol.edu.ec.

Subject's Name (print) _____

Subject's Signature: _____ **Date:** _____

Researcher's Signature: _____ **Date:** _____

Researcher's Signature: _____ **Date:** _____

3. PRE-TEST AND POST TEST FOR RESEARCHED GROUPS

APPENDIX C

Pre-Test – Quantitative Research

ESCUELA SUPERIOR POLITECNICA DEL LITORAL

GUAYAQUIL – ECUADOR

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Jaime Roberto Pizarro Velasteguí, Escuela Superior Politécnica del Litoral

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- 1. Complete the paragraph with the correct form of the verbs (past simple or past continuous) 10 marks**

Two years ago, my mom and I _____ (travel) to the highlands when something really strange _____ (happen). A weird noise _____ (break) the silence of the trip and our car immediately _____ (stop). While we _____ (get off) the car, we _____ (see) a strange light coming from above. It almost _____ (make) us blind. My mom _____ (grab) my arm and _____ (tell) me to be quiet. We never _____ (know) what it was.

- 2. Choose the correct option to complete these sentences. (5 marks)**

- f. We stayed in Madrid for two nights and then we _____ to Barcelona. It was a nice trip.
 a. Were going b. went c. go
- g. _____ TV when Ian called?
 a. Did you watch b. you were watching c. were you watching
- h. I _____ Ali 2 days ago.
 b. Saw b. was seeing c. were seeing
- i. At 8.30 yesterday, they _____ travelling to Quito.
 b. Was b. are c. were
- j. What did you do after _____ university?
 b. Did you leave b. you were leaving c. you left

3. Complete the sentences with the correct form of CAN or HAVE TO, positive or negative (10 marks)

- k. Is there a cash machine near here? I _____ get some money.
- l. "Can I get myself a glass of water?" "Of course you can. You _____ ask."
- m. Where I live, you _____ buy anything after 6 pm. All shops are closed.
- n. Daniel's not coming to work today. He _____ go to the doctor's.
- o. Ok, I can hear you! You _____ shout!
- p. Foreigners think Ecuador's a cold country in winter. But they _____ bring heavy clothes because it is not really cold.
- q. The university demands teachers to dress smartly. You _____ wear jeans, and men _____ wear a tie.
- r. Sorry, I _____ meet you for dinner tonight. I _____ take my daughter to her violin classes.
- s. I _____ get up at 5:00 on a typical day.
- t. This weekend is really stressing! I _____ do a lot of things from my work.

4. Choose the correct option. (5 marks)

- 11. Mary is going to Cuenca on a business trip, so she _____ pay for her fare.
a. Doesn't have to b. don't c. doesn't have
- 12. A: Can Jerry meet us at the cinema? B: Yes, _____
a. He is b. he can c. he does
- 13. _____ speak to the manager, please?
a. I can't b. Can I c. I can
- 14. Sara and Peter can't go out this evening. They _____ study for a test.
a. Has b. have to c. have
- 15. You _____ go out if you're feeling tired.
a. Can't b. shouldn't c. should
- 16. The notice in the park says you _____ swim in the lake in summer.
a. Have to b. can c. should
- 17. You _____ get a visa if you want to travel to some countries.
a. Should b. have to c. can
- 18. If you need to get a book out of the library, you _____ leave your university ID.
a. Can b. should c. don't have to
- 19. You _____ be an adult to get married.
a. Have to b. can c. should
- 20. Peter is taking the TOEFL exam next week. So he _____ study a lot to pass it.
a. Can't b. have to c. has to

5. Complete the sentences with the correct form of the adjectives (comparative, superlative, etc.) (10 marks)

- k. It's much _____ (wet) in the north of the country than in the south.
- l. Steven is _____ (relaxed) person I know.
- m. Annie is much _____ (happy) now than she was.
- n. Soraya is as _____ (good) at her job as Anita is.
- o. Carlos is much _____ (energetic) than I am.
- p. That's _____ (bad) meal I've ever had here.
- q. This report isn't as _____ (interesting) as the last one.
- r. Is this _____ (good) hotel you could find?
- s. I can't feel my feet! Today I'm _____ (tired) than yesterday.
- t. Vicky is _____ (careful) girl I've ever met

4. SURVEY

APPENDIX D

Satisfaction Survey – Quantitative Research

ESCUELA SUPERIOR POLITECNICA DEL LITORAL

GUAYAQUIL – ECUADOR

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Jaime Roberto Pizarro Velasteguí, Escuela Superior Politécnica del Litoral

THE FLIPPED CLASSROOM MODEL ON B1 ENGLISH LEVEL (CEFR) STUDENTS' ACHIEVEMENT IN THE LEARNING OF GRAMMAR AS A FOREIGN LANGUAGE

1. ¿Cuál es su preferencia instruccional entre una clase tradicional y el Flipped Classroom Approach?

- Prefiero fuertemente la clase tradicional
- Prefiero la clase tradicional
- Neutral
- Prefiero Flipped Classroom Approach
- Prefiero fuertemente Flipped Classroom Approach

¿Cuál es la razón de su preferencia?

2. ¿Con qué frecuencia usted realiza la asignación de trabajo autónomo previo : Lecturas, videos, audios, ppp y actividades incluidas?

- Todas las semanas
- La mayoría de las semanas (no lo hice un par de veces)
- Aproximadamente la mitad de las veces
- Menos de la mitad de las veces
- Muy rara vez hice la actividad asignada

3. En su criterio, ¿Cuál sería el nivel de dificultad de los trabajos autónomos asignados?

- Muy difícil
- Difícil
- Neutral
- Fácil
- Muy fácil

4. ¿Considera usted que el trabajo cooperativo (grupal en clase) le ha ayudado a mejorar sus habilidades con el idioma?

- Fuertemente en desacuerdo
- En desacuerdo
- Neutral
- De acuerdo
- Fuertemente de acuerdo

5. ¿Considera usted que la retroalimentación por parte de su profesor ha sido efectiva en la nueva metodología aplicada de Flipped Classroom Approach?

- Fuertemente en desacuerdo
- En desacuerdo
- Neutral
- De acuerdo
- Fuertemente de acuerdo

6. ¿Cuán útil considera esta metodología para el aprendizaje de la gramática Inglesa?

- Fuertemente en desacuerdo
- En desacuerdo
- Neutral
- De acuerdo
- Fuertemente de acuerdo