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ENGLISH LANGUAGE TEACHING PROGRAM

IMPACT OF FLIPPED CLASSROOM MODEL ON EFL LEARNERS'

GRAMMAR ACHIEVEMENT:

NOT ONLY INVERSION, BUT ALSO INTEGRATION
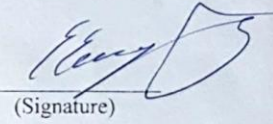
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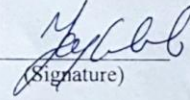(Advisor)   (Signature)

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BY

CEM BULUT

DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT

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Abstract

Flipped classroom (FC) method has gained popularity, specifically in higher education, in recent years with the idea that it is possible to use the time spent in classrooms more effectively by simply flipping the passive lecturing parts with the homework exercises. Accordingly, the present study aims to investigate whether using FC method is more effective than the non-flipped method in teaching grammar to English as a Foreign Language (EFL) learners.

An experimental research was conducted with the participants of two intact classes having A2 level English courses at the second grade (N=39 in total) in a vocational school in Kocaeli, Turkey. Results from the post-test indicated that the experimental group achieved higher scores than the non-flipped group did. Additionally, independent samples t-test analysis in SPSS revealed that the difference between two groups was statistically significant. On the other hand, even if the factors that lie beneath this improvement are likely to be attributed to the teaching method, which is also supported by the answers given to the FC perception survey and interview, participants in both groups developed statistically significant positive attitudes towards learning grammar regardless of the method used. In that sense, this result was considered to be related to the level of the course, which was quite low and simple. In sum, the present study provides additional findings to the literature for FC methodology from a different perspective.

Özet

Ters-yüz sınıf (TYS) metodu son zamanlarda, özellikle yüksek öğretimde, sınıfta geçirilen zamanın, basitçe pasif öğretim yapılan bölümlerini ev ödevleri ile yer değiştirerek daha etkin bir şekilde kullanılmasının mümkün olduğu fikriyle popülarite kazanmıştır. Buna göre, bu çalışma TYS metodunun EFL öğrencilerine gramer öğretmede geleneksel metottan daha etkili olup olmadığını araştırmayı hedeflemektedir. Kocaeli Türkiye'deki bir meslek yüksekokulunda, ikinci sınıfta, A2 seviyesinde İngilizce dersleri alan iki ayrı sınıfın tüm öğrencileri ile (Toplam sayı 39) deneysel bir araştırma yapılmıştır.

Son-testin sonuçları deney grubunun daha yüksek puanlara ulaştığını gösteriyor. Buna ek olarak, SPSS bağımsız örneklemler t-testi de bu farkın istatistiksel olarak önemli olduğunu belirtmektedir. Diğer taraftan, bu iyileşmenin altında yatan sebepleri öğretim metoduna bağlasak bile ki, TYS algı anketi ve görüşmeler de bunu destekliyor, her iki grubun katılımcıları da, hangi metodun kullanıldığına bakılmaksızın, dil bilgisi öğrenmeye karşı istatistiksel olarak önemli oranda olumlu algı geliştirdi. Bu bağlamda, bu sonucun oldukça düşük ve basit olan ders seviyesiyle ilişkili olduğu düşünülmektedir.

Özetle, bu çalışma literatüre TYS metodolojisi için farklı açıdan bulgular sağlamaktadır.

Anahtar kelimeler: ters-yüz sınıf (TYS), öğrenme yönetim sistemi, bir yabancı dil olarak İngilizce

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LIST OF ABBREVIATIONS

FC   Flipped Classroom

LMS   Learning Management System

EFL   English as a Foreign Language

CALL   Computer Assisted Language Learning

SRT   Self-Regulation Theory

CHAPTER I

Introduction

Inspired by the broad integration of the information technologies into social life, education field has recently equipped with several technology-based systems and applications. Concept of Web 2.0, in particular, has rapidly developed in the last decade, which is widely employed by both educators and publishing companies in order to enhance the quality and the effectiveness of teaching. Communication, information, material transfer and learner tracking, regardless of place and time, have facilitated the learning processes and provided the instructors with the chance of using their time more efficiently. In this regard, although technology-related supplementary materials accompanying the course books such as audio/video CDs have relatively been of help to the teachers, the use of Learning Management Systems (LMS) from the early 1990s has brought about a new point of view into both teaching and learning. Development of the mobile technologies has also contributed to the popularity of LMSs in terms of offering applications for the mobile devices and enabled the learners and teachers to stay connected at all times. Accordingly, a new teaching model, which highly benefits from both content development applications and Web 2.0 platforms, notably LMSs, emerged questioning basically why to include monologue teacher talks and simple classroom activities during the class-time instead of assigning them as home study with the help of technology. In other words, in the cases of direct lecturing without interaction for a particular part of a class, replacing them with more

teacher help and extra interactional exercises would meet the needs of the learners more satisfactorily (Crouch & Mazur, 2001; Mazur, 2009). Although it requires, to some extent, technological knowledge to design such courses, which is beyond the scope of this study, large amount of user-friendly creative tools put upon the education market has made it possible for many instructors to take action. Moreover, the widespread use of social media formed a basis for communication, collaboration and sharing of the materials among the instructors and offered more opportunities than ever to adopt pre-designed course contents.

Specifically, in the field of Teaching English as a Foreign Language (TEFL), computer technologies have widely been integrated into the preparation process of supplementary teaching materials for the course books such as audio/video CDs, interactive whiteboard software and i-books. Not surprisingly, that courseware enables teachers to lead their classes more effectively. However, it should be noted that they are designed to be used in the classroom environment. At this point, development of the LMS has added a new dimension to the concept of education in the sense that learning taking place out of the classroom could be controllable and trackable. In other words, LMSs pave the way to integrate the learning process into the real life itself and track the learners' improvements as well as their detailed logs reporting any action they take within the course items.

On the other hand, it is a known fact that most of the course books used in TEFL has nearly the same design and sequence. For example, they follow a pattern

starting with unknown words, a reading passage and its questions, listening activities, grammar structure and related exercises, lastly, speaking and writing sections. From this perspective, in-class activities turn into a predictable set of routine activities for the students. In the context of the efforts for higher interaction and motivation, it is clear that decreasing the number of such monotonous activities could be quite helpful for more fruitful teaching. To this end, the present study employed the teaching method called "flipped classroom" (FC) by focusing on only the grammar parts of a course book. In this process, the grammar sections were given out-of-the-class with the help of technology in a way that the teacher recorded his related lectures and delivered them online before the classes. As a result, students could go through the grammar lectures at their own paces and had a chance to do the exercises that were normally assigned as homework within the class time in complete interaction with the instructor.

1.1. Purpose of the Study

The researcher has been teaching English to EFL learners as well as administering the learning management system of the same institution for 6 years. His research interests include E-learning and, in particular, Computer Assisted Language Learning (CALL). Accordingly, he studies on integrating technology into his courses actively in terms of material development and learner tracking. In that sense, limited class hours for the language lessons, students' incompetency at grammar skills and their busy schedules have caused an urgent need for a more flexible, time saving and

effective teaching environment in his institution. Having this in mind, the researcher employed a teaching method called Flipped Classroom in order to meet those needs, and he designed online courses to see the ways in which this new model facilitated the teaching and learning processes.

The present study specifically aims to flip the grammar lecturing parts which normally take place in the classroom with the grammar exercises assigned as homework. In doing so, it is possible to assist the learners with ample amount of teacher help and interaction in homework phase which is more challenging than listening to the lectures, while giving students the chance to go through the passive lecturing parts out of the school. On the other hand, delivering both the grammar lectures, recorded as videos, and the follow-up questions via the LMS as home assignment enable teachers to track all student actions in detail (see Appendix A).

The purpose of the present study is also to take the learner differences into consideration, and it provides a wide range of learning experiences. In this regard, online classes give learners the opportunity to study at their own paces (e.g., pausing, stopping or rewinding the videos), as well as the flexibility to reach the information at any time they prefer. Considering the ideas mentioned above, the researcher conducted an experimental research, on the basis of the cognitive load theory, active learning theory, self-determination theory and self-regulated learning theory as the theoretical frameworks, to show the advantages of the flipped classroom method, if any, in grammar teaching.

1.2. Research questions

Following research questions were posed for the present study:

1. Does flipped classroom model have a positive impact on EFL learners' grammar achievement?

2. How do the students in a flipped grammar class perceive flipped methodology?

3. How does flipped classroom model affect the students' attitudes towards their own grammar skills?

Based on the questions above, following hypotheses were proposed:

1. Flipped classroom has a positive impact on EFL learners' grammar achievement.

2. Students in the flipped grammar class have positive perceptions on flipped methodology.

3. Students in the flipped class have more positive attitudes than the students in the non-flipped class towards their own grammar skills.

1.3. Significance of the Study

The current study will contribute to the field by investigating the extent to which the FC model is effective in grammar teaching to the EFL learners. It will also shed light on the advantages of using e-learning tools and LMSs for developing materials and managing online courses. On the other hand, the present study serves as a model for the novice instructors for how and what to flip in the case that they intent

to adopt FC strategy and simplifies the process of designing their own. Moreover, with the help of technology integration, gaining extra time by excluding monologue teacher talks from the class time and, using it to do more practice under instructors' watch instead could make the current study significant in terms of drawing attention to a different method for an effective grammar teaching.

1.4. Definitions of Key Terms

Flipped Classroom: Flipped classroom is an approach in which the school work and homework are switched in order to deliver the direct instruction individually at home, while creating an interactive and dynamic environment for the learners to put what they have learnt into practice with the guidance of instructors in the classroom.

Learning Management System (LMS): LMS is a user interface which enables the instructors to create, design, manage and deliver the basic components of a course in the form of a webpage.

Asynchronous Learning: It refers to an online teaching technique in which non-real time communication systems are used. Learners are not bound to a specific place or time.

E-Learning: It refers to a course, training or program which is completely delivered online.

English as a Foreign Language (EFL): It refers to a context in which English is taught to learners whose main language is not English and, it is neither the official nor the main language in the country.

1.5. Basic Assumptions

In the current study, grammar tests were used in order to assess the achievement of the participants on the basis of the experimental research principles. Accordingly, it is assumed that all the participants, including the learners to whom pre and post-tests were administered for the purpose of piloting, answered the questions in the tests honestly. In addition, the items of the questionnaires were also assumed to be responded in a sincere way, since they form a significant part of the present study with regard to the participants' attitudes towards the skill focused and the treatment. On the other side, it is important to note that the present study is heavily based on computer technologies, which, in turn, requires the assumption that all participants in the experimental group have familiarity with basic computer skills such as browsing on the net and managing a web account. Finally, in the context of the asynchronous online learning, it is clear that there is no way to assure the commitment of the learners. In other words, receiving a certain part of the class in the form of online videos, it should also be assumed that the participants of the experimental group watch those videos purposefully and, answer the follow-up questions on their own.

1.6. Organization of the Study

The current research consists of 5 chapters. The first chapter presents an introduction to the study including the purpose, research questions, significance, information about the terms used and basic assumptions, as well as an explanation of

the overall organization. This chapter, in particular, aims to provide basic information for the topic focused and the concept of flipped classroom.

The second chapter has a review of the literature for the flipped classroom model concerning its history, use in various disciplines as well as ELT, its relations to a number of theories and development in the course of time.

In chapter three, methodological design of the study is presented in detail under the subheadings of (1) participants, (2) instruments, (3) procedures and (4) data analysis.

The fourth chapter, following the data analysis process, gives information about the results in the form of tables from SPSS.

Finally, the fifth chapter discusses the findings with regard to the previous studies and concludes the study with implications, limitations and suggestions for further studies.

CHAPTER II

Review of Literature

2.1. Technology and Language Teaching

Rapidly developing information technology has offered more opportunities than ever for people, such as simplifying and accelerating diverse tasks by integrating computers into their lives. People, especially the younger generations, known as "the digital native" (Prensky, 2001), have acquired high familiarity with computers also in the education field in the course of time. Thus, being subject to an increase in popularity since the most of the learning management systems, together with e-learning software and authoring tools became more user-friendly and free of charge; technologically enhanced language teaching have been increasingly preferable among the language teachers recently. In particular, the novice ones, owing to their tendency to use technology, achieved the ability to create, design and publish their e-courses with average computer skills.

Various learning designs are possible to be adopted when it comes to teaching English as a Foreign Language (EFL). However, as to best serve the needs for learner differences, which is one of the most challenging issues that the language teachers face, it is important to note that the instructors are required to give extra effort such as spending extra time, giving additional tasks and resources. At this point, the use of information technologies in language learning provided an opportunity for supplying the learners with ample amount of resources and facilitating the evaluation and the

feedback processes for the teachers. Starting with the integration of e-learning materials into the conventional language classrooms, the arrival of Internet has also increased the share of technology in language learning and expanded its use from primary to higher education. Computer-assisted language labs, independent learning centers and learning management systems have emerged in the course of time and enabled teachers to reach/deliver a large number of resources.

In the beginning, CALL, Computer-Assisted Language Learning, has evolved into TELL, Technology-Enhanced Language Learning, with the additional equipment used such as smart boards, instant polling systems, clickers and IP cams which have facilitated visuals, group work and communication to a great extent regardless of distance. After these innovations, rapidly developing technology lead the educational researchers to study on MALL, Mobile-Assisted Language Learning, considering the wide use of smartphones, PDAs and tablet PCs by the learners at any age. However, each of these approaches in question has nothing to do with the teaching methodology except including technological devices in the process as a means of resource or facilitator. In this regard, flipped classroom method brought a new insight into the adoption of technology.

2.2. History of Flipped Classroom

In 2007, the primacy of technology inspired two chemistry teachers, Jonathan Bergman and Aeron Sams with the idea that it is possible to record PowerPoint slides along with their voice using a screen capturing software to deliver them before the

classes. The purpose of this strategy, which was named as *flipped classroom* thereafter, was to save more time for production and interaction-based tasks to be carried out in the classroom with teacher help (Bergmann & Sams, 2012). In that case, homework, which is given in non-flipped classes so as to reinforce what is learnt in the classroom beforehand, is possible to be categorized under the tasks that require higher order skills and it could be replaced with the direct instruction. However, this new method has its roots back to 1990s, started by a physics professor, Eric Mazur, who designed his teaching strategy, *peer instruction*, on assigning the students with readings and handy notes on the upcoming lectures as home study, while doing discussions and homework in class hours (Mazur, 1997). The idea that lies beneath this approach was to give students a chance to engage in active study, rather than listening to the lectures passively in the classes. Next, Lage, Platt & Treglia (2000), in their *inverted classroom* method, moved one step beyond by offering students audio and/or videotaped lectures for lab or home use and they reserved the class hours for discussions on the lectures pre-covered out of the classroom. Conceptually, flipped classroom, which is the broadly accepted term for the strategy at present, has gained more popularity recently and several studies presenting its keystones were written (Bergmann & Sams, 2012; Fulton, 2012; Cockrum, 2014). Moreover, a plethora of sources are available on the web (Flipped Learning Network, 2017) as well as online organizations introducing flipped instruction strategy by providing tips for how to flip your classrooms, which also encourage novice teachers regardless of their technological knowledge.

2.3. What is Flipped Classroom?

Bergmann & Sams (2012) state that flipping your classroom is to assign what you normally perform in your traditional classroom for home, while doing the homework together with your students in the classroom. In that sense, flipped classroom is an approach in which the students are driven into a highly active in-class learning environment (Berrett, 2012; Milman, 2012; Strayer, 2012). Considering the significance of student-centered classes as the key to improve students' learning performances (Andrews, Leonard, Colgrove, & Kalinowski, 2011; Kamarainen, et al., 2013; Agbatogun, 2014), flipped classroom has recently been receiving attention with regard to its effectiveness in engaging students in active learning (Forsey, Low, & Glance, 2013). While Hamdan, McKnight, McKnight, & Arfstrom (2013) illustrated the four pillars of the F-L-I-P approach as; Flexible environment, Learning culture, Intentional content, and Professional educator, flipped instruction model, in general, consists of two basic components: (1) technology-based out-of-class personal instruction; (2) interaction-based in-class group activities (Bishop & Verleger, 2013). Namely, students receive the instruction with the help of pre-recorded videos and/or pre-designed web pages by the instructors prior to the classes and, put what they learnt into practice collaboratively in the classroom afterwards (Baker, 2000; Lage, Platt, & Treglia, 2000).

On the other hand, some scholars assert that almost all teachers already expect their students to prepare before the classes, which questions the validity of FC as a new

method. Note, however, that the purpose of such preparation is merely to facilitate the performance of the teacher for better instruction in the classroom, while the preparation itself is attributed as the core instruction in FC method (Strayer, 2012; Davies, Dean, & Ball, 2013). In flipped instruction concept, the focus is on enabling the students to step out of their passive roles in the classrooms by excluding the monologue lecture parts to be delivered outside the class time (Mazur, 2009). In doing so, (a) it is possible for the instructors to take learner differences into consideration by giving the students the chance to pause, replay or go fast forward while watching the videos (b) students concentrate on the questions or the tasks at hand more effectively under the guidance of the teacher in the classroom, which, in turn, (c) leads them to engage in higher-order thinking skills (Correa, 2015).

Flipped instruction mode redefines the teachers' roles as the facilitator rather than the direct source of instruction throughout the classes, by which the students deepen their understandings on the key concepts with the help of discussions. Hence, class hours offer the potential for discussion and clarification for the points of confusion, as well as the interaction between the teacher and students. From the viewpoint of instruction modes, two arguments have come under the spotlight concerning to which delivery mode FC belongs. In order to better explain the phenomena, the different modes of delivery are described in the next section.

2.3.1. Mode of delivery. Undoubtedly, technological advancements have a significant role on flipping the classrooms by providing online deliverable materials

for the learners regardless of time and place. Yet, the case is not merely the technology, but it is the matter of pedagogy. Accordingly, different learning practices, known as mode of delivery, has emerged based on the way of instruction and to what extent they adopt technology:

2.3.1.1. Traditional courses. All instruction is given face-to-face in the classroom without or with technological enhancements such as smartboard, projector, sound system, interactive whiteboard software or clickers. Following the teaching process, homework is assigned so as to enable the learners to practice the knowledge presented.

2.3.1.2. Blended courses. Around 50 % or less of the instruction and activities are delivered online. There is no such regulation concerning whether the instruction parts or the activities should be given online. Teachers are the only decision-makers and the designers of the courses.

2.3.1.3. Online courses. All of the instruction and activities are delivered online. There is no face-to-face instruction and interaction in a scheduled classroom environment.

Considering the FC as a new sort of method, there are two arguments positioning it under varied modes. Some researchers (Strayer, 2012; Hung, 2015; Evseeva & Solozhenko, 2015) categorize FC under blended learning design, in which the lectures as well as the activities are, similarly, moved outside the classroom. Abeysekera & Dawson (2015) proposes that FC is a specific approach to blended

learning model, which systematically migrates either the instruction or the activities to the online platform.

On the contrary, FC is also addressed under traditional courses category by some researchers such as Berrett (2012) stating that "As its name suggests, flipping describes the inversion of expectations in the traditional lectures" (p. 36). Correa (2015) also place FC in technologically enhanced traditional courses category in her study, stating that there is a minor change in the order of the instruction and homework, since the whole activities requiring face-to-face interaction are still given in the classroom. In addition to this, they suggest that the key difference is to minimize only the monologue teacher talks, namely the lectures, during the class time, although there is no such concern in blended courses. That is to say, both the instruction and the follow-up activities could be given online in blended learning. In that case, considering the modes of delivery, the opposing view is likely to embrace the traditional courses under two subheadings: (1) technologically enhanced traditional courses, (2) technologically enhanced reversed traditional courses, which is known as the FC.

2.3.2. Advantages and disadvantages of flipped classroom. FC has multiple advantages most of which help the instructors facilitate their teaching practices pedagogically. First of all, individual instruction with the help of videos, websites or readings enables the learners to proceed at their own paces. In this way, they have the chance to go slower when they have difficulty with something or vice versa.

Another advantage FC provides is the development of higher order skills in the process of learning. Revised Bloom's taxonomy of educational objectives (Anderson, Krathwohl & Bloom, 2001) orders the levels of cognitive thinking from simple to complex. Similarly, the steps followed in FC strategy conform to this reordering when reversing the challenging homework phase with the simple instruction part (Correa, 2015). Figure 1 demonstrates the order of skills when engaged in the learning process in traditional and flipped classrooms.

Figure 1 Revised Bloom's Taxonomy of Educational Objectives
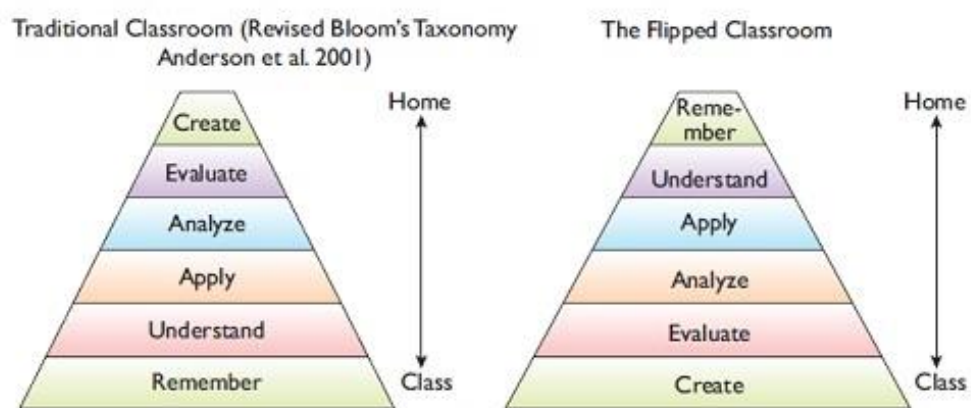
Accordingly, in traditionally instructed classrooms, students are exposed to direct teaching in the class time, in which they perform lower skills such as remembering and understanding, while they have to cope with higher order thinking skills at home such as applying, analyzing, evaluating and creating for the homework assigned. In contrast, FC strategy inverts these stages based on their level of difficulty for the purpose of facilitating the tasks that require higher order thinking skills under the guidance of teachers in the classroom, while delivering basic knowledge that could be managed through lower order thinking skills with the help of video lectures at home.

As a result, Anderson, Krathwohl & Bloom (2001) suggest that it is possible for students to master providing the appropriate opportunities to learn with regard to their cognitive structure. Furthermore, considering the major role of self-learning skills required in FC philosophy, students should be provided with flipped materials for home and interactive activities for the classroom, which are carefully designed with a balance of motivational, cognitive, behavioral, and contextual factors (Lord, Prince, Stefanou, Stolk, & Chen, 2012).

One important advantage on the part of the learners is the opportunity to choose when and where to learn in FC model. That is to say, it supplies the students with a flexible environment, which, in turn, contributes positively to the learner motivation and improves the efficiency of learning. As an example, students can watch the videos assigned online with their mobile phones or tablet PCs anytime and anywhere that they would like to thanks to the advanced technology at present. In the same vein, transparency of instruction, by making the videos or similar materials available online, paves the way for the parental involvement during the learning process. In other words, parents can have the opportunity to involve into their children's learning

On the other hand, FC also has a number of disadvantages owing to the fact that it requires, for the most part, self-responsibility for the learners to follow the videos adequately and on time. Namely, students not paying attention to the videos assigned could result in serious issues since the major theory is built upon the individual out-of-class instruction. In such a case, students will not be able to make use of in-class

discussions and group activities.

Another disadvantage is that some subjects are inappropriate to be taught in the form of online videos. Accordingly, students who are used to study at their own paces and in their preferred time before the classroom sessions could have difficulty at concentrating on lectures. Therefore, it is essential for the instructors to focus on improving their students' learning skills either they teach in a FC or non-flipped classroom.

One of the common concerns about FC strategy is the need for technological knowledge that the instructors should have. Although many e-learning authoring tools are available on the Internet, several teachers avoid using FC model due to a few reasons such as the schools with insufficient technological resources to produce videos, students lacking devices to go online and watch the videos or the teachers having insufficient time or technological knowledge to develop necessary materials.

2.4. Use of Flipped Classroom in Language Teaching

Over the last decade, FC, along with the advent of technology, has contributed to diverse disciplines in education, including teaching languages. Given that English, which is the lingua franca, has been receiving attention as a necessity in cross-national communication all over the world in the status quo, English Language Teaching (ELT) has also been influenced by the FC methodology. As a result, various researchers (Kukulska-Hulme, 2009; Saran & Seferoğlu, 2010; Agbatogun, 2014; Correa, 2015; Evseeva & Solozhenko, 2015; Sung, 2015; Hsieh,, Wu, & Marek, 2016; Mehring, 2016)

have studied the approach in EFL context with regard to various aspects such as achievement, engagement, performance or student and teacher perceptions. Furthermore, considering the skill-based studies; reading (Huang & Hong, 2015), speaking (Hung, 2015), writing (Farah, 2014) and listening (Roth & Suppasetseree, 2016) skills have been investigated for the purpose of providing detailed new data in terms of the effectiveness of FC. However, the literature still lacks empirical evidence in order to evaluate the efficiency of FC implementation into ELT. In that sense, the present study aims to bridge the gap in the literature in terms of teaching grammar in an EFL classroom by employing FC strategy.

Language learning has its unique principles, apart from other disciplines, accepted by a vast range of scholars, one of which is the interaction and negotiation for meaning (Interaction Hypothesis, (Long, 1996)) constituting the basis for an effective learning. In the context of the encouragement for the use of communicative language teaching (CLT) method, the majority of the course books in the market are based on giving a large amount of input and challenging the learners to produce output in discussions with peers and/or the instructors, via their rich content in four skills. From this perspective, some researchers argue that EFL classrooms are already in the form of an FC concept considering; e.g., the reading passages or the target vocabulary assigned as homework prior to the in-class activities. In other words, in many EFL classes, teachers ask the students to prepare for the upcoming classes by reading the texts that will be covered and, they perform the related activities, discuss the key points, and

lastly make inferences in the class time. At first appearance, although the process is likely to draw an FC frame, it is quite different from what is targeted indeed. In FC teaching philosophy, it is the main idea to decrease the amount of teacher talk, that is, to exclude the direct instruction parts (monologue speeches by the teachers) for the purpose of providing the students with an individual learning environment in which they are able to proceed at their own paces (Bergmann & Sams, 2012). Furthermore, assigning reading passages for home conflicts with the essence of FC since the reading skill is, theoretically, process-oriented, in which the teacher guidance has a significant role (Webb & Doman, 2016). Namely, the strategies for reading are best suited to be given as a video lecture in order to better serve for the learners' needs, while readings are covered in the classroom. In this regard, especially in EFL, even the instructions for how to do an assignment, information about the exams, description of the skills required for a specific task, or explicit grammar teaching, as in the current study, are appropriate to be delivered online in the form of videos or web pages. In doing so, through the extra time gained with the help of videos, more interaction can take place in the classroom so as to enable the learners to reach a better understanding of the topic in question, as well as to use and hear the target language more. Additionally, the cutting-edge technology in education field has enabled the instructors to create online asynchronous discussion groups (synchronous discussions are also available, but they are beyond the scope of this study) on a wide variety of learning management systems. In this way, students are able to engage in meaningful interactions in target language

independent of place and time and, they attend the classes well-prepared for the discussion points.

2.5. Theoretical Framework of the Study

Based on the social constructivist model, FC is in relation to a number of theories in the literature. Following titles will describe those theories and touch upon the relevancies concordantly.

2.5.1. Cognitive load theory. Besides the fact that technical developments have facilitated the adoption of FC approach, teachers have different motives to employ FC method such as the advantage of addressing learners from different expertise. One of the most important issues that the instructors need to take into consideration is the individual differences in the process of learning (Clark, Nguyen, & Sweller, 2005). Namely, a certain type of instruction which improves a learner's ability might impair the other learner's as each individual acquire within different durations. Therefore, the use of video lectures in FC enables the learners to move along at their own paces by pausing, rewinding or forwarding as many times as they like. In that sense, the potential in question is in accordance with the *cognitive load theory* (Sweller, 1988), suggesting that learning best occurs once the conditions comply with the learner's cognitive architecture. As a result, with the help of FC strategy, it is not surprising that considering the individual differences increases the motivation of the learners in such a way that they are more likely to feel related to the subject matter and encouraged to engage in the activities (Abeysekera & Dawson,

2015).

2.5.2. Active learning theory. As defined by the educator and philosopher John Dewey (1916), "learning means something which the individual does when he studies. It is an active, personally conducted affair" (p. 390). Conversely, *active learning*, which is used quite common in the literature, has no precise definition agreed upon by the scholars, except the one that proposed by Bonwell & Eison (1996): active learning "involves students in doing things and thinking about the things they are doing". However, since the term is related to a learning theory and learning is a process, which is composed of various steps to take, current definition is likely to be insufficient at demonstrating the actual meaning. For this reason, approaching the active learning concept considering the following general characteristics (Bonwell & Eison, 1996) would be more explanatory in terms of comprehending the theory in a deeper way.

In active learning:

- Learners involve in the learning process more than listening passively

- Instructors focus more on developing learners' skills instead of merely transmitting information

- Learners mostly engage into the activities fostering their higher-order thinking skills such as analyzing, synthesizing and evaluation, besides lower skills such as reading and writing.

- Students are encouraged to explore their own potential and attitudes

These characteristics are the constitutive items for the teachers at choosing activities,

too, such as pair work, group discussions, collaborative problem solving, structured student debates, and games, in which the students' thinking skills are possible to be activated rather than staying in a passive receptive mode. To this end, classrooms turn into highly active learning environments facilitating the comprehension of the knowledge and increasing its retention. Furthermore, Prince (2004), as one of the researchers who strengthened the place of active learning in the literature, stated in his study that "active learning is not the cure for all educational problems. However, there is broad support for the elements of active learning, most commonly discussed in the educational literature (p. 229)." In that vein, FC is also discussed in the recent literature, consisting of similar instruments and instruction techniques in line with active learning. In brief, FC model, which encourages the students to be active learners in the classroom, is quite consistent with the principles of active learning theory.

2.5.3. Self-determination theory. Previous research propose that learners feel more competent, which leads to higher motivation, when they participate in the activities instead of receiving instruction passively (Gauci, Dantas, Williams, & Kemm, 2009; Lord, Prince, Stefanou, Stolk, & Chen, 2012; Thaman, Dhillon, Saggar, Gupta, & Kaur, 2013). Considering the motivation factor, the three cognitive needs of *self-determination theory* (Deci & Ryan, 1985), which are competence, autonomy and relatedness, are likely to be met, for the most part, in FC approach (Abeysekera & Dawson, 2015). That is to say, learners, in FC method, have the control of the instruction environment out of the classroom, in which they are able to concentrate on

the topics more deeply. Such an autonomous structure also makes them feel both more relaxed at choosing the most appropriate time for them to study and, more competent at the given theoretical knowledge. Moreover, the relatedness to a social group, who are the classmates in this case that the learners could engage in discussions with, satisfies the needs of the learners more than having a passive role in a direct instruction classroom.

2.5.4. Self-regulation theory. People constantly learn for various purposes beginning from the birth besides the academic concerns. Therefore, such an indispensable process, having a major role on our lives, requires the development of lifelong learning skills. In this regard, learner differences have also been subject to another theory as the educators have strived to overcome this issue since the beginning of the formal schooling. Zimmerman (2002) explains the puzzle with the lack of self-regulation and, defines *self-regulation theory* (SRT) as: "it is the self-directed process by which learners transform their mental abilities into academic skills" (p. 64) (see Figure 2 for SRT scheme).

Figure 2 Phases and sub processes of SRT (Zimmerman, 2002).
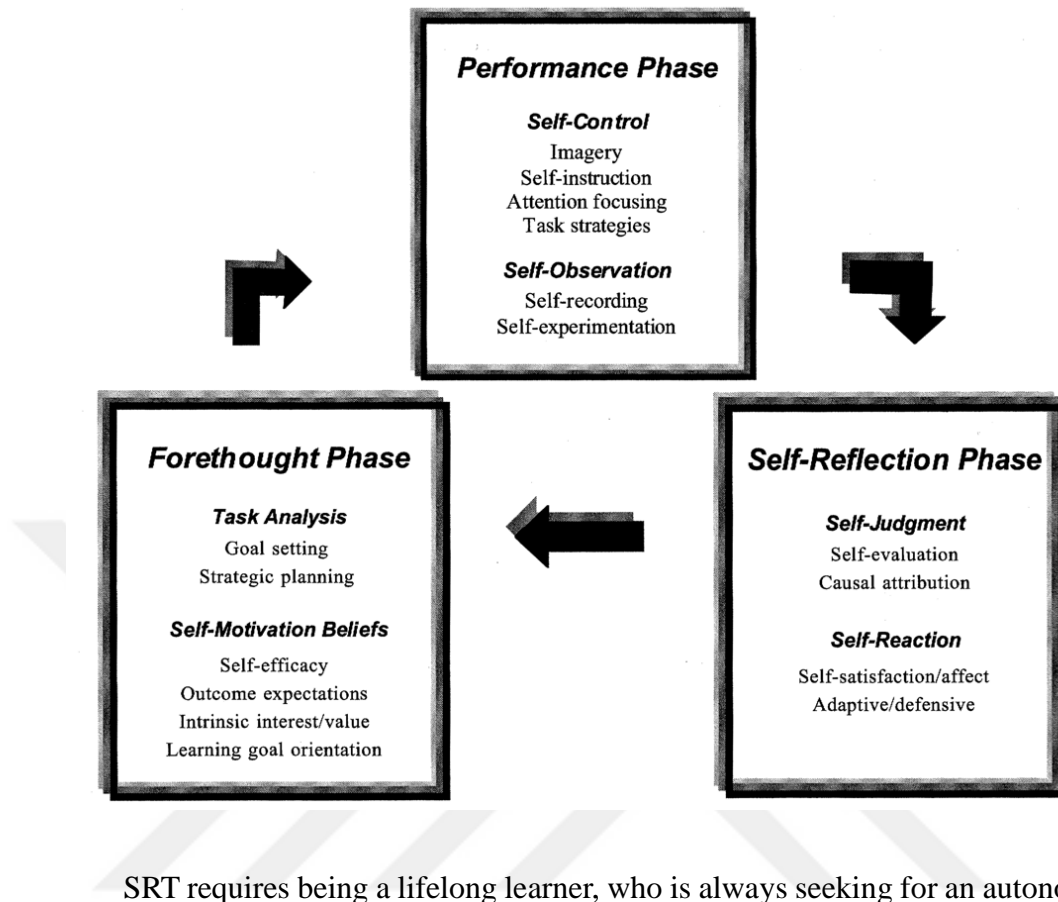
SRT requires being a lifelong learner, who is always seeking for an autonomous environment, being highly self-motivated, and able to manage own learning process (Lord, Prince, Stefanou, Stolk, & Chen, 2012). Learners self-regulating themselves should; set specific goals, develop appropriate strategies to achieve these goals, monitor their performances in the process, use the time effectively, evaluate the strategy adopted, analyze the results and modify the implementation for further situations if needed (Zimmerman, 2002). Considering these key elements, FC approach and SRT have much in common in terms of the opportunity enabling students to control their learning performances (Mason & Cook, 2013; Lai & Hwang, 2016). Potentially, student-centered classrooms have recently been encouraging students to be self-learners due to its advantages at high learning outcomes. Even the STEM (science,

technology, engineering, mathematics) courses, known as teacher centered, are tend to employ more learner-based classrooms and, the idea of FC first came under the spotlight at Harvard University in the early 1990s, by a physics professor Eric Mazur, under the name of *peer instruction* (Mazur, 1997). With the contributions of the developing technology in the course of time, and evolving with different names, FC methodology has facilitated the performance monitoring, efficient time use and self-evaluation phases of SRT. As a result, both FC and the SRT have mediated the learners to achieve the higher-order thinking skills and self-regulate themselves for fostering ultimate learning.

2.6. Summary

In summary, the studies mentioned in the reviewed literature examined the (1) relationship of FC with a few theories, (2) analysis of FC in pedagogical perspective, (3) effectiveness of FC in various disciplines on the basis of learner achievements or attitudes. Although the use of FC methodology in ELT was also addressed in a number of studies above, the literature still lacks empirical evidence for teaching grammar skills with the help of FC especially in a low proficiency level. For this purpose, the present study aims to fill the gap by investigating the effect of FC on grammar achievement of the EFL learners in low levels, as well as focusing on their perceptions on the method in question.

The present chapter provided a historical overview of FC method and illustrated how this model evolved in the course of time under different names. Furthermore, a

detailed description for the current and widely accepted version of the method was also included in order to draw the frame of the present study adequately. To sum up, the following chapter presents the steps of a conducted study addressing the gap in the literature.

CHAPTER III

Methodology

3.1. Introduction

The aim of the present study is to investigate the effects of flipped instruction strategy by focusing on the grammar teaching in two intact EFL learner groups in a state vocational school in Kocaeli, Turkey. To this end, quasi-experimental research design is employed and a number of preparatory studies have been performed such as recording instructional videos, preparing corresponding in-class follow-up exercises and designing the learning management system of the school accordingly. In the meantime, data collection instruments were developed, piloted, adapted and adopted considering the needs of the study and the syllabus of the course.

At the beginning of the semester, the researcher took responsibility of two classes (both are same branches), which were formed on the basis of the administrative procedures, as the participants. As for the data collection procedures (see Table 1), two grammar exams (pre-test/post-test) for testing the achievement, a questionnaire related to the students' attitudes towards their own grammar skills and another one for the perceptions of the students on the efficiency of the teaching model were administered. In addition, a semi-structured focus group interview with the participants from the experimental group was held in order to strengthen the qualitative data collected for the purpose of determining the effectiveness of the adopted teaching method. Treatment period lasted for 7 weeks and all quantitative

data were analyzed using SPSS at the end of the study. To sum up, this chapter will clarify the overall process in detail under the headings of; setting and participants, data collection instruments, instructional treatment, procedures and data analysis.

Table 1 Design of the Study

Group	Grammar Perception Survey	Pretest	Posttest	Grammar Perception Survey	FC Perception Survey	S.-structured Focus Group Interview
2 Intact Classes Exp. Group (N=19) Cont. Group (N=20)	A Likert scale survey for both groups Adopted from Webb & Doman (2016)	Fill in the blanks type covers the units before treatment	Fill in the blanks type covers the units during treatment	A Likert scale survey for both groups Adopted from Webb & Doman (2016)	Only for Exp. group Adapted from Enfield (2013)	Only for Exp. Group. 5 Students were chosen randomly

3.2. Research Questions

Answers to the following research questions were investigated in the current study:

1. Does flipped classroom model have a positive impact on EFL learners' grammar achievement?

2. How do the students in a flipped grammar class perceive flipped methodology?

3. How does flipped classroom model affect the students' attitudes towards their own grammar skills?

Based on the questions above, following hypotheses were proposed:

1. Flipped classroom has a positive impact on EFL learners' grammar achievement.

2. Students in the flipped grammar class have positive perceptions on flipped methodology.

3. Students in the flipped class have more positive attitudes than the students in the non-flipped class towards their own grammar skills.

3.3. Setting and Participants

The current study was conducted with two intact groups in a vocational school (two-year degree) offering naval education in Kocaeli, Turkey. Two intact groups pretest posttest design was used owing to the administrative regulations, which placed the students in classes based on their educational background, hand-eye coordination test and the university entrance exam results. All classes consist of 18-25 students and have courses on specific programs called *branches*, e.g. sailing, navigation, radio communication, machinery, electrical technician and others required on a ship. In this sense, the classes from the same branches presented high similarity in terms of educational background, which could be described as homogeneous groups. Since the researcher himself, as the teacher of both groups, had already no chance to select the participants randomly, two classes as experimental and control groups were chosen from the same branch (Electrical technician branch) and they were both informed about the present study. The experimental group, consisted of 19 students, and the control group, consisted of 20 students. They were between the ages of 19-20 and, all

of them were male due to the school policy. The tests and questionnaires administered during the study were delivered in digital format via the LMS and, all participants preferred to use pseudonyms instead of their real names. In addition to this, anonymous mode was activated for the questionnaires, so that the participants could respond comfortably and honestly. It should also be noted that the participants were given an orientation on how to effectively use the LMS considering its role in the present study. In this respect, some of the students were guided and trained specifically since they had weak computer familiarity at the time of the study.

The vocational school has 23 branches, each of which has compulsory English courses (A1-A2 levels) since the graduates will require frequent communication in English and read various documents throughout their up-coming professions. First grade students take seven hours of English classes in a week, while the second grades have five. The groups participated in the current study were from the second grades and both of them took their courses in their own classrooms which were equipped with smart boards and sound systems in order to enhance the quality of the learning environment. Of the five hours given, three hours were for the main course for covering the units of the course book via the IWB (interactive whiteboard) software; one hour was for compulsory silent reading; one hour was for self-study in the computer lab for the revision of the covered units through the I-book software of the course book. Accordingly, only three hours were applicable for covering the units in the lesson plan and the current study's instructional treatment.

Participants, being multi-national since the school accepts exchange students from various countries, are likely to be homogeneous with regard to their current departments, age, gender and educational backgrounds. There are only a few differences owing to the educational system that each country has. For example, some of the students are the graduates of vocational high schools or open high schools while the majority is regular high school graduates. However, their grammar pretest scores administered before the treatment show that they are around the same language level.

At the beginning of the semester, an entrance OPT (Oxford Placement Test) was administered to all freshmen in order to determine their English levels and they will take another one at the graduation. Nevertheless, those two tests have nothing to do with their course grades; it is merely an evaluation of the teachers' performances and the effectiveness of the program. On the other hand, OPT scores also confirm the pre-test results in terms of language level (mostly A1). Course completion grade includes the scores from the following exams:

- 28 % from the midterm exam

- 12 % from two quizzes

- 60 % from the final exam

The students who score 60 out of these items pass the course in the current semester.

3.4. Role of the Researcher

The present study was conducted in a state vocational school in Kocaeli,

Turkey with the participation of two intact groups by the researcher, who had been an English teacher in the institution for six years at the time of the study. The role of the researcher was both the instructor of the two groups and the conductor of the study. For this reason, his active involvement into the implementation process was an advantage in terms of instant response to the issues which might occur. Furthermore, the consistency of the instruction model with the purpose of the study could properly be pursued.

3.5. Data Collection Instruments

The data collection instruments used in the study are: (1) a grammar perception survey (adopted from Webb & Doman (2016)), (2) two grammar exams as pre-test and post-test, (3) a flipped classroom perception survey for learning grammar (adapted from Enfield (2013)) and, (4) a semi-structured focus group interview (adapted from Yang (2017)).

For the present study, having quantitative data collection instruments such as grammar tests and surveys, validity and reliability terms have fundamental role considering the trustworthiness of the data. First of all, a number of means were followed by the researcher in order to provide the validity of the study. The content validity, as being the criterion verifying the degree to which the questions obtain information that is intended, was considered during the preparation period of the grammar tests. Both tests were developed based on the table of specifications of the course books. The pre-test included only the grammar subjects which belonged to the

covered units until the beginning of the treatment period, while the post-test consisted of merely the ones which were given within the treatment period. Thus, the tests solely measured the instructed knowledges that were specifically targeted. Secondly, all data from the from the FC perception survey and interview were cross-checked for the purpose of ensuring the consistency. At this point, both of the instruments showed high similarity in terms of results and, it was verified that the data gathered were in line with each other. As for the grammar perception survey, examining the participants' perceptions on their own grammar skills, no adaptation was made since the questionnaire was used for the same purpose just in a lower grammar level.

Following titles provide detailed information about the instruments used:

3.5.1. Grammar perception survey. A questionnaire demonstrating how the students perceived their current grammar skills was administered to both groups before and after the treatment. Composed of four 5-point Likert-scale items (see Appendix B), the grammar perception survey was adopted from Webb & Doman (2016) and, demographic questions were added since the participants were multi-national groups. Three of these four items were positively worded (items 1, 2 and 4), while one was negative (item 3) and, they were typed in digital format to be delivered through the LMS, which simplified both the implementation and analysis processes.

3.5.2. Grammar exams. At the time of the study, some of the units in the course book were already covered since the participants were selected from the

second year. Therefore, the grammar exam administered as the pre-test was developed from those covered units in order to determine the existing grammar knowledge of the participants. A ninety-three item grammar test was developed based on the units from the course book used before starting the treatment period. Another grammar exam, composed of sixty-one items, was also developed to be used at the end of the treatment period as the post-test, which involves merely the units given during the treatment period. Since the reliability is an important factor questioning whether the instruments employed are appropriate for what is being measured, the two grammar exams as pre-test and post-test were piloted with a similar group of students (N=20) having the same syllabus and the course books (Pre-test α = .893 and post-test α = .742). Most of the items in both of the exams are fill in the blank type so as to decrease, to some extent, the chance factor which is likely to occur in the multiple-choice or true/false questions. Moreover, both exams were administered through the LMS in order to save time (see Appendix C).

3.5.3. Flipped classroom perception survey. The FC perception survey (see Appendix D) was adapted from Enfield (2013) due to the similarities between the purposes of the two studies. For example, one of the research questions that Enfield examined in his study is the impact of FC methodology on students' perceptions and, the author of the present study likewise seeks how the students perceived FC model at the end of the treatment process. The questionnaire is comprised of 22 items originally, however; 9 of them were excluded since they were unrelated to the purpose

of the present study. As a result, 13 items of the survey were given out to the participants of the experimental group in digital format by adding demographic questions as in the grammar perception questionnaire.

3.5.4. Semi-Structured Focus group interview. To be able to confirm the data from the FC perception survey, a semi-structured focus group interview (N=5), whose questions were adapted from Yang (2017) was used (see Appendix E). In doing so, participants' overall opinions could be reached in detail due to the open-ended questions and free nature of the interview. A total of 11 questions were asked to the randomly selected participants and, in-depth data was mined to fill in the gaps that were not addressed with the survey questions. The whole interview took about 45 minutes in total and the researcher took notes of the answers. Since the respondents had insufficient English levels, the interview was made in Turkish and translated into English by the researcher. Thereafter, the whole translation was also checked by two other instructors studying at the same institution to determine accuracy and, the translated texts were again distributed to the interviewees. Respondent validation was conducted both during the interview and at the end of the study to increase the credibility of the research.

3.6. Instructional Treatment

Before explaining the treatment used in the experimental group, it is important to mention what has been done in the English classes for both of the groups. The course book used included IWB software providing all activities in a unit in digital

format (see Appendix F). The researcher followed all of the slides in the software for the control group while he skipped only the grammar slides in the experimental group for the purpose of delivering them in the form of videos the day before the classes. Those videos were recorded with the help of a screen capturing application and except the grammar parts of the units, all other activities were given just as the same way in the control group.

The instruments used for the process of the treatment were (1) pre-recorded videos which were delivered online for out-of-classroom use and (2) handout materials given out as extensive exercises in the classroom. The day before each scheduled lesson, related video was made available on the LMS of the school and assigned as homework for the participants of the experimental group. Students were required to watch the videos and answer a few follow-up questions to check comprehension (see Appendix G). The researcher was able to monitor the students' attempts in detail such as how much time they spent on the videos or how many questions they answered correctly, for the purpose of seeing whether they followed the videos consciously. The next day, in the scheduled class, the researcher asked if there were any misconceptions concerning the subject in the video and, explained in short, if needed. After the clarification, printed exercises were handed out and students were asked to respond the questions individually at first. Once everyone finished, they formed groups of four students to discuss the answers and the researcher, as the instructor, visited the groups during the process so as to facilitate discussions by

raising thought provoking questions, as well as stepping in in the cases of confusion.

The same sequence continued for seven weeks and a quiz was administered after the

4th week for the purpose of making the students to attach importance to the courses.

However, its results were not included in the study as it neither covers sufficient

subject, nor is enough for the adopted teaching strategy to make a difference.

In sum, Table 2 demonstrates the main steps taken during the instruction in

both groups:

Table 2

Instructional Treatment

Control Group (N=20)		Experimental Group (N=19)	
In-class Activities	• Direct instruction for the grammar points face-to-face in the classroom. • Follow-up exercises for immediate comprehension check after the instruction. • Feedback for the assigned homework in the next lesson.	**Out-of-class Activities**	• Online asynchronous instruction for the grammar points in the form of videos via the LMS. • Online follow-up questions for immediate comprehension check.
Out-of-class Activities	• Detailed exercises on the given structure as homework.	**In-class Activities**	• Detailed exercises on the given structure in the classroom. • Group discussions on the points of confusion. • Teacher guidance when required.

3.7. Procedures

The present study, using a quasi-experimental design, investigated the

effectiveness of FC strategy for teaching grammar in a vocational school in Kocaeli, Turkey. For that purpose, a number of preliminary steps were taken beginning with (1) the selection of experimental and control groups, which were two intact groups, (2) recording instructional videos with follow-up questions, (3) preparing handouts for in-class activities, (4) adopting or adapting the questionnaires that will be used, (5) developing and piloting pre-test and post-test and (6) adapting the semi-structured focus group interview questions. Since the courses would be delivered via the LMS, videos, questionnaires, pre-test and post-test were uploaded to the system and the course page was designed according to the order of the instruments that would be used.

The researcher began the study by giving out the grammar perception survey adopted from Webb & Doman (2016) to the both groups in order to find the attitudes of the participants towards their current grammar skills. Following the questionnaire, pre-test was administered so as to check the grammar knowledge of the two groups at the time and, the study proceeded with the treatment period. The experimental group was instructed with FC methodology for the grammar parts of the units in the course book, while the control group took those parts in non-flipped way just as the rest of the tasks. In other words, a pre-recorded video, introducing the related grammar subject of the unit which was supposed to be covered that week, was delivered to the experimental group via the LMS the day before the scheduled class-hour. Logging into their LMS accounts, all students in the experimental group watched the video and

answered the follow-up questions. The students were demanded to take notes in the cases of confusion concerning the content of the videos to ask for an explanation in the classroom the next day. That was the instruction phase of the FC model and the next one was to be in the classroom with extensive activities related to the grammar subject given in the video. The following day, the students were asked whether they need clarification on any point and, the exercises testing the pre-taught grammar structure were distributed to the students to be responded individually. Next, the researcher formed groups of four students by paying attention to the inclusion of one competent student at least in each group to discuss the issues they faced. The researcher himself also visited the groups for the purpose of fostering interaction between the participants and making them learn from each other. The participants kept those exercises in their files and the video was available on the course page for further revision.

On the other hand, the control group took the same grammar instructions face-to-face and then, they responded the follow-up questions in the classroom. Unlike the experimental group, control group students were able to ask the points that they did not comprehend during the instruction. At the end of the lesson, the same exercises that were done in the classroom with the experimental group were assigned as the homework for the control group. In that case, it is important to note that the students were unable to have teacher help while doing their homework. However, they were informed that they could consult with the teacher in the next class for any

confusion related to the exercises. The same processes were repeated for 7 weeks for both of the groups and the instructional treatment phase was ended.

In the following phase, a grammar exam, as the post-test, involving only the grammatical structures taught during the seven weeks of treatment was administered to the groups to check if the instruction methods employed made any difference in students' achievement. Immediately after the post-test, the same grammar perception survey used at the beginning of the study was given out to the both groups again to find if their attitudes towards their grammar skills changed. Additionally, an FC perception survey examining the students' perception of FC methodology for learning grammar was also given only to the experimental group. Lastly, a focus group interview was held with randomly selected 5 members from the experimental group to provide extended data for the perceptions of the participants on flipped instruction method as well as the FC perception survey.

3.8. Data Analysis

All quantitative data collected in the present study were analyzed using the Statistical Package for Social Sciences 2.0 (SPSS). The responses to the focus group interview questions were written down during the process and respondent validation was conducted.

Firstly, the answers to the grammar perception survey, in Likert scale format, were typed in the SPSS and a frequency analysis was run to find out the general tendency for the perception of the grammar skills of each group. The overall analysis

was repeated with new answers exactly in the same way at the end of the treatment period, since it was administered twice in the study. Moreover, a Wilcoxon Signed Rank test was run for both groups to see the difference between the responses given before and after the treatment in a detailed way, with regard to whether the change was statistically significant.

Secondly, the pre-test and post-test results were also evaluated using SPSS descriptive analysis for the (1) pre-test and post-test results of the control group, (2) pre-test and post-test results of the experimental group and, (3) SPSS independent samples t-test analysis for the post-test results of both groups.

Next, an SPSS frequency analysis was also operated for the responses to the FC perception survey adapted from Enfield (2013) following the post-test and, how the participants of the experimental group perceived the treatment was examined.

CHAPTER IV

Results

This chapter, in the pursuit of the answers to the research questions posed, consists of the results achieved at the end of the data analysis process. Of the two research questions, the first one looks for whether or not the FC model has positive impact on EFL learners' grammar achievement. To be able to find the answer to this question, pre and post-tests on grammar were administered to both groups and the results were analyzed in SPSS by using independent samples t-test. Moreover, an FC perception survey, investigating the attitudes of the participants in the experimental group towards learning grammar with FC method, was given. Lastly, a semi-structured focus group interview with 5 participants from the experimental group was carried out.

The second research question asks how the FC model affects the students' attitudes towards learning grammar skills. To this end, a grammar perception survey was given before and after the treatment period to find out the difference in the attitudes of the two groups and, results were compared.

4.1. Findings Related to Research Question 1

The first research question examines the effectiveness of FC on teaching grammar to EFL learners by comparing the control and the experimental groups in terms of their achievements in their post grammar tests. Table 3 shows the test scores of the control group in detail.

Table 3

Descriptive Statistics of the Control Group's Test Scores

	N	Range	Min	Max	Mean	SD
Pretest	20	43,01	25,81	68,82	47,20	11,16
Posttest	20	44,27	37,70	81,97	63,36	13,02

Accordingly, the mean score in the non-flipped group increased to 63,36 from 47,20 in the post-test, the minimum score raised up to 37,70 from 25,81 and, the maximum score reached 81,97 from 68,82 at the end of the instruction period.

On the other hand, there is also an improvement in the post-test scores of the experimental group for which FC strategy was used. Table 4 demonstrates that the mean score, similarly, increased to 72,22 from 46,58 in the post-test. Furthermore, the minimum score scaled up to 47,54 from 25,81, while the maximum score raised up to 88,52 from 66,67.

Table 4

Descriptive Statistics of the Experimental Group's Test Scores

	N	Range	Min	Max	Mean	SD
Pretest	19	40,86	25,81	66,67	46,58	10,93
Posttest	19	40,98	47,54	88,52	72,22	11,21

Descriptive statistics for both of the groups asserted that participants improved their grammar skills either in non-flipped or flipped classroom at the end of the treatment period. However, an additional analysis, independent samples t-test analysis, could provide the significance rate of the achievement, which helps answer the first research question appropriately. As shown in Table 5, the difference between experimental and control group is statistically significant (p = ,029) given the

significance rate at the p<0.05. The Sig. value as .601 also reveals that the variances

are distributed homogenously.

Table 5

Comparison of the Post-test Results of the Two Groups

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. 2-tailed	Mean Dif.	Std. Error Dif.	95% Confidence Interval of the Dif.	
								Lower	Upper
Equal variances assumed	,278	,601	-2,27	37	,029	-8,86	3,90	-16,76	-,958
Equal variances not assumed			-2,28	36,66	,028	-8,86	3,88	-16,73	-,986

Note: Significant at the p<0.05

As a result, the teaching method adopted in the experimental group, which is

flipped classroom, is likely to be considered as more successful than the non-flipped

classroom design.

4.2. Findings Related to Research Question 2

The second research question investigated the perceptions of the participants

in the experimental group on FC model for learning grammar. Consisting of 13 items,

an FC perception survey was given out to the participants of the experimental group

and almost all of the answers were positive towards the method adopted (α = .759).

That is to say, the answer to the first item, which is asking how effective the

participants found the instructional videos in helping them learn grammar, showed

that 17 (89,5%) students thought they were very helpful and 2 students (10,5%) found them somewhat helpful. As for the second item, all students declared that the content of the videos was either very engaging/interesting (%78,9) or somewhat engaging/interesting (21,1%). Next item, similarly, dwelled on the content of the videos again, regarding their difficulty levels this time. Accordingly, 14 students (73,7%) reported that the videos were appropriately challenging, while 4 (21,1%) students found them too easy and 1 (5,3%) student found them too difficult. Following item sought for the opinions of the participants on the average duration of the videos, which was 18 minutes, and almost all of them (94,7%) stated that it was appropriate for the given grammar structure, yet 1 (5,3%) student told it was too long. Another item questioned the students for whether taking notes while watching the videos was helpful in learning grammar and 17 (89,5%) of them responded as very helpful, while 1 (5,3%) student declared somewhat helpful and, the other one told he never attempted this strategy. Next item investigated whether the participants found answering the questions provided after the videos helpful in learning grammar and all of the students (100%) reported that they found them very helpful. Similarly, for the following item which is asking whether working along with the videos helpful in learning the content, all students (100%) stated that it was very helpful. The following item revealed the answers to how the use of quizzes impacted the participants' motivation to watch the videos. At this point, 4 (21,1%) students responded that they were more likely to watch the videos because there were quizzes, while 14 (73,7%)

students declared that they were equally likely to watch the videos whether there were quizzes or not. On the other hand, 1 (5,3%) student reported that he was less likely to watch the videos because there were quizzes. As for the next item, 18 (94,7%) students found that the practice of calling on students to perform tasks that were introduced in the videos was very effective in helping them learn the target grammar structures, while 1 (5,3%) student found it somewhat effective. In the same vein, 16 (84,2%) students also reported that it was always necessary in maintaining their engagement during in-class demonstrations, yet 3 (15,8%) students thought it was sometimes necessary. Most of the participants (68,4%), in the next item, stated that they were more confident in their ability to learn grammar without taking a formal course than they were before taking this course. In contrast, the rest of the students (31,6%) reported that there had been no change in their ability to learn grammar since before taking this course. On the other hand, almost all of the students (94,7%) highlighted in the following item that they were more likely to use instructional videos than they were before taking this course. In the last item, the participants were asked how the content/skills they learned in this class would be useful. As the answers, while 17 (89,5%) students declared that they would be useful both professionally and personally, 2 (10,5%) students stated only personally.

For more detailed information, tables from SPSS frequency analysis are demonstrated in Appendix I for all of the items in FC perception survey.

In addition to the FC questionnaire, a semi-structured focus group interview

with five members from the experimental group was held at the end of the study. 11

questions were asked and the gathered answers were in accordance with the FC

perception survey.

4.2.1. Experience of FC prior to the present study. At the beginning of the

interview, all participants were asked whether they had any FC experience prior to the

current study and the whole group declared that this was the first time they met such

an approach.

4.2.2. General feelings about FC. When asked about their general feelings for

the FC model, 3 of them stated positive attitude as in the following excerpts:

> It is a good method for students because you aren't worried about what if I
> don't understand something. You have the chance to watch as many times as
> you want. You can take notes without missing anything and use them in the
> classroom activities

Similarly, another respondent mentioned FC having a different style as it

makes him feel he is active in the classes:

> It's not boring as the case that the teachers lecture on the grammar rules in the
> class and they ask some questions about them. This is a routine lesson.
> However, there is something different with flipped classroom, like you feel
> that you are doing something.

On the other hand, 2 participants expressed their worries when they first

started having FC instruction, however; their ideas have changed thereafter and one of

them explains his thoughts as follows:

Flipped classroom gives more responsibility to us and this made me feel a little bit stressed in the beginning. I thought that it was not fair to try to understand the grammar rules with a video and I was also worried about what if I had a question at some point. So, I didn't have positive impressions about this method at first but each following week I became more self-confident.

… After all, it forced me to study more than I did before and I'm happy with it now.

4.2.3. Opinions about FC for learning English grammar. All of the students highlighted the importance of the grammar in terms of learning a language. For that reason, they focused on the videos more deeply and stated that learning grammar through videos is quite advantageous with the following excerpts:

It's very easy to follow the videos and do the exercises with our computers and as I said before, I'm learning English in Turkey and my Turkish is much better than my English. So, flipped classroom has an important advantage for me since it provides the opportunity to watch by pausing and as many times as I like.

Another student shed light on the practicality of the FC model and commented:

I think that grammar is important for learning English. But I usually forget those rules and I am too lazy for reviewing them, because it takes much time to look up the books or some other resources. However, flipped classroom facilitates the process as you just log into your account and watch the related video. Videos are very practical.

4.2.4. Difficulties with online tests and videos. None of the participants reported problems with the videos clips and the following online tests. They were all satisfied with the system used, which can also be seen in the following response by one of the students:

No, I haven't had any difficulties because our teacher taught us how to use the system for watching videos and doing exercises when we first came to this school.

4.2.5. Relations between FC method and being an active learner.

Participants were asked whether they think FC could help them become an active learner, after they were briefed about what it was to be an active learner. Accordingly, they all agreed that the FC model lead them to be more active both in and out of the classes. One of the participants expressed his thoughts as:

During the flipped classroom period I watched the videos and studied regularly before the classes because we were doing exercises related to the videos in the classroom. If I hadn't learnt the rules before, I wouldn't be able to give correct answers and discuss with my friends. So, I believe that flipped classroom helps you became an active student.

Another student mentioned his earlier experiences with English classes and stated that:

Yes, I think I can be an active learner because I feel responsible for watching the videos as I don't want to stay silent in the discussion groups. To be honest, we used to share the homework given and finish it quickly in my country. However, we do homework in the class in this method and I have to understand the subject before the class not to be embarrassed. So, I need to do everything consciously.

4.2.6. Learning skills developed during FC experience. During the FC strategies adopted in the classes with the experimental group, participants claimed that they acquired or found chance to use some learning skills. Student A, for example, declared that:

… I also learnt that note taking is very important and videos give me this chance easily.

Student D, in a similar vein, emphasized that:

I learnt how to search for information on the internet and to take notes while watching lesson videos.

Furthermore, Student E reflected his opinion about group work with the following excerpt:

… In addition, I noticed that I can learn something better by discussing with my classmates.

Student C, on the same topic, highlighted the importance of technology in education, which is quite clear in his next quotation:

I learnt that using technology is a practical way to reach the information. In addition, noticed that I learn better when I choose when to study. So, flipped classroom made me realize that I can learn independent of time, place and even the teacher…

4.2.7. Transfer of acquired learning skills in FC to other subjects. As for the effects of FC method on the other subjects, 4 participants, in particular, elaborated on searching for online resources for the other subjects after the present study. One of them told that:

I started to look for course videos about the courses that I didn't understand on Youtube.

Another student also mentioned the appropriate time of study for him as an advantage of the video lessons and shared similar thoughts as follows:

I choose the best time for me to study and look for online resources, especially videos on the subject that I need to study. I also search for questions to ask and discuss in the classroom.

Unlike other participants, Student E pointed out a different gain from FC model and explained what he transferred in the following excerpt:

We, a small group of friends, started to tell each other what we understand from a lesson and strike a balance. Next we consult with the teacher about the disagreements. This is a good method I discovered through flipped classroom.

4.2.8. The favorite features of FC. As a new learning model for the participants, FC is also thought to have pros and cons and, the students were requested to comment on what they liked the most about FC. In summary, all of the participants addressed the flexible nature of FC regarding the time management with the following quotations:

The best thing about flipped classroom is to reach the information any time I like and choose the time I like to watch.

I can easily find the information that I need for my lesson whenever I want. It's like taking a private lesson.

I choose when to learn.

4.2.9. Unfavorable features of FC. Conversely, the participants were also asked to address what they liked the least about FC and, four of them stated that there was nothing they could tell, while one student declared:

It's tiring.

4.2.10. Suggestions for developing FC activities. In order to learn the opinions of the students concerning FC activities and have their comments, their

suggestions for further activities to maximize the learning outcomes were asked. Four students underlined the role of follow-up online activities after the videos with the following excerpts:

I would like to do more exercises after the videos and the teacher could provide similar web links like videos or online quizzes.

More questions after the videos would be more helpful to prepare for the in-class exercises.

On the other side, one student had no proposals and told:

I have no other suggestions

4.2.11. General comments for FC model. Finally, two participants, for the question whether they have additional comments to give, offered the adoption of FC for the other courses and said that:

Other lessons could use flipped classroom method

This method should be used for other lessons, too.

The other three students asserted no other comments.

For the whole answers, please refer to the Appendix J.

Consequently, all three instruments presented viable results with each other and, they are likely to support the first hypothesis suggesting that FC methodology has positive impact on EFL learners' grammar achievement.

4.3. Findings Related to Research Question 3

The third research question seeks how flipped classroom model affects the

students' attitudes towards their own grammar skills. For this purpose, a survey on grammar perception was given to both groups. First, the questionnaire was administered before beginning the treatment so as to find the participants' current perceptions on their own grammar skills. At the end of the treatment period, the same questionnaire was given again to check whether the students' attitudes have changed (Experimental group pre-test α = .710, post-test α = .716 and Control group pre-test α = .704, post-test α = .750).

First of all, results of the grammar perception survey, which is in the form of a 5-point Likert scale, showed that the participants in both of the groups revealed increased positive attitudes towards their own grammar skills at the end of the treatment. In this respect, although the survey consists of four items, the analysis was run by excluding the 3rd item since it was negatively worded. The other three items were positive and, the answers closer to five defined high confidences while it meant less confident towards 1 (see Appendix H for detailed information). Accordingly, control group's mean score in the survey administered before the treatment was 2,36 and, it raised up to 2,73 at the end of the treatment. Similarly, the experimental group, having 2,26 mean score in the first administration, achieved a mean score of 3,19 at the end of the treatment. These results suggest that the participants in both of the groups gained more confidence in their grammar skills after the treatment process. However, it is also important to find out which group has a significant increase rate. In this regard, although the experimental group demonstrated a higher confidence based

on the mean scores, Wilcoxon Signed Ranks tests were run for the items in pre and post grammar perception surveys to be able to compare the results effectively. Table 6 shows the results for the students' perception on grammar before and after the treatment for the experimental group. Accordingly, p= .003 for the 1st and the 2nd items, while it is p= .004 for the 4th item, which point out a statistically significant change in the students' confidence (p<0.05).

Table 6

Comparison of the Items in the Grammar Survey for Experimental Group

	Item 1 Pretest – Posttest Comparison	Item 2 Pretest – Posttest Comparison	Item 4 Pretest – Posttest Comparison
Z	-2,924	-2,924	-2,887
Asymp. Sig. (2-tailed)	,003	,003	,004

On the other hand, as shown in Table 7, which illustrates the comparison of the items for the control group, the results reveal a significant change with p= .011 for the 1st item and p= .020 for the 2nd and 4th items (p<0.05) as well. Thus, it is possible to conclude that both groups improved their self-confidence and obtained positive attitudes towards their own grammar skills during the treatment period regardless of the method they were instructed with.

Table 7

Comparison of the Items in the Grammar Survey for Control Group

	Item 1 Pretest – Posttest Comparison	Item 2 Pretest – Posttest Comparison	Item 4 Pretest – Posttest Comparison
Z	-2,530	-2,333	-2,333
Asymp. Sig. (2-tailed)	,011	,020	,020

To sum up, this chapter presented the data gathered with data collection instruments which are grammar tests, surveys and the focus group interview. It clearly constituted the basis for the researcher to confirm the qualitative data with the quantitative in order to achieve a more accurate picture of the study. After all, next chapter will discuss those outcomes in detail.

CHAPTER V

Discussion and Conclusion

The purpose of the present study was to explore the effectiveness of the FC model on teaching English grammar to EFL learners, besides their perceptions on the related method. For this purpose, an experimental research, in the form of a two intact groups pre-test post-test design, was conducted and the experimental group was treated with FC methodology to teach grammar. Additionally, a grammar perception survey, an FC perception survey and a focus group interview were carried out in order to have detailed data.

This chapter, based on the related literature, will discuss the findings considering the analyses presented in the previous chapter. Moreover, implications, limitations and suggestions for further research will be given.

5.1. Discussion

The research questions posed for the present study investigate (1) whether the FC methodology is effective on EFL learners' grammar achievement (2) participants' perceptions on FC strategy for learning grammar and (3) how the participants' attitudes towards their own grammar skills have changed at the end of the treatment period. To this end, results were evaluated in terms of the achievements of the students and their attitudes reflected in the surveys and interview. Based on the achievement criteria, students were tested with two grammar exams, the mean scores of which are demonstrated in Table 8.

Table 8

Descriptive Statistics of the Groups' Test Scores

	Experimental Group		Control Group	
	Max	Mean	Max	Mean
Pretest	66,67	46,58	68,82	47,20
Posttest	88,52	72,22	81,97	63,36

Results show that both of the groups increased their grades in the post-test, however; the experimental group achieved higher scores than the control group did and, this increase is statistically significant according to the independent samples t-test analysis (p= .029).

Furthermore, in the post-test, the maximum scores from both of the groups demonstrate a higher positive difference in the experimental group in support of the method adopted. For example, the maximum grade in the experimental group, as being 66,67 in the pre-test, increased to 88,52, while the maximum grade in control group could raise up to 81,97 from 68,82. Thus, it can be assumed that the significant achievement in the experimental group is likely to be attributed to the teaching method employed. It is not surprising that such a teaching method, providing the learners with flexibility and the opportunity of teacher guidance in the practice process, came up with higher achievement rates. Moreover, not only the larger scores in the grammar exams but also the positive attitudes of the learners towards the method in question points out to the effectiveness of the current strategy. That is to say, the answers given to the FC perception questionnaire were also likely to be in support of the idea that teaching English grammar to EFL learners using FC model has

positive impact on their achievements. The first item posed in the questionnaire investigated how effective the participants in the experimental group found the instructional videos in helping them learn grammar. 17 out of 19 participants responded this question as they found them "very helpful", which is a quite high proportion with 89.5%, while the remaining 2 students declared that they were "somewhat helpful". In the same vein, the 2nd and 3rd items, asking about the students' ideas on the content of the videos, were responded as "very engaging/interesting" (78.9%) and "appropriately challenging" (73.7%). As for the durations of the videos, which were 18 minutes on average, 18 participants (94.7%) found it "appropriate for the given grammar structure". Thus, it is possible to say that the majority of the students in the experimental group were satisfied with the overall characteristics of the instructional videos. The 4th item of the survey sought for whether the learners found taking notes while watching the videos helpful in learning grammar. While 17 participants (89.5%) declared that it was "very helpful", 1 participant found it "somewhat helpful", and the last student told he "never attempted this strategy". It is definitely not surprising that the videos' feasibility (pausing, rewinding or forwarding) provided the learners with a large amount of time to take effective notes. On the other hand, all of the participants (100%) pointed out that both working along with the videos and answering the questions given after them was "very helpful in learning grammar". Next item examined the tendency of the participants on how the quizzes, administered 2 times throughout the treatment period, impacted their motivation to

watch the videos. Answers showed that 14 students (73.7%) were "equally likely to watch the videos whether there were quizzes or not" and, only 4 students (21.1%) kept up with the videos because there were quizzes. The last member of the group declared that he was "less likely to watch the videos because there were quizzes". At this point, it is important to note that the questionnaire was administered online in the anonymous mode so that the respondents could feel comfortable with their answers. In that case, it might be inferred that the majority of the group preferred to watch the videos not only due to the quizzes, but they somehow liked to do it for some reasons, one of which could be that they were pleased with the method in learning grammar. Items 9 and 10 searched for the opinions for calling on students to perform tasks that were introduced in the video and, 18 students (94.7%) responded that it was "very effective in helping them learn the target grammar structures" and 16 (84.2%) students also thought it was "always necessary in maintaining their engagement during in-class demonstrations". Although only 2 tasks were given out of 7 videos in total, which were 2 writing assignments related to the target grammar structures, a high proportion of the students, in fact, stated that they learnt better with meaningful tasks such as writing instead of mechanical exercises such as fill in the blanks type of questions after the videos. Not surprisingly, such a practice also contributed more to their engagement in the classroom time. The following 2 items (11 and 12) focused on the attitudes of the participants towards learning grammar through videos outside of a classroom setting and, the answers given were more likely that the students approved

of studying as such for learning grammar. Accordingly, 13 students (68.4%) asserted that they were "more confident in their ability to learn grammar without taking a formal course than they were before taking this course". In addition to this, 18 students (94.7%) expressed that they were "more likely to use instructional videos than they were before taking this course". Those two proportions even suffice to suggest that the participants have positive attitudes towards learning grammar with the help of FC instruction design and they also tend to follow its procedures for further learning experiences. The last item (13) in the questionnaire asked for whether the participants believed the content/skills they learned in this class would be useful. As the responses, while 17 students agreed that they would be useful for both "professionally (career related) and personally (non-career related)", 2 students declared that they are useful "only personally".

Following the FC perception survey, a focus group interview was carried out with 5 members of the experimental group in order to achieve a better understanding of the students' attitudes towards FC method. Answers collected in the interview are mostly consistent with the data gathered in the FC perception survey. First of all, all 5 respondents declared that they had never experienced FC in any of the courses they took prior to the current study and, their first impressions were all positive about the method, except student D was worried at the beginning but he liked it thereafter. They expressed their general feelings as the FC is quite advantageous and beneficial for them since it provides the opportunity to review the recorded lessons as many times as

they like by pausing, rewinding or forwarding. Given the fact that they are exchange students learning English as the 3rd language (L3) in a foreign country, it is not surprising that such a flexible environment offered by FC model is favorable for them. Moreover, the use of technology, considering the insufficient technological support in the schools of their own countries, is another motivating factor that is boosting their positive feeling for the FC.

As for the thoughts about FC strategy on learning English grammar, participants emphasized that they had been to the school as exchange students and learning English as the 3rd language. Furthermore, they generally think that grammar has an important role on learning a language, which is only delivered in the form of videos in Turkish. For that reason, considering their Turkish is not as good as their native language, but is the only common language at the same time, such an instruction method made the students feel safe by keeping the videos accessible at all times. In that sense, all students were considerably in favor of FC method due to its flexibility in the instruction phase. In addition to this, none of the participants stated that they encountered difficulties while watching the videos or doing the following online exercises.

Participants were encouraged to elaborate more on the FC method they experienced so as to collect extensive data including their perceptions. To this end, they were introduced with a new concept called "active learner" and were asked whether FC strategy helped them become an active learner. Based on the answers

given, it is clear that the students consider themselves as active learners during the treatment period exemplifying their efforts both in and out of the classes. It should also be noted that the feeling of responsibility was stressed by the students explicitly.

In the course of the FC instruction, participants undoubtedly confronted with new applications and developed new learning skills. When asked about them, they specifically mentioned that they realized it was in their hands to reach the information and, there was no need for a formal classroom to learn something thanks to the technology. Similarly, they also put an emphasis on the discussions carried out in the classes, in which they actively engage in interactive processes. As a result, it can be suggested that students achieved skills such as searching for information on the Internet, learning through short videos by taking notes and discussing the subjects at hand with partners or the teacher for a multi-dimensional understanding. At this point, it is also important to know how the students could transfer those skills to other subjects. For example, all the participants drew attention to the role of the videos published on websites such as Youtube, Daily Motion, or Khan Academy. After the current study, students declared that they started to look for videos on specific topics for the other lessons. Besides the videos, one of the students stated that they work as a group with some of his classmates and have small discussions before the classes, which is a good example of transfer from FC methodology. At one point, the participants were asked to tell the feature that they liked the most and the least about FC. Accordingly, while accessibility and flexibility are the common grounds that the

entire students meet on for the most liked ones, 4 students stated that there is nothing they liked the least about FC, which also illustrates the high positive attitude towards the method in question. Nevertheless, when it comes to the question whether they have any suggestions for the case FC activities would be conducted again, 4 participants pointed out that more questions after the videos could maximize the learning outcomes. Namely, it is possible to infer from this expression that they consider the videos with follow-up questions, which is the existing case in the present study, facilitates learning besides improving learning skills.

To sum up, based on the limited related literature on using FC in EFL grammar teaching, it is possible to suggest that the findings of the first research question are in line with the previous studies (Webb & Doman, 2016; Li, Wang, Wang, & Jia, 2017). Additionally, the results of the survey for students' perceptions on FC for learning grammar and the interview revealed that the participants of the experimental group were pleased with the instruction method, which is also in line with the second research question (Al-Harbi & Alshumaimeri, 2016).

On the other hand, the analysis results of the data gathered to answer the third research question demonstrated that all of the students in both of the groups gained a high self-confidence towards their own grammar skills. For the experimental group, Table 9 shows the results of Wilcoxon Signed Rank Test run for the items in grammar perception surveys, in a way that the third item of the questionnaire is excluded since it is negatively worded. As can be seen in the table, significance values for all three

items (P= ,003 for Items 1 and 2, and P= ,004 for Item 4) are below 0,05, which

means positive attitude towards their own grammar skills has significantly developed

during the treatment period.

Table 9

Comparison of the Items in the Grammar Survey for Experimental Group

	Item 1 Pretest – Posttest Comparison	Item 2 Pretest – Posttest Comparison	Item 4 Pretest – Posttest Comparison
Z	-2,924	-2,924	-2,887
Asymp. Sig. (2-tailed)	,003	,003	,004

Similarly, the same analysis for the control group also illustrates a statistically

significant positive change in learners' self-confidence in Table 10.

Table 10

Comparison of the Items in the Grammar Survey for Control Group

	Item 1 Pretest – Posttest Comparison	Item 2 Pretest – Posttest Comparison	Item 4 Pretest – Posttest Comparison
Z	-2,530	-2,333	-2,333
Asymp. Sig. (2-tailed)	,011	,020	,020

At this point, the third hypothesis, suggesting more positive attitudes towards

their own grammar skills in the experimental group compared to the control group, is

likely to be rejected. However, descriptive statistics revealed minor difference

between pretest and posttest in terms of mean scores for the control group

($M_{pre-test}$=2,36 $M_{post-test}$=2,73), while it showed a higher difference for the experimental group ($M_{pre-test}$=2,26 $M_{post-test}$=3,19). Furthermore, considering the level of the grammar subjects given during the treatment period, which is A1-A2 (based on CEFR), the fact that students in the control group had no difficulty at comprehending these simple target structures could be the main cause of the significant change for both of the groups . In other words, it is not surprising that the elementary level EFL learners are able to comprehend the basic grammar structures simply which, in turn, puts less emphasis on the teaching method with regards to their perceptions on their own grammar skills. In any case, it is also important to note that the group treated with FC model attained a higher mean score at the end of the treatment period.

In summary, the results from the grammar tests suggest that the group treated with FC model, achieved higher scores at the end of the treatment period and, it could be considered that the first hypothesis is likely to be accepted. Next, based on the responses from the FC perception survey and interview, participants are generally content with the FC strategy, which is also consistent with the second hypothesis posed. On the other hand, although the results from the grammar perception survey are statistically insufficient to accept the second hypothesis, it is apparent that the participants in the experimental group developed more positive attitudes than the students in the control group towards their own grammar skills on average.

5.2. Implications

The current study proposed various implications for the adoption of FC with intent to teach English grammar to EFL learners, all of which are in accordance with the previous studies.

Firstly, the most important implication of the study is the fact that the learners have begun to take a great deal of responsibility in FC instruction model since the purpose is the in-class implementation of what has been learnt out of the classroom. In this way, it is possible to achieve a learner model that engages into the learning process consciously, who are also called in the literature as the active learner (Bonwell & Eison, 1996). At this point, students, in particular in the interview, stated that they acquired new learning behaviors. For example, instead of listening in the passive mode, they developed learning skills such as searching for more sources of information on the Internet, learning from videos by taking notes and discussing the issues with peers or the instructor for better understanding. It should also be noted that the current design enabled the students to activate their higher-order thinking skills with the help of the instructor as the facilitator during the class time.

Second implication that attracts notice specifically from the interview is the students' desire for a flexible environment which might have resulted in higher scores in the post-test. Learners to whom online resources offered as in the FC method self-regulate themselves by setting their goals, focusing their attentions, instructing

and evaluating themselves (Zimmerman, 2002). Thus, they achieve higher success with the advantage of choosing when, where and how much to study. Those opportunities provided the learners in the current study with a more fruitful setting in which they had the chance to decide the pace of their learning. In this regard, learner differences no longer became a problem especially for the researcher as the instructor dealing with students came from a wide variety of backgrounds.

Another implication suggested by the study is the high motivation and willingness observed on the participants due to the use of technology, which is also quite clear in the interview responses. Accordingly, it is an advantageous point for the instructors to integrate technology into their courses since the younger generations have a good deal of interest.

5.3. Limitations and Suggestions for Further Studies

The participants of the current study were 39 male students studying in a state vocational school. Female students were not allowed due to the administrative policy, which is also the most salient limitation to the study. Therefore, it was impossible to know whether the gender would make any differences and, the results, hence, were not generalizable. In the same vein, the age of the participants, between 19-20, was also a matter of diversity and, it is essential to see if there is resemblance between different age groups. In that sense, conducting another research including participants from various ages and both genders would make the present study more satisfactory.

On the other hand, language levels of the participants, which are elementary, were all the same and that situation was a weakness of the current study in terms of representativeness. Given the limited language level, a similar study is needed to be done with a more comprehensive group of participants from various levels. Moreover, the level of the students participated in the current study is considered to be inappropriate since it was too low to be able to be tested on different instruction models. In other words, even if the experimental group achieved higher scores, it was not surprising that the post-test results of the grammar perception survey were both statistically significant (according to the Wilcoxon Signed Ranks test) since the grammar structures given throughout the treatment period were not challenging enough to make a difference. As a result, further studies consisting of grammar instruction at higher levels could reveal more clear results. In addition to this, the number of the items in the grammar perception survey was insufficient to collect comprehensive data, which points out to the necessity of developing a grammar perception survey.

Lastly, assigning small meaningful tasks instead of mechanical exercises after the online videos could have improved the effect of the treatment in terms of providing the participants with more challenging activities, which was also mentioned by one of the students participated in the focus group interview.

5.4. Conclusion

The results of the present study demonstrated that both quantitative data was consistent with the first hypothesis posed at the beginning of the study. In other words, unlike in the control group, grammar exam results showed that the achievement of the participants in the experimental group has improved at a statistically significant degree after the treatment. As for the second hypothesis, participants' answers to the FC perception survey were also in support of the use of FC methodology. Moreover, students clearly declared their positive attitudes towards FC model in the interview carried out at the end of the treatment. For example, they generally stated that this study has changed their studying behaviors in a way that they undertake more responsibility in the learning process instead of expecting much effort from the instructors.

On the other hand, although the post-test results of the grammar perception survey were both statistically significant for the two groups, it is still important to note that the experimental group had considerably higher significance rate than the control group did despite the low level of grammar subjects. However, this higher rate is insufficient to assert that the third hypothesis could be accepted.

Consequently, it can be concluded that the current study is in concordance with the cognitive load theory and the self-regulation theory. Furthermore, the characteristics of the FC methodology share strong similarities with the theory behind

active learning. In this regard, the present study contributed to the literature on the part of these theories and the use of FC for teaching grammar to EFL learners by providing newer understandings for further studies.

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Appendix A

Screenshots from lesson reports

Lesson report statistics

Appendix B

Grammar perception survey

Age　　　　: _____

Gender　　: _____

Nationality : _____

Type of school you have graduated (*High School, Vocational High School, Open High School, etc.*)　　: _____

How many years have you been learning English?

☐Less than 3 years　　　☐3-5 Years　　　☐6-9 years　　　☐More than 10 years

1. I am comfortable with my English grammar skills.

☐Strongly Agree　　☐Agree　　☐Neutral　　☐Disagree ☐Strongly Disagree

2. When asked about my English grammar skills I feel confident.

☐Strongly Agree　　☐Agree　　☐Neutral　　☐Disagree ☐Strongly Disagree

3. I am not strong at English grammar.

☐Strongly Agree　　☐Agree　　☐Neutral　　☐Disagree ☐Strongly Disagree

4. My knowledge of English grammar is acceptable to read, write, listen and speak.

☐Strongly Agree　　☐Agree　　☐Neutral　　☐Disagree ☐Strongly Disagree

Appendix C

Screenshots from pre-test

Pre-test results

Appendix D

Flipped classroom perception survey

Age : _____

Gender : _____

Nationality : _____

Type of school you have graduated (*High School, Vocational High School, Open High School, etc.*) :_____

How many years have you been learning English?

☐Less than 3 years ☐3-5 Years ☐6-9 years ☐More than 10 years

1: How effective did you find the instructional videos in helping you learn grammar?

☐Very helpful

☐Somewhat helpful

☐Not helpful

2: In general, I found the content of the videos to be

☐Very engaging/interesting

☐Somewhat engaging/interesting

☐Not interesting

3: In general, I found the content of the videos to be

☐Too difficult

☐Appropriately challenging

☐Too easy

4: The average duration of the videos was 18 minutes.

☐Too long for the given content

☐Appropriate duration for the given content

☐Too short for the given content

5: Did you find taking notes while watching the videos helpful in learning grammar?

☐I never attempted this strategy

☐Very helpful in learning grammar

☐Somewhat helpful in learning grammar

☐Not helpful in learning grammar

6: Did you find answering the questions provided after the videos helpful in learning grammar?

☐I never attempted this strategy

☐Very helpful in learning grammar

☐Somewhat helpful in learning grammar

☐Not helpful in learning grammar

7: Did you find working along with the videos helpful in learning grammar?

☐I never attempted this strategy

☐Very helpful in learning grammar

☐Somewhat helpful in learning grammar

☐Not helpful in learning grammar

8: How did the use of quizzes impact your motivation to watch the videos?

☐I was more likely to watch the videos because there were quizzes

☐I was equally likely to watch the videos whether there were quizzes or not

☐I was less likely to watch the videos because there were quizzes

9: The practice of calling on students to perform tasks that were introduced in the video was:

☐Very effective in helping me learn target grammar structure

☐Somewhat effective in helping me learn target grammar structure

☐Not effective in helping me learn target grammar structure

10: The practice of calling on students to perform tasks that were introduced in the video was:

☐Always necessary in maintaining my engagement during in-class demonstrations

☐Sometimes necessary in maintaining my engagement during in-class demonstrations

☐Never necessary in maintaining my engagement during in-class demonstrations

11:

☐I am more confident in my ability to learn grammar without taking a formal course than I was before taking this course.

☐My confidence in my ability to learn grammar without taking a formal course hasn't changed since before taking this course.

☐I am less confident in my ability to learn grammar without taking a formal course
than I was before taking this course.

12:

☐I am more likely to use instructional videos than I was before taking this course.

☐I am equally likely to use instructional videos than I was before taking this course.

☐I am less likely to use instructional videos than I was before taking this course.

13: I believe the content/skills I learned in this class will be useful:

☐Professionally (career related) and Personally (non-career related)

☐Only professionally

☐Only personally

☐Neither professionally or personally

Appendix E

Focus group interview questions

1. Do you have any experience of flipped classroom prior to taking this subject? If yes, could you tell me about it?

2. What are your general feelings about flipped classroom?

3. What do you think about the flipped classroom method for learning English grammar?

4. Have you encountered any difficulties when you did the online tests and learned from online video clippings?

5. Do you think that flipped classroom could help you become an active learner? * Is there any example to give to support/not support your claims?

6. Could you tell me what learning skills you have developed during the flipped classroom experience?

7. Could you tell me how you could transfer the learning skills that you have developed during the flipped classroom experience to other subjects?

8. What do you like the most about flipped classroom?

9. What do you like the least about flipped classroom?

10. If the flipped classroom activities will be conducted again, do you have any suggestions to make them maximize their learning outcomes?

11. Do you have any other comments that you would like to give?

Appendix F

IWB Software

Appendix G

Flipped course design

A lesson page

Appendix H

Grammar survey answers before the treatment

Table H1

I am comfortable with my English grammar skills.

	Control		Experimental	
	Frequency	Percent	Frequency	Percent
Strongly disagree	1	5,0	2	10,5
Disagree	15	75,0	13	68,4
Neutral	1	5,0	2	10,5
Agree	2	10,0	1	5,3
Strongly agree	1	5,0	1	5,3
Total	20	100,0	19	100,0

Table H2

When asked about my English grammar skills I feel confident.

	Control		Experimental	
	Frequency	Percent	Frequency	Percent
Strongly disagree	0	0,0	2	10,5
Disagree	16	80,0	13	68,4
Neutral	1	5,0	2	10,5
Agree	2	10,0	1	5,3
Strongly agree	1	5,0	1	5,3
Total	20	100,0	19	100,0

Table H3

I am not strong at English grammar

	Control		Experimental	
	Frequency	Percent	Frequency	Percent
Disagree	2	10,0	1	5,3
Neutral	4	20,0	3	15,8
Agree	14	70,0	15	78,9
Total	20	100,0	19	100,0

Table H4

My knowledge of English grammar is acceptable to read, write, listen and speak

	Control		Experimental	
	Frequency	Percent	Frequency	Percent
Strongly disagree	1	5,0	2	10,5
Disagree	15	75,0	13	68,4
Neutral	1	5,0	2	10,5
Agree	2	10,0	1	5,3
Strongly agree	1	5,0	1	5,3
Total	20	100,0	19	100,0

Grammar survey answers after the treatment

Table H5

I am comfortable with my English grammar skills.

	Control		Experimental	
	Frequency	Percent	Frequency	Percent
Strongly disagree	0	0,0	1	5,3
Disagree	11	55,0	4	21,1
Neutral	5	25,0	4	21,1
Agree	2	10,0	10	52,6
Strongly agree	2	10,0	0	0,0
Total	20	100,0	19	100,0

Table H6

When asked about my English grammar skills I feel confident.

	Control		Experimental	
	Frequency	Percent	Frequency	Percent
Strongly disagree	0	0,0	1	5,3
Disagree	11	55,0	4	21,1
Neutral	5	25,0	4	21,1
Agree	2	10,0	10	52,6
Strongly agree	2	10,0	0	0,0
Total	20	100,0	19	100,0

Table H7

I am not strong at English grammar

	Control		Experimental	
	Frequency	Percent	Frequency	Percent
Disagree	3	15,0	3	15,8
Neutral	7	35,0	12	63,2
Agree	10	50,0	4	21,1
Total	20	100,0	19	100,0

Table H8

My knowledge of English grammar is acceptable to read, write, listen and speak

	Control		Experimental	
	Frequency	Percent	Frequency	Percent
Strongly disagree	0	0,0	1	5,3
Disagree	10	50,0	3	15,8
Neutral	7	35,0	7	36,8
Agree	2	10,0	8	42,1
Strongly agree	1	5,0	0	0,0
Total	20	100,0	19	100,0

Appendix I

Analysis of the flipped classroom survey items

Table I1

How effective did you find the instructional videos in helping you learn grammar?

	Frequency	Percent
Very helpful	17	89,5
Somewhat helpful	2	10,5
Total	19	100,0

Table I2

In general, I found the content of the videos to be

	Frequency	Percent
Very engaging/interesting	15	78,9
Somewhat engaging/interesting	4	21,1
Total	19	100,0

Table I3

In general, I found the content of the videos to be

	Frequency	Percent
Too difficult	1	5,3
Appropriately challenging	14	73,7
Too easy	4	21,1
Total	19	100,0

Table I4

The average duration of the videos was 18 minutes.

	Frequency	Percent
Too long for the given grammar structure	1	5,3
Appropriate duration for the given grammar structure	18	94,7
Total	19	100,0

Table I5

Did you find taking notes while watching the videos helpful in learning grammar?

	Frequency	Percent
I never attempted this strategy	1	5,3
Very helpful in learning grammar	17	89,5
Somewhat helpful in learning grammar	1	5,3
Total	19	100,0

Table I6

Did you find answering the questions provided after the videos helpful in learning grammar?

	Frequency	Percent
Very helpful in learning grammar	19	100,0

Table I7

Did you find working along with the videos helpful in learning grammar?

	Frequency	Percent
Very helpful in learning grammar	19	100,0

Table I8

How did the use of quizzes impact your motivation to watch the videos?

	Frequency	Percent
was more likely to watch the videos because there were quizzes	4	21,1
I was equally likely to watch the videos whether there were quizzes or not	14	73,7
I was less likely to watch the videos because there were quizzes	1	5,3
Total	19	100,0

Table I9

The practice of calling on students to perform tasks that were introduced in the video was:

	Frequency	Percent
Very effective in helping me learn the target grammar structure	18	94,7
Somewhat effective in helping me learn the target grammar structure	1	5,3
Total	19	100,0

Table I10

The practice of calling on students to perform tasks that were introduced in the video was:

	Frequency	Percent
Always necessary in maintaining my engagement during in-class demonstrations	16	84,2
Sometimes necessary in maintaining my engagement during in-class demonstrations	3	15,8
Total	19	100,0

Table I11

Question 11

	Frequency	Percent
I am more confident in my ability to learn grammar without taking a formal course than I was before taking this course.	13	68,4
My confidence in my ability to learn gram. without taking a formal course hasn't changed since before taking this course	6	31,6
Total	19	100,0

Table I12

Question 12

	Frequency	Percent
I am more likely to use instructional videos than I was before taking this course.	18	94,7
I am equally likely to use instructional videos than I was before taking this course.	1	5,3
Total	19	100,0

Table I13

I believe the content/skills I learned in this class will be useful:

	Frequency	Percent
Professionally (career related) and Personally (non-career related)	17	89,5
Only personally	2	10,5
Total	19	100,0

Appendix J

Semi-Structured focus group interview questions

Q1: Do you have any experience of flipped classroom prior to taking this subject? If yes, could you tell me about it?

All of the interviewees declared that they had no other experiences with FC method.

Q2: What are your general feelings about flipped classroom?

Student A: When I first met this method, I was a little bit confused because in my country we don't have technological opportunities like this in our schools. However, we were oriented about the e-learning system in our first week in the first term. Since we used it during the first term for homework exercises, I was able to get used to it quickly because, there was only extra videos about the grammar subjects before the activities. At first I thought that I wish all courses would be in this format because we are exchange students and Turkish is not our native language. For that reason, sometimes we could miss some points in the classes. But if all the courses would be in video format, we could go back and listen again and again when we don't understand. So I think Flipped classroom is a good method.

Student B: It's a good method because we can watch the videos any time we want. For example, sometimes we might feel bad or become sick and we cannot pay attention to the courses. In such a case, we can watch the video keep up with the rest of the class. On the other hand, we do the exercises in the classroom which is advantageous in terms of finding somebody to ask when we don't understand a question.

Student C: It's not boring as the case that the teachers lecture on the grammar rules in the class and they ask some questions about them. This is a routine lesson. However, there is something different with flipped classroom, like you feel that you are doing something. Using technology is also a motivation factor, which makes you feel more responsible.

Student D: Flipped classroom gives more responsibility to us and this made me feel a little bit stressed in the beginning. I thought that it was not fair to try to understand the grammar rules with a video and I was also worried about what if I had a question at some point. So, I didn't have positive impressions about this method at first but each following week I became more self-confident. In addition, I must admit that I asked for help from my classmates many times not to stay silent in the classroom exercises. After all, it forced me to study more than I did before and I'm happy with it now.

Student E: It is a good method for students because you aren't worried about what if I don't understand something. You have the chance to watch as many times as you want. You can take notes without missing anything and use them in the classroom activities. In this way, you can be more successful and the feeling of success makes you more motivated. Generally I feel positive about it.

Q3: *What do you think about the flipped classroom method for learning English grammar?*

Student A: It's very easy to follow the videos and do the exercises with our computers and as said before, I'm learning English in Turkey and my Turkish is much better than

English. So, flipped classroom has an important advantage for me since it provides the opportunity to watch by pausing and as many times as I like.

Student B: I think that grammar is important to be able to learn English. So, I need to learn grammar very well and this method made me feel relaxed since it provides a flexible environment.

Student C: I think that learning grammar is very important to be able to learn English but I also think it is boring because you learn many rules and not all the rules are consistent. For example, irregular verbs. So, it should be more engaging while learning grammar and flipped classroom made it more entertaining for me. For example; I watch the videos in the evenings in my room and do the questions. If I don't understand something give a break and watch it again or use internet for more information. The next day, I share what I learnt with my group in the classroom and that makes me feel good.

Student D: I've always had problems with languages both in my country and in Turkey. I still have difficulty at understanding Turkish from time to time. However, I studied more and managed to get grades above average from the English quiz. It was the highest one for me though. I think that it results from this method because I watched the videos many times and group members explained me the questions that I didn't understand during the classroom exercises. I also spent extra effort to keep up with the rest of the discussion group and I knew that teacher was not going to spend

much time on me by lecturing on the grammar rule for which he already recorded a video.

Student E: I think that grammar is important for learning English. But I usually forget those rules and be too lazy for reviewing them, because it takes much time to look up the books or some other resources. However, flipped classroom facilitates the process as you just log into your account and watch the related video. Videos are very practical.

Q4: Have you encountered any difficulties when you did the online tests and learned from online video clippings?

Student A: No, I haven't had any difficulties because our teacher taught us how to use the system for watching videos and doing exercises when we first came to this school.

Student B: No, I didn't. Everything was clear enough.

Student C: There hasn't been any problem.

Student D: I did but it was not about the video but my poor Turkish.

Student E: I didn't encounter any difficulty.

Q5: Do you think that flipped classroom could help you become an active learner*? Is there any example to give to support/not support your claims?

   *Active Learner was described to the students.

Student A: I can say that this is the first time I take responsibility to get prepared before the classes. Actually in my previous schools our teachers used to assign us mostly with readings and it was very boring. I never did them because the teachers

were already telling the subjects in the books in the class again. There were no discussions in the classes and when I didn't understand the subject, homework was so boring. But in this lessons, videos before the classes were not like homework. They were simple and engaging. So I feel myself more active in the classes. In addition, I feel safer because I know that I can reach the videos any time I want.

Student B: Yes, I think I can be an active learner because I feel responsible for watching the videos as I don't want to stay silent in the discussion groups. To be honest, we used to share the homework given and finish it quickly in my country. However, we do homework in the class in this method and I have to understand the subject before the class not to be embarrassed. So, I need to do everything consciously.

Student C: Yes, as I said before, I sometimes made more search on the internet and learnt detailed information about the subjects in the videos and solved more questions online. So, I think I went to class more prepared and, to realize that I could learn something by myself made me very happy.

Student D: I think the best example was my efforts. For the first time in my student life I tried to complete the assignments given appropriately and studied seriously out of the classroom. Additionally, I have always been a passive listener in the classes but I willingly participated in the discussions and engaged in the activities in flipped classroom method.

Student E: During the flipped classroom period I watched the videos and studied regularly before the classes because we were doing exercises related to the videos in the classroom. If I hadn't learnt the rules before, I wouldn't be able to give correct answers and discuss with my friends. So, I believe that flipped classroom helps you became an active student.

Q6: Could you tell me what learning skills you have developed during the flipped classroom experience?

Student A: Participating in the discussions is very motivating. I also learnt that note taking is very important and videos give me this chance easily. I motivate myself to watch the videos to be able to speak in the groups.

Student B: I realized that I can learn many things from the videos on websites like Youtube. There is no need for a teacher every time. I can do some things by myself.

Student C: I learnt that using technology is a practical way to reach the information. In addition, noticed that I learn better when I choose when to study. So, flipped classroom made me realize that I can learn independent of time, place and even the teacher. My self-confidence has increased.

Student D: I learnt how to search for information on the internet and to take notes while watching lesson videos.

Student E: I learnt that I can reach information by using technology easily. In addition, I noticed that I can learn something better by discussing with my classmates.

Q7: Could you tell me how you could transfer the learning skills that you have developed during the flipped classroom experience to other subjects?

Student A: There are no videos for the other lessons, I wish there would be. But I realized that I learnt better while discussing. So I started to ask more questions in the other classes.

Student B: I started to look for course videos about the courses that I didn't understand on Youtube.

Student C: I choose the best time for me to study and look for online resources, especially videos on the subject that I need to study. I also search for questions to ask and discuss in the classroom.

Student D: I can look for video lessons for the other classes on Youtube.

Student E: We, a small group of friends, started to tell each other what we understand from a lesson and strike a balance. Next we consult with the teacher about the disagreements. This is a good method I discovered through flipped classroom.

Q8: What do you like the most about flipped classroom?

Student A: The best thing about flipped classroom is to reach the information any time I like and choose the time I like to watch.

Student B: I liked the flexibility most.

Student C: I choose when to learn.

Student D: I can watch the videos as many times as I want.

Student E: I can easily find the information that I need for my lesson whenever I want.

It's like taking a private lesson.

Q9: What do you like the least about flipped classroom?

Student A: There is nothing I don't like.

Student B: There is nothing.

Student C: Everything was ok.

Student D: It's tiring.

Student E: There is nothing

Q10: If the flipped classroom activities will be conducted again, do you have any suggestions to make them maximize their learning outcomes?

Student A: There could be more questions after the videos.

Student B: More questions after the videos would be more helpful to prepare for the in-class exercises.

Student C: I would like to do more exercises after the videos and the teacher could provide similar web links like videos or online quizzes.

Student D: I have no other suggestions.

Student E: There could be more online exercises after the videos.

Q11: Do you have any other comments that you would like to give?

Student A: This method should be used for other lessons, too.

Student B: No other comments

Student C: Other lessons could use flipped classroom method

Student D: No, I don't have.

Student E: No, I don't have.