

**LET STUDENT LEARNING DRIVE THE CLASS: AN INVESTIGATION OF  
THE IMPACT OF FLIPPED LEARNING ON EFL STUDENTS' LANGUAGE  
SKILLS, DIGITAL LITERACY AND ATTITUDES TOWARD THE  
LEARNING ENVIRONMENT**

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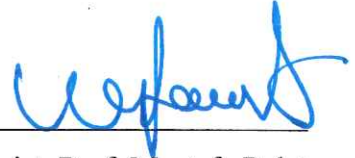
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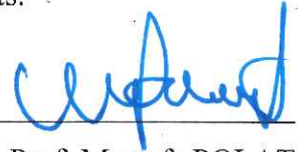
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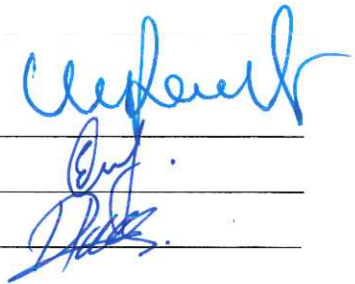
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## **ABSTRACT**

### **LET STUDENT LEARNING DRIVE THE CLASS: AN INVESTIGATION OF THE IMPACT OF FLIPPED LEARNING ON EFL STUDENTS' LANGUAGE SKILLS, DIGITAL LITERACY AND ATTITUDES TOWARD THE LEARNING ENVIRONMENT**

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Technology has been changing and challenging the ways educators teach and students learn languages all around the world. These shifts are driving massive changes in terms of content delivery. The preferences of digital natives with respect to mobile devices, instant access, collaborative and online learning have led to technological advancements that have infiltrated nearly every classroom. As a pedagogical approach harnessing the dynamic power of digital technologies, the flipped learning model has gained more prominence as an educational design in recent years. The broad promise of the model in language instruction is to liberate content and take learning beyond the confines of the classroom. The purpose of this study was to explore the perceptions of students towards flipped learning in an EFL setting. Twenty-six students participated in the study, which was conducted in an English preparatory program at a foundation university in Istanbul, Turkey. A mixed-method research design was employed, and data were collected via a flipped learning questionnaire, a pre-course& post-course digital literacy questionnaire, achievement tests, semi-structured interviews, and a teacher journal. The results indicate that flipped instruction enhanced learners' grammar through online content combined with language practice as well as encouraging engagement and interaction through

providing scaffolded learning opportunities. It was also revealed that the purposeful implementation of tools of information and communication technologies (ICT) can considerably improve students' digital literacy skills. This study offers insight into the impact of the model on self-paced learning with screencasts as well as instant feedback and provides recommendations for practitioners.

Keywords: Flipped Learning, Educational Technology, Student Perceptions, English Language Teaching, Digital Literacy



## ÖZ

ÖĞRENME MERKEZLİ SINIF: TERS YÜZ ÖĞRENMENİN YABANCI DİL OLARAK İNGİLİZCE ÖĞRENEN ÖĞRENCİLERİN DİL BECERİLERİ İLE DİJİTAL OKURYAZARLIK ÜZERİNDEKİ ETKİLERİNİN VE ÖĞRENME ORTAMINA YÖNELİK DAVRANIŞLARININ ARAŞTIRILMASI

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Teknoloji tüm dünyada eğitimcilerin öğretme, öğrencilerin ise öğrenme biçimlerini değiştirmekte ve bu biçimleri sorgulamalarına neden olmaktadır. Bu değişimler içerik sunma açısından beraberinde büyük değişimler getirmektedir. Dijital yerlilerin mobil cihazlar, anında erişim, işbirliğine dayalı ve çevrimiçi öğrenme yönündeki tercihleri teknolojik gelişmelerin neredeyse her sınıfa nüfuz etmesine yol açmaktadır. Dijital teknolojilerin dinamik gücünden faydalanan bir öğretim yöntemi olan tersyüz öğrenme modeli de son yıllarda bir öğretim tasarımı olarak öne çıkmaktadır. Bu modelin dil öğretimindeki vaadi içeriği özgürleştirme ve öğrenmeyi sınıf sınırlarının dışına taşımaktır. Bu çalışmada, ters yüz öğrenme yaklaşımının benimsenmiş olduğu bir sınıftaki öğrencilerin görüşlerinin ve davranışlarının incelenmesi amaçlanmıştır. Çalışmaya, İstanbul, Türkiye’de bulunan bir vakıf üniversitesinin İngilizce hazırlık programında öğretimine devam eden yirmi altı öğrenci katılmıştır. Karma yöntemli bir araştırma tasarımı benimsenmiş ve veriler tersyüz öğrenme ölçeği, ders-öncesi ve ders-sonrası dijital okuryazarlık ölçeği, yarı yapılandırılmış görüşmeler ve öğretmen günlüğü ile toplanmıştır. Sonuçlar tersyüz öğretim modelinin öğrenci bağlılığını ve etkileşimi öğrenme desteği sağlayan fırsatlar yoluyla geliştirmenin yanı sıra, dil alıştırmalarını içeren çevrimiçi içerik aracılığıyla öğrencilerin dilbilgisine katkı sağlamıştır. Çalışmada ayrıca bilgi ve iletişim teknolojileri araçlarının anlamlı bir

şekilde kullanılmasının öğrencilerin dijital okuryazarlık becerilerine önemli ölçüde katkı sağladığı da ortaya konmuştur. Bu araştırma tersyüz öğrenmenin ekran kaydetme araçlarıyla hazırlanan videolarla kendi kendine öğrenmenin etkisi ve anında geribildirim gibi konularda görüşler ortaya koymakta ve uygulayıcılar için bazı tavsiyelerde bulunmaktadır.

Anahtar Kelimeler: Tersyüz Öğrenme, Eğitim Teknolojisi, Öğrenci Görüşleri, İngilizce Öğretimi, Dijital Okuryazarlık





*To my parents, Dilara and Turan Tulay*



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## LIST OF ABBREVIATIONS

CALL	Computer-assisted Language Learning
CLT	Communicative Language Teaching
EFL	English as a Foreign Language
ELT	English Language Teaching
ESL	English as a Second Language
FLN	Flipped Learning Network
Gen Z	Generation Z
GBL	Game-based Learning
ICT	Information and Communication Technologies
L1	First Language
L2	Second Language
LMS	Learning Management System
TELL	Technology Enhanced Language Learning

# Chapter 1

## Introduction

Artificial intelligence, biometrics, blended learning, blockchain, the Internet of things, the knowledge economy, and wearables... These are only a few phrases added to the technological lexicon and embraced wholeheartedly by the Generation Z (Gen Z), which identifies individuals born in the late 1990s and early 2000s (Generation Z, n.d), as our world becomes increasingly turbulent and interconnected. The implications of emerging trends in diverse areas as Gen Z is moving toward adulthood are coming into focus. The current educational ecosystem is under constant pressure to meet the expectations of Gen Z and has given rise to interconnected learning, which has been triggered by the rapid evolution of technology and an ‘always on’ technological environment. In an era where technology is one of the generation-shaping considerations, major initiatives in education focus on equipping learners for the requirements of the twenty-first century by empowering them in the digital age.

In this technology-driven world learners and educators are flooded with enormous amounts of information due to the ongoing developments reshaping the future of humanity. Scholars from diverse academic backgrounds have been discussing the profound impact technology has on modern life while offering a broad picture of our age which is characterized by an information explosion. Yuval Noah Harari, the bestselling author and historian, addresses the unprecedented revolutions in information technology in his book *21 lessons for the 21st century* and comments:

If you know what you want in life, technology can help you get it. But if you don't know what you want in life, it will be all too easy for technology to shape your aims for you and take control of your life. Especially as technology gets better at understanding humans, you might increasingly find yourself serving it, instead of it serving you (Harari, 2018, p. 267).



Learners of the 21st century and their teachers constantly look for innovative ways to make sense of the world around them and the 'plugged in' generation poses great challenges as educators navigate increasingly complex issues in and outside of their teaching contexts. Both learners and educators take some steps to take advantage of tools that are becoming less of a novelty and more of a necessity to make sure that technology serves their goals.

Technology continues to provide powerful tools that can evolve classrooms and transform education in many ways while making it easier for teachers to embrace change and create instructional materials. The improvements in mobile technologies and the progress of social media have underpinned the process of getting globally connected and globally educated (Dudeny&Hockly, 2012). Fostering communication and integrating pedagogy and technology to advance learning plays a pivotal role in the field of education.

Educational technology can assist and empower educators significantly when employed meaningfully and it can be a liberating experience when implemented to promote student engagement. There are many approaches in which technology can be used in and beyond the classroom walls to engage students and facilitate lessons while shifting the focus to learning-centered environments. The Internet and digital innovations have paved the way for profound changes with respect to dynamic learning settings as well as instructional styles and tools in higher education. These changes have become commonplace in learning and teaching languages as well.

As emerging pedagogies and digital technologies continue to enter the English language classroom, a more systematic approach for the integration of such technologies is required to enhance the learning of 21st-century students. Innovation in educational methods is flourishing and technological developments continue to push towards new modes of instruction. How educators perceive the role of diverse technologies has considerably evolved and the terminology used has also changed over time; with today's focus on information and communication technologies (ICT) which have been based upon approaches such as computer-assisted language learning (CALL) and technology-enhanced language learning (TELL) (Dudeny&Hockly, 2012). Then, blended learning, which was referred as a buzzword in language teaching was considered a significant concept as its overall focus resonated with the pursuit of best practice; the attempt to determine a myriad of resources for course delivery to offer the most effective learning experience

(Sharma, 2010). Recent educational approaches within higher education institutions have utilized some forms of blended learning; where learners are offered a combination of traditional instruction in classrooms and are also required to complete a range of activities outside the class, presented through a variety of technological platforms such as a learning management system (LMS). The challenge of coming up with educational practices that will meet the needs of distinct groups of students with different digital skills and literacy form the basic tenet of blended learning design (Cronje, 2016).

There are a myriad of accommodating strategies and resources educators can refer to become versed in blended learning, which is not a new model (Bonk & Graham, 2012; Garrison & Vaughan, 2008), yet it has picked up steam lately with the usage of the term flipped classroom (Bergmann & Sams, 2012). Using class time for active learning offers a broad range of opportunities for student collaboration, formative feedback and engagement. Cambridge International (2018) surveyed around 20,000 teachers and students whose ages range from 12 to 19 from more than 100 countries, and it was reported that there has been a major surge of interest in the adoption of technology in schools all around the globe. The survey demonstrated that desktop computers, smartphones, interactive whiteboards and tablets were some of the tools that made their way into the classrooms (Cambridge International, 2018). The figures also remain quite high for more traditional methods, such as paper-based mode (90%) and whiteboards (73%). Technology's impact on education continues for students outside of the classroom as well. The survey showed that homework was completed using smartphones by 64% of these students in the study, and 65% preferred using their notebook computers to work on their assignments (Cambridge International, 2018). These recent data demonstrate the need to augment and restructure student learning to infuse engagement in and beyond the classroom by means of effective ways of integrating technology.

The flipped classroom, a blended learning model, has been implemented as a way of applying innovative methods in higher education for responding to the needs of diverse student populations. The New Media Consortium's Horizon Report suggested that flipped classroom is "part of a larger pedagogical movement that overlaps with blended learning, inquiry-based learning, and other instructional approaches and tools" centered around flexibility, activity and engagement (Johnson, Adams Becker, Estrada, & Freeman, 2014, p.36). The flipped approach is

characterized by organizing the educational content for self-directed study before coming to class so that classroom slots can be allocated to learning activities that empower every student, promote better learning and foster deeper understanding and communication. The model enables learners to practice language inside and outside the traditional walls of the school through an inverted learning paradigm (Bergmann & Sams, 2012).

Due to the increasing popularity of the approach, the design of flipped classroom activities is grounded by some theoretical underpinnings. Even though the nature of this approach enables educators to implement it in diverse ways, some learning theories and their components have a closer connection with the notion of the flipped classroom. Cognitive load theory and constructivism as a theory of active learning may provide a sound structure for using flipped learning considering the implications they might have on the current study.

Flipped learning approach incorporates a considerable amount of preparation for in-class activities. Therefore, pre-training on learning is an integral aspect of flipped learning in that it is aimed at reducing cognitive load on learners. Cognitive load is used to identify the burden on the working memory during instruction as knowledge is acquired, processes are automated, and/or information is moved into long-term memory (Sweller, 1994). Some studies have been conducted to gain insight into the impact of flipped learning on cognitive load. The consequences of receiving some instruction before class on the intrinsic cognitive load of learners were researched in an advanced high school chemistry class (Musallam, 2010). Intrinsic cognitive load describes the effect of the setting where learners are instructed on learning complicated subjects. Musallam's study indicated that there exists a significant relationship between mental effort and pre-training for students, demonstrating that when learning new material, students needed to use less cognitive abilities as a result of receiving pre-training.

Similar studies have also reported that managing the intrinsic cognitive load through pre-training may be an effective strategy (Ayers, 2006; Mayer, 2009). Thus, the implementation of flipped learning and a meticulous structuring process for pre-training on learning can contribute to establishing an effective mechanism for repurposing class time. When teachers build a bridge between what learners are

learning and their prior learning and build upon student schema to come up with new notions, cognitive load can be reduced (Sweller, 1994; Vygotsky, 1978). Reducing cognitive load can also be implemented by breaking down the materials into slighter units for acquiring information (Banas& Velez-Solic, 2013), which can enable the working memory to process more efficiently.

Many universities and colleges have implemented flipped learning, which has enabled students to spend valuable class-time with hands-on activities that often manifest the real-world applications of a subject area that students are practicing(Johnson et al., 2014). With regards to language teaching, maximizing the effectiveness of classroom time plays a cardinal role as genuine communication, real-time feedback and lively discussions spark engagement in a language learning setting. Even after the rise of communicative language teaching, which emerged around the 1970s to accord more prominence to communication skills in language classrooms, much class time is still used ineffectively due to a lecture-based approach (Lee, 2009).

According to Littlewood (1999), making choices, relating to others, and developing one's own voice in another language are among the capacities to be increased in the language learning process and learners may not be accustomed to an autonomous setting. The learning design of a flipped approach may mitigate the effects of such constraints (Lee & Wallace, 2017). In an era in which the role of educators matters more than ever, the commitment to ensure students are learning in and outside the traditional classroom has become more challenging.

In Project Tomorrow(2003), it was reported that more than half of the teachers in flipped classrooms (54%) expressed that the use of technology tools in their classrooms results in more self-directed students. The report also highlighted that teachers show a clearly more sophisticated understanding with respect to using technology within the learning process that can empower schools with new benchmarks to assess the efficacy of their own digital conversions. Given the enthusiasm and excitement for evolving classrooms, researching the impacts of flipped learning may shed light on the competencies for providing a solid foundation for paving the way for better learning and student outcomes.

Another report published by OECD (2018) titled ‘The Future of Education and Skills: Education 2030’, highlights the significance of taking responsibility as a key competency because concepts such as self-regulation, which involves self-control, self-efficacy, responsibility, problem-solving and adaptability lie at the heart of it. The report recognizes the fact that students will need to apply their skills in evolving circumstances and using recent knowledge and technological tools for interaction are among the broad range of skills required for having a positive impact on their surroundings.

Applying the information that has been acquired before the class time is integral to the guidelines of applying flipped learning, which is relevant to the second theory that underpins flipped learning. When learners are active constructors of knowledge rather than passively acquiring knowledge, constructivism as an active learning theory can be observed (Ben-Ari, 2001; Machanick, 2007). While constructivism centers around cognitive elements of learning, constructionism is relevant to the engagement of learners in doing and building, forming an integral part of the flipped classroom. Constructivist learning theory posits that learners build up knowledge by means of linking new ideas and experiences with the knowledge and experiences that are present to establish new or enhanced understanding (Bransford, Brown, & Cocking, 2000). Methodologies fostering active learning promote the essential type of cognitive work suggested for learning by constructivist learning theory.

The student-centered learning approach has been accorded more prominence and has universally revolutionized teaching methods in diverse settings of higher education. In the last 30 years, the notions of discovery and active learning have paved the way for more adaptable, student-centered classroom teaching strategies (Greitzer, 2002). The term ‘active learning’ has been extensively used in the world of education. Utilizing teaching methods that involve learners in the learning process rather than passive lecturing can be identified as active learning. Meyer and Jones (1993) suggested that when students are provided with the chances to engage in meaningful talking, listening, reading, writing and reflection processes, active learning may occur. Educators have been focusing on incorporating elements of active learning into their classes and they have come up with various interpretations of the notion. Prince (2004) suggested that coming up with a globally embraced

interpretation of active learning was not feasible because the description of the term differs greatly across diverse areas and defined active learning as “any instructional method that engages students in the learning process...whose core elements are student activity and engagement in the learning process” (p.1). Anderson and Krathwohl (2001) highlighted the fact that learners bring their broad range of knowledge, goals and experiences to the instructional settings in which they make sense of the information they encounter. This process of “making sense” could be applied to flipped learning in terms of moving away from passive recipients to being active agents in their own learning. Bonwell and Eison (1991) set out to establish a working definition of active learning as involving “students in doing things and thinking about the things they are doing” (p.19). They also outlined some general characteristics of active learning as follow:

- Students are involved in more than listening.
- Less emphasis is placed on transmitting information and more on developing students' skills.
- Greater emphasis is placed on students' exploration of their own attitudes and values (Bonwell&Eison, 1991, p. 19).

Kavanagh, Reidsema, McCredden, and Smith (2017) identified the flipped classroom as constructivist by its very definition. The authors highlighted that students are required to be active agents in their learning than being passive receivers of information and that the learners are the focal point of the system. The flipped classroom approach also focused on the components of active learning (Hung, 2014). Without the elements of active learning, the flipped classroom simply cannot be implemented successfully. In brief, flipped learning, which is aimed at promoting active learning in the classroom, is quite consistent with the principles of active learning theory.

The unprecedented innovations in technology are changing the educational approaches and educators are realizing their potential and try to glean insights from these transformations so that they can adopt, implement and hybridize diverse methodologies. This research study also set out to gain some perspective on whether the flipped classroom approach powers up learning experience in a foreign language classroom in a higher education setting.

## **1.1 Statement of the Problem**

An international spotlight is constantly shining on innovative ways to engage language learners in and outside the classroom. Learning and teaching English with effective methods have also been on the agenda of Turkish universities for many years. According to a baseline study (2015) titled ‘The State of English in Higher Education in Turkey’ jointly prepared by British Council and The Economic Policy Research Foundation (TEPAV), the main cause of Turkey’s ‘English deficit’ can be attributed to the problems in the school system and these may pose formidable challenges. It was also reported that it is almost impossible to reach the target level of B2 in the eight months of the preparatory school program and that learners are expected to achieve a lot of goals in that little time. The report addressed the theme of student motivation in learning English as the central problem.

In an era characterized by the power of knowledge and technology, it is of utmost importance that educational institutions recognize the need and implement their own versions of learning and teaching methods to address current issues. A brief review of the literature reveals that educators have been using recent approaches such as the flipped classroom to extend learning opportunities. The flipped classroom continues to maintain its place of prominence, and there has been an ongoing demand for conducting quantitative research and an examination of the impacts of the flipped classroom with respect to learner performance (Berrett, 2012; Bishop & Verleger, 2013).

Although the impacts of the flipped classroom have been investigated with high school chemistry students (Bergmann & Sams, 2009; Musallam, 2010), in economics classes (Lage & Platt, 2000), medical education (Prober & Heath, 2012), high school math classroom (Strohmyer, 2016), nutritional sciences (Gilboy & Pazzaglia, 2015) and in legal research (Lihosit & Larrington, 2013), not much research has been conducted regarding the student perceptions and the impacts of the flipped classroom approach on learner achievement in foreign language settings. The current gap in the literature that has been under-explored is the comparison of a traditional language classroom with a flipped one. Moreover, an insight into whether students perceive flipped classroom as leading to more meaningful communication, interaction and engagement in the classroom is still lacking.

The knowledge required for the knowledge economy demands a new educational vision which encompasses initiatives with respect to efficient utilization of ICT to acquire and apply the integral competencies of this era. There is also an increasing feeling of frustration that higher education institutions fail to advantage of the profound opportunities that could sustain innovation and support the rise of new paradigms suited to the escalating changes associated with transforming education.

ICT has been widely adopted in education, a trend which can be clearly observed in many other walks of life. Approaches such as computer-assisted language learning, blended learning, online learning, e-learning and flipped classroom have provided a brief view of what future classrooms may look like – settings in which self-paced learning is integrated with sophisticated ICT use that can empower both the teachers and the learners. Given the permanent and increasingly pivotal role of technology in education, the global and changing demands for higher education and a shifting of skill sets that learners of the 21st century need to master to thrive in the future world of employment, one proposal was to leverage the full potential of the flipped classroom. Flipped classroom, a model which is having a great influence on diverse disciplines around the world, is used to refer to a shift with respect to the owning the process of acquiring information from the teachers to the learners. The efficiency of the approach, the strategies of implementation, the tools that facilitate the process, the hurdles that are faced in unique contexts, and the role of the educators spawned an explosion of ideas to share best practice and resources available.

The present study is aimed at incorporating ICT in a meaningful way so that students can engage in content through pacing their own studies while improving language skills. A needs assessment study conducted in 2015 by the program where this study was conducted demonstrated that learners found writing and speaking skills challenging. Another point revealed was that learners needed to achieve mastery of a number of individual skills or micro-skills in reading, writing, listening, and speaking. Mastery of skills can be supported through learner-centered approaches such as the flipped classroom and communicative activities that are conducive to the ongoing endeavors to leverage the potential of learning tools in the classroom. Therefore, a gap in the literature regarding the issues focusing on students' perspectives on the flipped classroom approach in an EFL setting is



addressed in the study. In addition, how EFL learners perceive practicing grammar input through the approach is investigated.

## **1.2 Purpose of the Study**

Changes to instructional methods and customizing how students' needs are addressed yield alternative roles both for the learners and the teachers and compelling and fresh perspectives. Educators' experiences of flipping their classrooms to teach diverse subjects have afforded them fresh insights about how to promote learning and incorporate pre-class experiences and information in classroom activities. Educators' role in augmenting learning in the flipped classroom can be used as a lens for gaining a better understanding of a growth-oriented mindset. Teachers seek to develop implementable ideas in the context of flipped classrooms while expecting their students to independently engage with learning by means of vodcasts, screencasts or a variety of sets of guiding materials. Transforming learners from passive knowledge recipients to learners who self-manage the learning process challenges educators as well as curriculum designers. A multifaceted approach has helped better capture elements of flipped learning such as the flexible setup of the classroom, ensuring autonomous and collaborative learning, opportunities for interaction, dynamic assessment strategies and effective integration of technologies.

Within the area of any classroom, orchestrating the learners and the inner dynamics within a student group requires teachers and curriculum decision-makers to think and act differently. The community of researchers interested in the flipped learning model have been examining the relationships, collecting and describing data and reporting research that supports the use of flipped classroom. Adopting a research-based approach to flipped learning can act as a catalyst in identifying the impacts of the implementation on learning gains and exploring deeper constructs.

The main objective of this research is to contribute to the growing line of research on the flipped classroom approach in an EFL setting, raise the level of insight about this approach in foreign language instruction and provide a lens through which educators seeking change in their contexts can guide their own unique process of implementing and evaluating the whole experience. The study, which used a significant departure point from conventional approaches, is also aimed at contributing to the data to investigate how students perceive learning grammar in a

foreign language classroom by using the flipped classroom approach in an English preparatory program and to identify learners' perceptions and attitudes towards the flipped classroom as well as their perspectives on the contribution of ICT to learning and various dimensions of their digital literacies. The design and implementation of the flipped learning model including the challenges involved, materials and platforms used for content delivery are described in the present study as an attempt to demonstrate the stages that students and the teacher traversed when learning and teaching in detail.

### **1.3 Research Questions**

The study set out to address four research questions;

1. How do EFL learners perceive learning and practicing English grammar input through the flipped classroom approach?
2. Are there changes in learners' perspectives on learning with ICT and their digital literacy after implementing the flipped learning model?
3. Is there any significant difference in the scores of the students in the experimental and control groups after applying the flipped learning model in teaching grammar?
4. What are the experiences of the teacher regarding the implementation of the flipped classroom?

### **1.4 Significance of the Study**

Technology is upgrading all aspects of society including teaching and learning. Wrenching transformations are occurring on the social and political stages of the world. As the world is passing through turbulent times, advocates of educational philosophies, which incorporate finding solutions to real-life problems as well as constantly questioning truth and knowledge, pinpoint the significance of responsibility for discovering knowledge. A language classroom is considered one of the discovery settings in which learners can engage in their studies while contributing to the meaning-making process of a new language in an active manner. Active learning in a language classroom is required because without meaningful activities "classroom instruction in a discipline is like studying recipes without ever cooking anything" (Greeno, 1991, p. 177).

Teachers implementing flipped learning in their classrooms introduce their learners to hands-on experiences underpinned by active participation and collaboration. Strengthening active learning in the language classroom is achieved through delivering content outside the classroom commonly through video instruction. However, there are many other ways that a flipped classroom can be structured. The significance of in-class activities is recognized by the educators as without seeing the value of out-of-class sessions, the whole point of a flipped classroom approach may be lost.

A balanced combination of planning and reflection, as well as embracing research-based practices may help structure a solid base for flipped learning. Many teachers have provided insight on how to locate the challenges pertaining to flipped learning and offered a strong foundation upon which the practices which work in diverse contexts can be built. Flipping the classroom entails major changes in teaching practices or evaluation processes such as prioritizing formative feedback to assist learners in monitoring their own progress.

The major motivation of educators is mostly the needs of the students. Educators are trying to analyze the needs of the digital natives in their classes by maximizing the amount of quality information through experimenting with technologies. Language classrooms provide opportunities to leverage interest in technology use. As many other teacher-initiated implementations, this study, which was a baseline to undertake a significant project to capture the impacts of a flipped classroom in an EFL setting may provide a deeper understanding into some pedagogical practices that could work in foreign language settings. The study may also contribute to the body of work conducted in the flipped classroom approach as it investigated the perception of learners and their attitudes and engagement compared to traditional grammar input through an insider perspective.

## **1.5 Definitions**

**Computer-Assisted Language Learning (CALL):** “The search for and study of applications of the computer in language teaching and learning” (Levy, 1997, p.1).

**Blended Learning:** The combination of a number of pedagogic approaches, irrespective of the learning technology used (Oliver & Trigwell, 2005)

**Cognitive load theory:**“A universal set of instructional principles and evidence-based guidelines that offer the most efficient methods to design and deliver instructional environments in ways that best utilize the limited capacity of working memory”(Clark, Nguyen, & Sweller, 2006, p. 342).

**Digital Natives:** Individuals who are versed in the digital language of computers, video games and the Internet.(Prensky, 2001).

**Flipped Learning:**“A pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter” (Flipped Learning Network, FLN, 2014, para 1.).

**Intrinsic cognitive load:**“Work imposed on working memory as a result of the amount of element interactivity of the content to be learned”.(Clark et al. 2006, p.348).

**Screencast:**A computer screen output is digitally recorded, which usually involves audio narration (Richardson, 2009).

**Technology-enhanced language learning (TELL):** It refers to any sort of adoption of computers and digital media in language learning. (“What is CALL & TELL”, n.d.)

## **Chapter 2**

### **Literature Review**

#### **2.1 Overview of the Chapter**

The flipped classroom has been gaining popularity in diverse subject areas to accomplish the aim of pursuing a better understanding of deep changes in educational technology and becoming more attuned to profound modifications in curricula. Both researchers and practitioners have been publishing on the implementation, advantages, disadvantages of the approach as well as documenting comparative studies which are aimed at capturing the attitudes and perceptions of both learners and teachers towards the flipped classroom. In this chapter, a brief background of the flipped classroom, the implementation strategies and the challenges, technology integration and possible benefits with respect to flipped learning will be examined. The implications of the 21st century learning -, digital literacies, assessment strategies and gamifying aspects of the approach will also be outlined later in the chapter. Finally, flipped learning in language classrooms will be discussed considering the studies that have been conducted so far in the field.

#### **2.2 A Brief History of Flipped Classrooms**

Chemistry teachers from Colorado, US, Jonathan Bergmann and Aaron Sams, are usually considered as the leaders of flipped learning. The teachers felt distressed about the students who could not attend to their classes due to a number of reasons and they started to make use of video recordings and screencast in 2007 to record the content that they wanted to share with their students. This content was later transferred on a social networking site for students to access. Bergmann and Sams (2012) reported that after they implemented the flipped classroom approach, there was more interaction in class, and as class time offered more flexibility, students who fell behind could be supported individually. In 2012, Bergmann and Sams started the not-for-profit Flipped Learning Network™ (FLN) to support educators with the information, competencies, and resources to apply the flipped learning model in their

own diverse settings. Bergmann and Sams credit Maureen Lage, Glenn Platt and Michael Treglia's study (2000) titled 'Inverting the Classroom: A Gateway to creating an Inclusive Learning Environment' for initiating the method. The paper, published by the University of Miami-Ohio, set out to demonstrate the impact of the inverted classroom in economics education.

**2.2.1 The implementation strategies and the challenges.** Keeping abreast of recent developments in education is especially significant for educators who are committed to being changemakers in their teaching contexts. Teachers who have been trying to break the lecture-oriented model have been exponentially turning to blended learning models and flipped learning is one of these approaches which has garnered professional interest around the world. Blended learning approaches to language learning manifest themselves in the forms of flipped or inverted classrooms (Gruba, Don,& Monica, 2016). The flipped classroom has a variety of names, approaches and definitions. Bergmann and Sams (2012) note that terms such as blended learning, reverse instruction, inverted classroom, and 24/7 classroom can be used interchangeably.

This hybrid approach has been increasingly researched as well due to the need for looking for evidence-informed practice. Teachers who have used flipped learning report that they felt re-energized thanks to the interaction with students (Baker, 2012). 450 teachers were surveyed online in 2012 and the results demonstrated that teachers associate this method with improved learner achievement and attitudes and 66% of the teachers observed an improvement in their students' standardized test scores after they implemented a flipped classroom approach (ClassroomWindow& Flipped Learning Network, 2012).

The 'Growth in Flipped Learning' survey (Sophia & Flipped Learning Network, 2014), collected the responses of around 2360 teachers and the results demonstrated that 96% of teachers who have implemented flipped learning would recommend that approach. The teachers also noted English language learners, particularly benefit from flipped learning (Sophia & Flipped Learning Network, 2014). About 95% of the teachers who are applying the approach started as their own initiative, which is a clear sign of the enthusiasm of educators to keep up with current advancements in their field (Sophia & Flipped Learning Network, 2014).

Flipped classroom practices have been implemented in diverse disciplines such as dermatology education (Shi, Rana,& Burgin, 2018), anatomy education (Pickering

& Roberts, 2017), military training (Franciszkowicz, 2008), in industrial engineering (Toto & Nguyen, 2009), and aviation (Dusenbury& Olson, 2019). The approach has gained popularity amongst engineering educators and the findings of a review of 62 articles indicated a broad approval of the approach in many sub-fields of engineering (Karabulut, Cherrez,&Jahren, 2018). Flipped learning has also received considerable media attention. Washington Post (Strauss, 2012) referred to the model as one of the biggest trends in classroom teaching and The New York Times (Fitzpatrick, 2012) reported that learners are leaving brick and mortar schools. The Learning Network by the New York Times provided its subscribers with a roadmap to flip their classes using the content of the newspaper (Ojalvo&Doyne, 2011). Through its 'Teacher Network', Guardian held online discussions to enable educators worldwide to comment on the benefits, challenges and best practices of flipped classroom approach (Welham, 2014). The Wall Street Journal published an interview with the founder of Khan Academy, Salman Khan and highlighted the difference between a lecture and a classroom flip (Khan, 2011). Financial Times reported that business schools are implementing new methods such as flipped learning to keep up with the demands of their student population (Moules, 2015). The Telegraph used the term 'flip-thinking' and discussed that this method was the new buzz word in the U.S. (Pink, 2010).

Around 200 peer-reviewed research articles on flipped learning were published in 2017 and that amount of research is currently doubling every 16 months (Talbert, 2018). The flipped classroom approach, as all other educational ideas, stemmed from the needs of learners. Bergmann and Sams (2012) used a flipped classroom approach in 2007 when they recorded lectures for students to view out of the classroom so that they could work on homework in the classroom. The flipped learning model has since gained popularity in many university settings as well. In 2012, the not-for-profit Flipped Learning Network was initiated by the chemistry teachers, Sams and Bergmann to equip educators with the competencies and materials to effectively apply the model, referred to generally as flipped learning (Sherrow, Lang, & Corbett, 2016). According to Flipped Learning Network (2014), flipped learning is:

a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space and the resulting group space is transformed into a dynamic, interactive learning environment where the

educator guides students as they apply concepts and engage creatively in the subject matter(para.1).

The notions of engagement and dynamism in a flipped learning environment have encouraged educators around the world to start flipping their classes. The unprecedented technological advancements constantly revolutionize the landscape of learning and teaching, and blended learning trends such as flipping the classroom has been utilized to harness the power of innovation in the classroom.

As students embrace the ownership of their learning, the flipped classroom can assist educators in moving from instruction-driven mode to learner-centeredness (Hamdan,McKnight, Mcknight, &Arfstrom, 2013). Tucker, Wycoff,& Green (2017) discuss that students are the agents and owners of their own learning process in blended learning environments and that flipped classroom provides the students with the control mechanism of pacing their learning.

Blended learning is now ubiquitous in university courses across many disciplines and flipped learning is on the rise in many educational settings and is especially appropriate for the higher education settings for some reasons (Brewer&Movahedazarhouligh, 2018). The flipped classroom model is turning out to be progressively favorable at universities due to its way of rearranging face-to-face instruction for faculty and learners, resulting in a more well-organized and productive use of classroom opportunities (Johnson et al., 2014).

Shifting to the flipped classroom can be a compelling enterprise and specifying the principles of flipping plays a pivotal role in this process. According to the Flipped Learning Network (FLN) (2014), the terms flipped learning and flipped classroom cannot be used in an interchangeable way. The FLN makes a distinction by postulating that educators' initiatives must encompass the four pillars to be fully engaged in flipped learning. The four pillars of F-L-I-P™ defines the four components supporting student's engagement in flipped learning; which are flexible environment, learning culture, intentional content, and professional educator (Flipped Learning Network, 2014).

Chen, Wang, Kinshuk and Chen (2014) suggested that these four components are not sufficient for higher education and came up with another model, which was called 'FLIPPED'. This model was proposed by adding three new components; namely, 'Progressive Networking Activities, Engaging and Effective Learning



Experiences, and Diversified and Seamless Learning Platforms’(Chen et al., 2014, p. 2).

According to Moran and Young (2015), all methods, especially the ones which encompass digital technologies, must be carefully planned and implemented. The perspectives of the learners and educators showed that for a more well-organized and interconnected approach to flipping learning, a solid base of research-based practice is required (Moran& Young, 2015). Therefore, the researchers offered five questions to consider before deciding to flip any classroom. The questions are;

1. Are you modeling the flip for students?
2. Have you flipped more than once?
3. Are you choosing appropriate content?
4. Can students demonstrate what they’ve watched and learned?
5. Are you taking a proactive approach to classroom management?

(Moran & Young, 2015, pp.43-45).

Bergmann, one of the pioneers of flipped learning, note that “flipped learning is a gateway that leads toward some of the most powerful — but often the most difficult to implement — learning and teaching strategies out there” (Bergmann, 2015, para. 3). A Google search of the term flipped learning delivers around 32 million results as of August 2019. A great body of these results consist of how to implement it in a broad array of subject areas. Educators have been suggesting recipes to implement the flipped classroom approach in diverse subject areas. In the flipped classroom model, learners can choose the location where they receive instruction and study the content online and thereby are in control of the pace they progress through the steps. Moving from the role of the lecturer to facilitator requires a balanced combination of planning and discovery. Embracing a backward design requires “considering the learning activities (how to teach the content), developing assessments around the learning activities, then attempting to draw connections to the learning goals of the course” (Wiggins&McTighe, 2008, p.13). A careful consideration of the implications of both the flipped classroom and in-class activities on enhancing learning is integral to the whole planning stage.

Through an open invitation on a social media platform, Talbert (2017) gathered some responses from educators about why they were using flipped learning in their own contexts. Even though the respondents were teaching in diverse areas such as engineering, math, humanities and social sciences, they all highlighted that they

wanted more time in their classes to implement critical thinking and problem-solving. McLaughlin, White, Khanova, and Yuriev (2016) conducted research in two higher education settings and reported that elements such as time management, competencies, digital tools, and guidance are some major requisites for planning and implementing a flipped classroom. Professional development for teachers, student involvement, support from the administration, altering the use of digital tools throughout the model while pinpointing recent and emerging methodologies for enhancing the engagement learners and teachers were suggested as overall design considerations (McLaughlin et al., 2016).

In a flipped classroom, a considerable amount of instruction happens online to be able to use class time for practice and reinforcement tasks which are facilitated by the teacher. According to So and Bonk (2010), a clear integration between the face-to-face and online components is required to deliver content effectively, transfer knowledge and support collaboration. Senior (2010) suggested that rather than attempting to cover almost all content in class, teachers should consider pedagogical implications and embed digital tools in their instruction for a virtual extension of the classroom. Bransford et al. (2000) highlighted that “four perspectives on the design of learning environments—the degree to which they are student-centered, knowledge centered, assessment centered, and community centered—are important in designing these environments” (p.153).

The process of implementing a classroom facilitated by flipped learning will not necessarily revamp students’ learning. According to a study by Houston and Lin (2012), a flipped classroom may be effective if the videos are brief (around 20 minutes) and teachers should concisely review the relevant content before the classroom tasks are assigned to be prepared to respond to any questions and make sure that most of the learners have a good grasp of the related content. Kachka (2012) recommends that throughout the class tasks, the teacher can guide and facilitate the interaction between the students.

The literature demonstrates that the flipped classroom approach encompasses both benefits and challenges. A study conducted by Yılmaz (2017) showed that e-learning readiness is a significant instrument that affects satisfaction and motivation in a flipped learning environment. Therefore, it is necessary to specify students’ readiness to e-learning. Providing students with trainings which will assist them in terms of e-learning plays a key role in helping them master these skills. It is also

significant for learners to access and take advantage of online learning sources in order to ensure the effectiveness of flipped learning (Hao, 2016). Further issues of flipped classroom approach consist of learners thinking the classroom time is wasted as they might consider they fail to accomplish much in class and are expected to complete some tasks outside the class. Some other criticisms of flipped learning stem from its striking differences from the traditional mode of instruction. The ways learners were educated in K-12 settings and higher education differ substantially (Lape, Levy, Yong, Haushalter, Eddy, & Hankel, 2014; Strayer, 2012; Yong, Levy, & Lape, 2015). The pitfalls of flipped learning approach may be manifested when student enthusiasm fades. Not performing well in the classroom activities due to a lack of motivation to study before classes may mitigate the benefits of flipped learning (Sayeski, Hamilton-Jones, & Oh, 2015). According to Hwang, Lai and Wang (2015) encouraging students to control the pace of their learning at home is one of the primary components of a smooth flipped classroom approach. Smith (2013) demonstrated that learners usually associated studying the content outside the classroom with additional responsibility. Results of such studies emphasize that the flipped classroom can be both favourable and challenging.

Technical and technological challenges, including accessibility of the digital tools, and being competent in using the tech tools also may also bring about some issues in flipped learning. For instance, the videos lacking a good audio quality (He, Holton, Farkas, & Warschauer, 2016) adversely affected learners' performance. Another study by Giuliano and Moser (2016) found that when duration of the videos is long, student viewed less videos. Recognizing this particular challenge, Battaglia and Kaya (2015) and Mason, Shuman and Cook (2013) suggested that taking the majority of the learners' attention span, the videos should not exceed 20 minutes. Researchers have pointed to this challenge related to the videos (Zainuddin & Attaran, 2016; Zainuddin & Halili, 2016) and addressed video lectures with poor-quality may lead to undesirable consequence in terms of learning (e.g., He et al., 2016; Moraros, Islam, Yu, Banow, & Schindelka, 2015). Getting ready for the flipped classroom may be often time-consuming for the teacher as well. (Berrett, 2012; Enfield, 2013). Implementing a flipped classroom can be an overwhelming task; however, figuring out what kind of methodologies a particular student population responds to requires challenging the traditional methods. Some other challenges of the flipped classroom model were outlined as placing essential standards on the hardware facilities of

instruction and learning settings, the technical expertise and implementation of teachers and the involvement of students, modifications in the present content, the challenges of students' lack of adaptation to online learning and demanding course schedules for students, not having a convenient interactional platform and creating informative and engaging micro lectures for learners as well as monitoring students' ownership of the relevant content (Li, 2018).

**2.2.2 Technology integration in the flipped classroom.** Technology has become an indispensable instrument especially in higher education and can facilitate learning considerably in terms of presenting content and assessing achievement. As the major objective of higher education is to prepare learners for the future and the world beyond, wise integration of our evolving and powerful technology can act as a catalyst to infuse 21st century skills in classrooms in the era of the digital age. Traditional modes of instruction have supported learning for a long time and nowadays, simulations, remote laboratories, visualization technologies, games, virtual reality, digital libraries continue to augment the learning opportunities. With recent developments in instructional technology, institutions around have been personalizing instructional methods to cater to students' expectations, learning styles, and distinct backgrounds of abilities and expertise (Trilling & Fadel, 2009).

While educators keep abreast of technological developments, they also try to comprehend the educational needs of the current generation, referred to as Generation Z. To gain a better understanding of this generation, Pearson Education (2018) conducted a survey to explore attitudes, preferences, and behaviors around technology in education. The survey indicated that regardless of differences, Gen Z is mostly positive about the future of technology in education.

As technology is constantly changing, the methods and tools which are incorporated into language classrooms enable educators to expand their flipped learning repertoire. Bergmann and Sams (2012) note that one of the advantages of flipped classrooms is that "they speak the language of today's students" (p.20). Today's students show a lot of enthusiasm for making use of digital devices efficiently and are quite active users of social media. About 54% of Gen Z reported that technology can greatly enhance the college learning experience and commented on their social media habits (Pearson Education, 2018). About 55% of Gen Z say YouTube has contributed to their education, learning, and/or personal development in the past 12 months and video lectures are considered more engaging; which could

be related to some neurological research. Brain research suggests that any new stimulus is likely to disappear around 10 minutes, and therefore, learners are inclined to get distracted after 10 minutes they are exposed to new content. Learners might need a different stimulus, emotional variety, or a chance to avoid direct involvement and manage the learning process (Medina, 2008). One benefit, then, of using videos for instruction is that learners can divide direct instruction into more captivating elements of learning.

Even though technology has become ubiquitous, there is still some resistance, banning devices or technophobia that exist in higher education. Discussing the counterarguments toward technophobia, Davidson (2017) suggests that transformation in higher education for the twenty-first century does not mean throwing a lot of tech into the classroom, but to rethink higher education to make sure learners are digitally literate. Careful planning and implementation of the flipped classroom may help learners have a better grasp of recent technologies dominating our lives and exert more control over them.

The Internet has promoted learning with a variety of materials and tools that encourage them to conduct their own studies. The flipped learning environment provides students with the flexibility to control their pace of learning through using of electronic resources outside classes, and therefore class time could be used for interactive activities and thereby allowing students to be more active, engaged and enthusiastic (O'Flaherty & Phillips, 2015). Kavanagh et al. (2017) argue that technology can assist teachers in terms of providing content information. Adopting a flipped learning methodology can empower teachers in that they can personalize and differentiate instruction while engaging learners and monitoring learning. Enhancing the flipped model may require greater diversity; therefore, locating and trying out recent technologies in addition to using tools in an innovative manner is essential for instructors (McLaughlin et. al., 2016).

Gen Z welcomes digital age classrooms that are both technology-rich and rapidly evolving. However, certain principles must be applied to increase the effectiveness of learning with technology. Clark and Mayer (2016), highlighted some research-supported guidelines when educational videos are created. The principles focus on three ideas which suggest that people possess an auditory and visual channel; our working memory has a restricted potential and the information that can be processed simultaneously from each channel is limited and an active process is

required for learning (Clark and Mayer, 2016). Therefore, when using videos in a flipped classroom, new information should be introduced not to produce cognitive overload. Clark and Mayer (2016) suggested some practices to create effective vodcasts such as using visual and auditory modalities together, having contiguous graphics and supporting verbal information, keeping the presentation simple and uncluttered, using an informal and conversational style, segmenting and pre-training complex information, showing worked examples, personalizing the presentation, considering the length of the vodcasts, embedding questions in the vodcasts and increasing the longevity of the vodcasts. Even though videos are not an absolute necessity in a flipped learning environment, they may offer many advantages. Some major benefits of using instructional videos have been outlined as “allowing learners to control the pace of their learning, preparing them for the future as global citizens, allowing them to meet peers and educators worldwide to experience their culture, language, ideas, and shared experiences”(Cisco, 2011, p. 8).

In recent years, the literature on vodcast, podcasts and screencasts has been increasing. The use of video in flipped classrooms is accelerating rapidly and feedback from the students has been overwhelmingly positive (Winterbottom, 2007). Students’ reported that they were eager to learn through podcast recordings of class content and that they could use them for revision and getting ready for assessments (Copley, 2007); and a higher level of engagement (Synder, Paska,& Besozzi, 2014).

However, some potential drawbacks of using technology could be considered as well. While a great number of students are digital natives, some will still grapple with the challenges and may not to be able to navigate the maze of a flipped classroom with ease. Thus, instructors must provide comprehensive guidance and technical support (McGrath,Groessler, Fink, Reidsema,& Kavanagh, 2017). Executing a productive flipped course requires an efficient use of technology to cater to learner expectations and to attain the pedagogical objectives of the course.

Well thought-out introduction of digital tools into instruction can instill a sense of meaningful learning, which is considered one of the priorities in a flipped language classroom. When educators start using recent digital tools in their classrooms, they not only model the learning process for learners, but also gain new insights into teaching by observing their learners acquire knowledge. Integrating technology in an efficient way can connect the flipped classroom to a wider world of

learning, in which learners can be supported further to develop their 21st century skills.

**2.2.3 Possible benefits of the flipped classroom approach.** Prensky (2001) coined the term digital native to mention today's learners who have been surrounded by digital technologies since their birth and highlighted the fact that reaching these learners requires changes in attitude. Direct instruction is one of the reasons why today's students tune out (Prensky, 2010). Prensky points out to the fact that teachers are those who design original learning-creating experiences and a flipped classroom may assist educators in enabling learners to personalize their learning pathways. Students tend to learn progressively more from the sources outside the classroom thanks to online learning, flipped classrooms, MOOCs, and open resources (Cronje,2016). Bergmann and Sams (2012), who have promoted the flipped learning approach, suggested that the model transcends physical constraints and lets learners to revise content without any time and setting limits if they have access to the Internet. Bergmann and Sams(2012) also suggested that the flipped learning offers a personalized way of education.

A significant and growing body of research on active learning strategies supports the potential of innovative methods in boosting student learning and achievement (Prince, 2004).The Organisation for Economic Cooperation and Development (OECD) compiled innovative pedagogies and postulated that these approaches provide an expanded repertoire with which teachers can shape the relationships between teaching and learning and offer significant tools to inform their professional decisions (OECD, 2017) (see Figure 1).

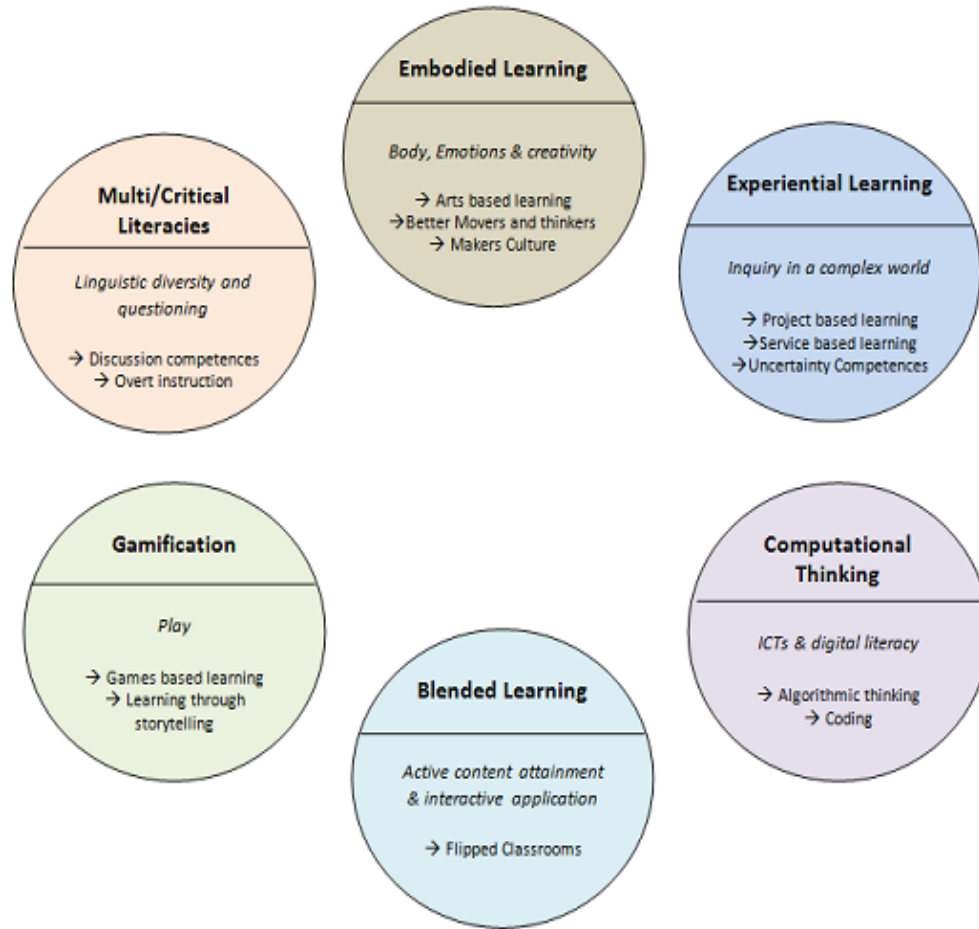


Figure 1. Innovative pedagogies for powerful learning - compilation of innovative pedagogies.

The significance of student engagement, especially at college level, is extensively embraced and there is a great deal of evidence to support the impact of student engagement on a broad range of learning outcomes. Astin (1993) reports that involving learners is considered a crucial aspect of accomplishment in higher education settings. Lage et al. (2000) suggested that learners usually favored the flipped classroom rather than traditional modes of instruction, and they enjoyed the flexibility of this approach. Murray, Koziniec and McGill (2015) investigated student views on flipped learning in college IT course and reported that learners are usually positive to the flipped classroom. Fulton (2012) provided the story of a U.S. high school where teachers implemented a flipped classroom approach to teaching math and achieved positive results.

The Flipped Learning and Democratic Education survey conducted at Teachers College, Columbia University was completed by 26 educators and 203 students who



participated in the study in the United States (Driscoll, 2012). About 80% of the students agreed that more constant and positive interactions occur with teachers and classmates throughout the lessons and reported that access to course materials and instruction was easier and they can control their pace of learning had more opportunities to show what they have learned; and learning was perceived as a more active process (Driscoll, 2012). About 70% of students noted that they tend to choose what learning tasks they perform; collaborative decision making with other students is adopted; they can employ some strategies for critical thinking and problem solving; and that the teacher is more inclined to accord prominence to what they are interested in, what kind of strengths and weaknesses they demonstrate (Driscoll, 2012). According to Driscoll (2012), these results propose the learning environment can be democratized by flipped learning

Another survey reported that 80% of teachers noticed some progress in their learners' perspectives on learning after they implemented the model and nearly 90 % of the teachers stated that there was an improvement in their job satisfaction too; (Classroom Window & Flipped Learning Network, 2012). Most flipped learning studies report that the experiences in the classroom with respect to active learning are rewarding, beneficial, and valuable (Critz & Knight, 2013; Fulton & Gonzalez, 2014; Gilboy, Heinerichs, Pazzaglia, 2015; Wilson, 2013). The experiences of active learning are linked to an improvement in positive attitudes toward the area that is being studied. In flipped classrooms, students experience active learning (Lai & Hwang, 2016) and are offered more opportunities to engage in activities promoting higher order thinking (Roehl, Reddy, & Shannon, 2013).

As Davies, Dean, and Ball (2013) stated, in flipped classrooms learners are transformed from passive receivers into active agents. Because online materials are exploited in many flipped classrooms to deliver instruction before a class, students can acquire information through overcoming physical constraints (He, Holton, Farkas, & Warschauer, 2016). Zainuddin and Attaran (2016) found that most college students developed a positive attitude towards flipped classrooms and preferred to proceed with this approach. Al-Zahrani (2015) highlighted the standards of flipped classroom tools and materials, especially video-recorded course content, and suggested that these tools should be thoroughly formulated to foster a increased level of student engagement and satisfaction. Another study by Ryan and Reid (2016)

reported that the duration of videos should be chosen to match the students' attention span to ensure more effective engagement.

Driven by the belief that traditional mode of instruction has failed in empowering 21st century learners, some studies have investigated the benefits of flipped learning at universities. Crouch and Mazur (2001) published the results of a study suggesting that the peer instruction strategy, an alternative way of flipped learning, yielded noteworthy learning outcomes when it is compared to learning in a traditional way. Undergraduate students from a university in China noted that the flipped classroom was integral to their motivation, perspectives, and commitment (Chien-Yuan & Cheng-Huan, 2018).

Flipped learning method boosts students' implementation of a variety of strategies for dealing with classroom challenges (Kyukim, Kim, Khera, Joan, 2014). Engineering students of a flipped classroom reported that they had a deeper grasp of course content and enhanced their skills (Warter-Perez & Dong, 2012). Papadopoulos and Roman (2010) suggested that learners advanced through content quicker, and grasped materials in greater depth, and supplementary elements of a course could be mastered without giving up the standards of the course. Abeysekera and Dawson (2015) propose that learning settings formed by the principles of flipped learning may meet student needs for being competent and autonomous, which results in higher degrees of intrinsic and extrinsic motivation. In a flipped classroom, learners make connections with prior knowledge as a result of the pre-class learning. Learners whose cognitive load is reduced can cooperate more efficiently during communicative activities. Danker (2015) suggested that cooperation among learners resulted in higher achievement, productivity and more engagement. Some of the benefits of flipped learning for students were identified by de Waard (2014) as the empowerment for self-paced learning, engaging in hands-on tasks, going through the content to have a better understanding whenever needed, acquiring some metacognitive strategies, locating the difficulties learners face when they encounter new notions and getting more help from the teachers.

Educators around the world continue to implement flipped learning in diverse disciplines. Recent studies continue to report positive learning experiences, higher student engagement, better performance by the learners, enhanced retention of the materials, and positive learner views, satisfaction with digital technology, control

over learning and flexibility (Sarkar, Ford,& Manzo, 2019; Fisher, LaFerriere,& Rixon, 2019).

### **2.3 21st Century Skills and the Flipped Classroom**

Educators try to cope with the challenge of teaching Generation Z as the skill set they need to develop is quite different from the ones the older generations had to acquire. Bransford et al. (2000) note that educational objectives for the present century differ greatly from the aims of past centuries.

Adapting to the 21st-century conditions was considered a priority and an initiative which started as the Partnership for 21st Century Skills (P21), was launched by public and private organizations in 2002 in the US to integrate the strength of technology with all elements of teaching and learning, was initiated. Accordingly, P21 designed the Framework for 21st Century Learning (P21, 2011), which highlights that the implementation of 21st century learning necessitates the improvement of basic academic subject knowledge and fostering understanding among all learners. The P21 community also highlighted that learners are required master there quisite skills such as critical thinking, problem solving, communication and collaboration for succeeding under the current global conditions.(P21, 2009).

There is an increasing awareness that effective learning in today's educational settings must be supported by 21st century skills and this paradigm requires teaching and learning them with a formative approach considering the magnitude of changes and flexibility in the digital age. Educators recognize the need to prepare their students to thrive in this information-driven and globally-networked world. Kivunja (2014) notes that learners must be taught to think critically and solve problems, communicate effectively, collaborate with peers and, create and innovate in an explicit way to make sure that they are well equipped with some core 21st century skills required to be job-ready in digital economy. Learners of the 21st century need "so-called soft skills, including strategies, methods, and tactics for successful communication and collaboration" which are essential to progress "in a world in flux" (Davidson, 2017). Davidson (2017) argues persuasively that having the students as the focus and active learning can restructure classrooms and suggests that new methods of integrating knowledge by means of reflection, challenges and active learning are essential for a shift in higher education. The increasingly powerful

technologies for communication, collaboration, and learning help accomplish the goals for education today learning plays a central role throughout life (Trilling & Fadel, 2009).

In foreign language classrooms, educators are embedding 21st century skills into the curricula as there is a universal tendency to move beyond language and integrate language skills with the skill set required after college. Proficiency in critical thinking, problem solving, communication, collaboration through being digitally literate are appreciated in language classrooms. Goodwin and Miller's (2013) research suggests that “the lack of hard scientific evidence doesn't mean teachers should not flip their classroom; indeed, if we only implemented strategies supported by decades of research, we'd never try anything new” (p. 78). The researchers highlighted that as an increase in terms of between learners and teachers, real-time feedback, student engagement and controlling the pace of learning are integral parts of flipped classrooms, this approach can be beneficial to 21st century learner (Goodwin and Miller, 2013).

**2.3.1 Digital literacies.** In the Knowledge Age, it's hard to think of anything we do nowadays, from getting organized, working on collaborative projects or learning to socializing with friends, that is not somehow mediated through digital technologies. The sophistication of technology continually leads to new affordances for learners. A multitude of students are equipped with the ability of making meanings by employing digital technologies and in digital settings when they enter educational environments (Yamada-Rice, 2011).

An increasing number of people have a presence in social networking sites from an early age. The linguist David Crystal suggests that digital media results in a new ‘variety’ of language he calls ‘netspeak’ – a kind of language ‘displaying features that are unique to the Internet... arising out of its character as a medium’ (Crystal, 2001, p. 18). Surrounded by digital media and media choices, ‘netspeak’ is becoming increasingly ubiquitous among digital natives.

As global connectivity soars, tech-tuned learners of the 21st century become more versed using digital technologies. Rosen and Nelson (2008) identify a generation of learners well-versed in using collaborative technologies to participate in the World Wide Web as creators rather than consumers. These students are attracted to group activity, seeking interaction within thriving online communities of

generative individuals. Thus, educators should be attuned to some implications for this generation. Although Gen Z is tech-savvy and very comfortable with using digital tools, they still need to be guided in manipulating these effective tools to guide complicated learning and creation activities. As Bylin (2009) notes digital natives are very different from one another and they do not possess the same characteristics in terms of access to digital technologies, literacy skills, and participation within their community. Numerous works have attempted to explain the concept of digital natives. Trilling & Fadel (2009) point out to the differences between generations and say that digital natives, who are surrounded with digital technologies, differ considerably from the digital immigrants who acquired technological competencies later in their lives.

ICT play a pivotal role in most aspects of contemporary society. With our extensive use of digital and online media, interacting modes with these types of communication paves the way for an immense impact on our literacy and learning. The increasing pervasiveness of digital literacies in and beyond the educational contexts have influenced definitions how critical literacies are defined and taught, and the engagement in digital literacies is shifting rapidly. 21st century learners and teachers are becoming increasingly aware that digital literacies cannot be confined to an area where they are only about mastering the technical aspects of digital tools. Developing digital literacies involves flexibility, adaptation and managing social relationships in a world that requires innovative, original and self-directed problem-solving.

Ng (2012a) suggests that the ability of embracing ICT by digital natives in especially using mobile devices and social media demonstrates that they have become digitally literate up to certain point. This level can vary from very simple creations to multimedia content production. According to Jones and Hafner (2012), the term digital literacies is used to identify the practices of communicating, relating, thinking and 'being' associated with digital media. This definition is broader in the sense that it highlights how the world is perceived through mediation. Another definition of digital literacy has been suggested by Hague & Payton (2010) which highlights the significance of accessing to a broad range of digital technologies for creation, collaboration and communication.

This definition demonstrates the fact that users can shape tools which are at their disposal to move beyond the hype and buzz surrounding digital literacy. Digital

literacy is a concept that can build up in cases where structures for learning in and beyond the educational settings are constituted right at various stages. In a comprehensive guide prepared by Jisc (2014), a not-for-profit, UK-based organization, it is suggested that digital literacies are bound to transform gradually and further claimed that being digitally literate encompasses a richer set of digital behaviors in addition to IT skills and that they are academic and professional practices which change over time.

Dudeney and Hockly (2016) also state that although the terminology may vary around the world, the idea is the same: digital literacy is used to identify the notion of “understanding – and making the best use of – the current technology toolset available to each individual” and further explain that “knowing how to use Facebook is a skill; knowing how to use it to build a community of like-minded individuals and to use that community for professional and personal development is a literacy. Herein lies the difference” (p.117). This specific example can be a blueprint for educators using different practices in their classes to act as a catalyst to advance learning and teaching.

Digital media create a staggering range of opportunities for us, which offer new ways to create information and knowledge, to express ourselves, to contact with others and form relationships, and to gain better understanding of our potential as individuals (Jones & Hafner, 2012). Using the expanding instruments of ICT power tools for acquiring knowledge is becoming increasingly conducive to learning as digital literacies are breaking down boundaries which could impede learning and teaching. In most cases, these literacies are integral to the education of all young people as they traverse the formal education. No matter how technology-driven our educational systems are, 78% of Gen Z think their teachers are ‘very’ or ‘extremely’ important to their learning and development (Pearson Education, 2018). It is recognized increasingly that in dealing with the digital literacy skills of learners and the evolution of recent methods of pedagogy, educators need to gain some perspective on the 21st century skills and the needs of their learners.

In this study which set out to extend learning opportunities beyond the classroom by means of implementing a flipped classroom approach, the digital literacy model developed by Ng (2012b) was used. According to this framework, digital literacy is the outcome of three interconnected components that focus on the

technical, cognitive and social-emotional elements of digital literacy. How these aspects are connected is demonstrated in Figure 2.

Dudeny&Hockly (2012) discuss some implications of digital literacy in English language classrooms and suggest that the teacher can assist learners in developing these literacies as they acquire English language skills and that this can be achieved through incorporating a range of practical activities based on an array of technologies. Implementing technological tools as the servant of flipped learning can empower learners in terms of digital literacy as they may ‘reap what they have sown’ as a result of experimenting with tools and undertaking new tasks.

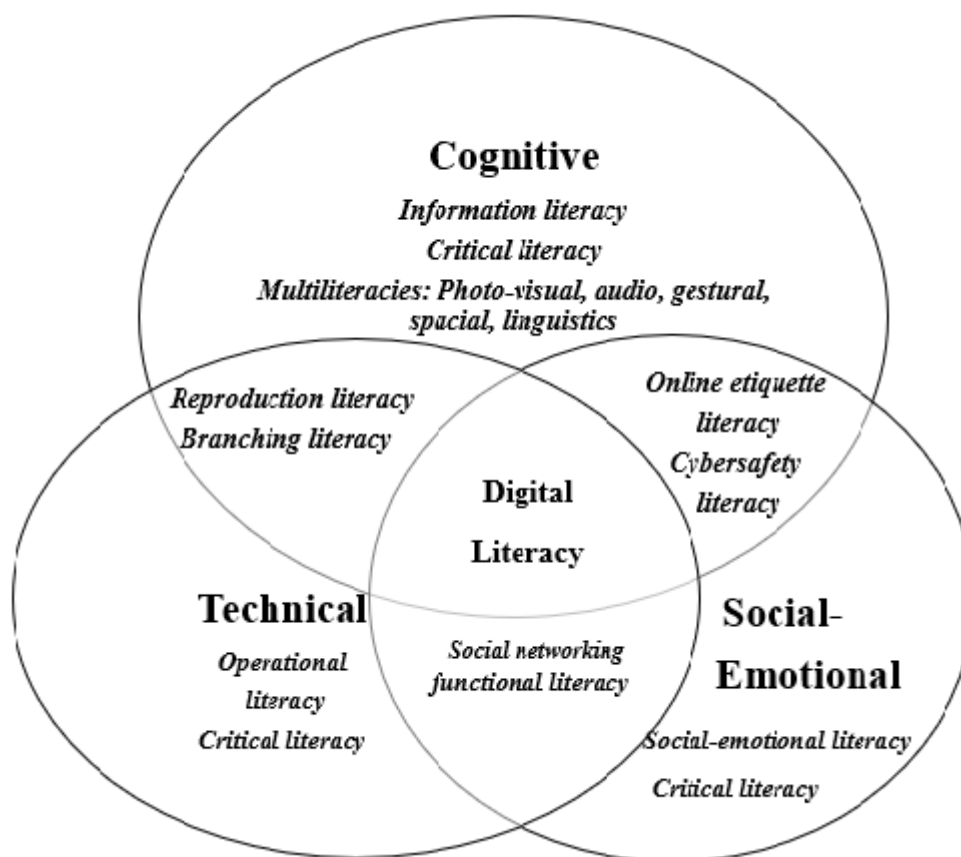


Figure 2. Digital Literacy Model (Ng, 2012)

**2.3.2 Assessment strategies.** Flipped learning environment changes teacher-student dynamics exponentially. One of these dynamics is observed in the assessment practices. Formative and summative assessments can be interspersed throughout the flipped classroom to maximize the preparedness of students. Formative assessment is a strong means of contributing to the success of a flipped classroom. One of the four pillars of Flipped Learning identified the role of

formative assessment in the Professional Educator pillar where the role of continuous formative assessment during class time is prioritized (Flipped Learning Network, 2014). Bergmann and Sams (2012) suggest that formative assessment throughout the class enables the teacher to interact more with students.

Technological tools used in this classroom environment can facilitate giving feedback about students' thinking and revising their work. Bergmann (2014) used the term mastery checks to highlight that each student is expected to show mastery of a subject and is provided feedback accordingly. Embedding quiz questions in vodcasts is one of the assessment methods in flipped learning. These questions are graded, and students receive immediate feedback. These types of questions decrease inattention and making learners more active and involving them in the material. Students answering embedded quiz questions also demonstrate a higher level of retention of the content (Schacter&Szpunar, 2015). In this research study, EDpuzzle was one of the tools aimed at assessing learners in a formative way as it enables the teachers to trim the videos based on the learning outcomes and embed a variety of quizzes. Other formative assessment tools used in the study such as Google Forms also helped the researcher to calibrate to meet individual learner needs.

As the instruction moves outside the classroom, the instructor can integrate more formative assessment into the learning setting. Roehling (2018) listed some of the benefits of formative assessment tools in flipped learning as “the group work, class discussions, peer teaching, and projects,” and argued that because these “are all a part of the active learning experience and can teach students about themselves, others, and the world around them, outcomes that cannot be learned by lecture alone” (p. 132). The flipped classroom offers more opportunities for assessing formatively and feedback enabling learners and teachers to evaluate whether key content is mastered as the course continues. Online quizzes before class can be a diagnostic tool and allow the facilitator to adjust the activities to be completed in class and instructional videos can be supplemented accordingly.

**2.3.3 Gamifying the flipped classroom.** Game-based learning (GBL) is one of the methods in which learner-centered pedagogy can be applied in the classroom in order to engage and motivate learners. There is a myriad of different ways of enriching the classroom and one of them is gamification. Much of the debate surrounding gamification is about the problematic definition of a game. Kapp (2012)



defines gamification as “a careful and considered application of game thinking to solve problems and encouraging learning using all the elements of games that are appropriate” (pp.15-16). Game-mediated L2 environments can be learning-centered and rich in terms of linguistic input. To promote active learning and student engagement, game-based activities can be incorporated into language classes. According to the pioneers of flipped learning, learning activities that incorporate gamification may become a significant element of flipped classroom settings (Bergmann & Sams, 2012).

Holistic, problem-based environments fostering active learning and real collaboration, as well as offering motivating challenges and instant feedback can be attained through game-based learning (Chen & Yeh, 2019). The results of another gamification study suggest that “gamified learning interventions have a larger impact on students who are intrinsically motivated” (Buckley & Doyle, 2014). A meta-analysis study argued that there is evidence that gamification design has significantly increased student achievement and implementation is suitable for all lessons – not only technology-oriented classes. (Yıldırım & Şen, 2019).

In many flipped classrooms, games can often stimulate interest and engagement, which leads to spending more time on a learning task. Wouters, van Nimwegen, van Oostendorp, and van der Spek (2013) demonstrates that games may have a positive effect on learning. Other studies suggest that games which are designed with objectives and are well-suited to specific learning gains and tend to have a positive effect on measured learning (Tobias, Fletcher, & Wind, 2014). In a flipped classroom, this impact may stem from the fact that spending time on learning with formative feedback through in-class and outside of class games played either individually or collaboratively, seems to help achieve the learning outcomes while engaging learners.

Recent applications including ‘Kahoot’ can facilitate in-class assessment for learners and teachers (Graney, 2018). Kahoot and other tools such as ‘Quizizz’, ‘Quizalize’ can be played individually or collaboratively in a classroom or can be assigned as a homework quiz using the mobile application. Such resources could extend learning opportunities and provide immediate feedback to the students and teachers, which could assist the designers of the flipped learning environments to consider further steps to be taken to encourage their students to thrive and adopt a growth-oriented mindset.

## 2.4 Flipped Learning in Language Classrooms

The recent advances in technology have made a broad range of web-based resources conducive to the integration of a flipped learning for teaching foreign languages. Bergmann (2012) believes that flipping a class can be done in customized ways through contextualizing and that distinct subject areas look different when flipped learning is implemented. This is also undeniable for the language classroom. According to Roehling (2017), the flipped classroom is an exquisite setting for students trying to acquire discipline-specific skills. The languages are an example of a discipline requiring diverse skills as there is a strong emphasis on skills-based learning goals for which class time is utilized extensively. Therefore, the classroom can be an environment where students practice diverse skills and receive immediate feedback from their peers and instructor. However, not many flipped learning studies focusing on L2 classrooms have been conducted (Basal, 2015; Bauer-Ramazani et al., 2016; Hung, 2015).

Digging deeper into the well-suited technologies for language learning objectives that arise from the needs of the students may provide significant insights for teachers (Trinder, 2017). Marshall and DeCapua (2013) highlighted that in traditional classrooms, English language learners engage in the lower levels of Bloom's Taxonomy--understanding and remembering--as they try to keep up with the content delivery. In the flipped classroom, there is a huge potential to enable struggling learners to access more opportunities to comprehend the content and enhance their skills before class.

The rapid advance of technology has extended learning opportunities and leveraging a wide range of technology tools and resources has become a way of empowering language learners. As mobile devices become indispensable, especially smartphones, mobile apps that are aimed at supporting language learning are increasing exponentially (Hockly, 2015). These devices are extensively used in flipped classrooms as well. With the proliferation of mobile Internet-enabled devices, learners are increasingly exposed to English in informal settings (Trinder, 2017).

The nature of language classrooms also enables educators to enrich a flipped classroom with gamification elements. A collective approach incorporating game-based learning into relevant classroom content to gamify the in-class activities of

flipped language classrooms, proved to be effective for improving student engagement (Hung, 2018).

Another study demonstrated that flipped learning helps establish an interactive setting where EFL learners become active participants to learn collaboratively (Yu & Wang 2016). The study of Lee & Wallace (2017) indicated that learners who received flipped instruction achieved higher average grades in their three final tasks than the group who received traditional instruction. The theory-based flipped instruction using extensive online interaction encouraged the participants to learn English idioms and motivated them in the activities, helping them to be well-versed in using the idioms for classroom activities that include interaction and class discussion (Chen Hsieh, Wu, & Marek, 2016).

In a systematic review of the approach in English language teaching, it was found that the most commonly mentioned advantage of flipped classroom was enhancing student engagement (Turan&Akdag-Cimen, 2019). Conducting a comprehensive literature review, the researchers called for further research on the effect of the flipped learning on EFL learners' grammar knowledge as well (Turan&Akdag-Cimen, 2019). The present study attempts to investigate this particular area; the impact of the flipped classroom on EFL learners' grammar competence.

Some recent implementations of flipped learning in EFL classes have proved to be successful. The results of these studies have shown the theory-based flipped instruction enhanced the participants' motivation; flipped learning was conducive to achieving the learning gains of the class (Chen Hsieh et al., 2016); the approach expanded the limited classroom learning time, made students learn in an immersive, supportive, constructive and participatory environment (Wang, Chen, Tai, & Zhang, 2019); and that flipped learning helped differentiate instruction to meet the needs of English learners (Carhill-Poza, 2019).

Further studies highlighted that the use of an assessment-centered tool for interactive videos and cloud-based tools for real-time collaboration assisted in creating scaffolded learning experience, sharing culture, and opportunities for peer instruction for students in the flipped classroom (Zou & Xie, 2017) and that students' control over learning in a flipped classroom contributed to their metacognitive strategies (Shih & Huang, 2019). Another study conducted in an EFL setting demonstrated that flipped learning assist learners in improving their L2 speaking and

listening may contribute to engagement with materials and activities outside of class (Amiryousefi, 2017).

Ekmekci (2017) investigated the effects of the flipped learning on foreign language learners' writing skills and this research also yielded results in favor of the approach in terms of enhancing writing skills. Melendez & Isa (2017) reported a high improvement in B1 level learners' English grammar levels after an implementation of flipped classroom. Another study by Zainuddin&Perera (2017) highlighted that flipping the EFL classroom resulted in more student engagement and peer collaboration. Choe&Seong (2016) studied the effects of flipped classroom on language learners' preparedness levels and reported largely positive outcomes.

Some studies have been aimed at gaining a better understanding of the flipped approach to learning grammar. Webb and Doman (2016) conducted a study and found that gains on actual achievement were higher in the experimental group. Mo and Mao (2017) investigated the effects of flipped classroom on English reading ability and reported favorable outcomes. An experimental study by Huang and Hong (2016) revealed that high school English learners' ICT skills and reading comprehension improved significantly in a flipped classroom. Golonka, Bowles, Frank, Richardson, and Freynik (2014) conducted an extensive review of more than 350 studies performed to gauge the effectiveness of flipped learning and the result of the review showed that there was moderate support in terms of the positive effects of technology on motivation and feedback in flipped learning.

The current findings add to a growing body of literature on the effectiveness of implementing flipped learning in EFL/ESL contexts. The flipped language classroom may open up new possibilities for technology integration, scaffolding, higher level cognitive skills and using the target language through collaborative learning experiences.

Abeysekera and Dawson (2015) suggested that the flipped learning might extend the opportunities to manage cognitive load, which may result in improved learning. They propose that cognitive load can be reduced by using pre-recorded lectures as learners can adopt self-paced learning in a flipped classroom environment. Another proposition by the authors is that flipped learning may offer more opportunities to cater for diversity in terms of the expertise of students, thereby facilitating a more convenient way of managing cognitive load.

Cognitive load theory posits that when learners encounter recent, complicated subject areas, the challenge those learners experience performing in the new setting stems from the intricacies of the recent material rather than a lack of established and general cognitive strategies (Sweller, Ayres, & Kalyuga, 2011). Therefore, adopting a flipping approach to language learning, a process characterized by a considerable amount of new materials on an ongoing basis, may contribute to the reduction of cognitive load.

Kirschner, Sweller and Clark (2006) posited that although unguided environments are claimed to assist learners to make meaning of the learning materials, it is suggested cognitive load theory that a heavy working memory load that impedes learning may result from exploring a highly complex environment in a free manner. When learners, particularly the novice ones are supported through in-class activities following the flipped environment, their schemas can be activated to integrate the new information with their prior knowledge.

Higher cognitive load is experienced by ESL/EFL students than their counterparts as a result of variations required in terms of culture and language and the lack of comfort that arises (Miller & Endo, 2004). Consequently, when learners attend their language classes, some of their working memory slots can already be occupied, which may lead instructors to deal with students with fewer available slots for learning. Being aware of these cognitive intricacies for learners assists instructors to spot the significance of reducing the cognitive load of the instructional content (Mehring & Leis, 2018). Clark and Mayer (2016) built a bridge between teaching basic information before the class through vodcasts and reducing cognitive load in the classroom and argued that the active learning activities can be fostered a result of instruction.

When the basic tenets of the cognitive load theory are considered in accordance with the planning and structuring of the flipped classroom, it can improve instructional activities, which is an important variable in the complex classroom environment. As the pace of learning can be controlled and time can be devoted to study certain skills when students feel ready, cognitive load is lowered (Wagner-Loera, 2018). In an EFL setting, reducing the cognitive load of learners could result in a classroom where more communication is achieved. Hence, the EFL classroom in

which flipped learning is employed could be designed around a more communicative learning environment.

**2.4.1 Approaches to teaching grammar.** As Swan argued (2005), the associations people have with the word grammar are mostly negative: they either associate it with classroom analyses of different parts of speech, or large dusty books which include a great deal of expert vocabulary or a compilation that comprises prescriptions. The role of grammar instruction has always been a debatable issue in the language classroom. Therefore, the methods and approaches used for grammar teaching in EFL settings encompass a variety of perspectives to be discussed further.

Even though there have been arguments for and against incorporating grammar into language teaching, many language teachers are convinced that learners of English must keep grammar in their arsenal of tools for making sense of the world around them. Over the past few decades, classroom instruction has shifted from an emphasis on language forms to using language within contexts in which communication matters more. Scheffler (2015) states that if learners are to become competent L2 users, classroom time should be exploited effectively, and the cognitive learning load should be reduced by focusing more on grammatical systems rather than lists of lexical phrases. Scrivener (2003) argues that “learning is a messy business” and that learners can acquire grammatical competence through “noticing the item, understanding the form of an item, trying things out in a safe environment and using the language when speaking and writing” (p.2).

Robinson (1996) suggested that explicit instruction was more effective in terms of acquiring basic rules, but contrary to what he predicted, implicit instruction did not prove to be more effective for learning complex rules. Spada and Tomita’s (2010) meta-analysis demonstrated that explicit instruction is more effective than implicit instruction for both simple and complex English grammar structures.

When teaching English grammar, educators struggle to both focus on form and meaning as they are equally significant in terms of gaining communicative competence. Thornbury (1999) highlights that learning can be enhanced when students learn the forms correctly and when the learner’s attention is directed to elements of the grammatical system. Thornbury’s suggestion for both focusing on form and awareness-raising can be achieved through activities geared to the needs of learners to improve their communicative competence. This competence can be best

accomplished by means of communicating and making meanings; grammar serves this purpose and the teacher designs environments for authentic language use where grammar is one of the resources.

A teacher may switch the grammar approach adopted depending on factors such as the learning outcomes, time limitations, students' strengths and areas for improvement, etc. In her article which is based on inductive and deductive approaches to teaching grammar, Gollin (1998) proposed two approaches for different contexts and suggested that a teacher can either guide the student to work the rule themselves when providing feedback on errors, which is an example inductive approach or if time is limited or the student has difficulty in working out the rule, the teacher may resort to a deductive approach.

Nunan (1998) suggested some comprehensive strategies to facilitate grammar instruction which can be applied to a flipped learning environment as well. The strategies for grammar instruction were implemented in the present study to facilitate the flipped learning model. "Exposed learners to authentic samples of language, so that the grammatical features being taught are encountered in a range of different linguistic and experiential contexts and opportunities for recycling of language forms" were extensively used throughout the study (Nunan, 1998, p. 108).

The principle behind embracing a flipped approach to grammar instruction is based on the premise that learners need more meaningful and authentic language use when they attend an EFL class. The above suggestions for grammar instruction were used in this study to leverage the potential of flipped learning. In this study, students were asked to study the grammar content before classes so that they could be given more opportunities to explore grammar in context when they arrived in class. Otherwise, as Nunan (1998) argued understanding how and why alternative forms are used to express different communicative meanings can be challenging. Throughout the flipped classroom implementation learners were encouraged to use grammar they had studied to communicate meaning through in-class activities. Previous research into grammar teaching have reported that a balance can be kept between explicit and implicit instruction to ensure learners can cope with complex forms and perform well in terms of ability to use these complex forms. A flipped classroom environment can offer a balance in that the teacher implementing the approach can align the approaches with the learning outcomes.

## Chapter 3

### Methodology

In this chapter, the design of the research, research questions, setting and participants, procedures used for data collection and data analysis instruments, data collection instruments, reliability, validity and some limitations identified throughout the study will be discussed.

#### 3.1 Research Design

This study was carried out as small-scale classroom-based research. Nunan (2005) stated that the rapid evolution of information technology and the development of virtual classrooms challenged the notion of the classroom as a setting where people gather. The design of this research also challenges this notion of the classroom in that the flipped learning environment both extends and complements the concept of traditional classroom. To achieve the objective of this research and answer the research questions, a mixed methods research design was used to collect both quantitative and qualitative data (see Figure 3). Creswell (2014) defined mixed-methods design as involving both qualitative and quantitative data which are integrated to gain a deeper insight into the research problem.

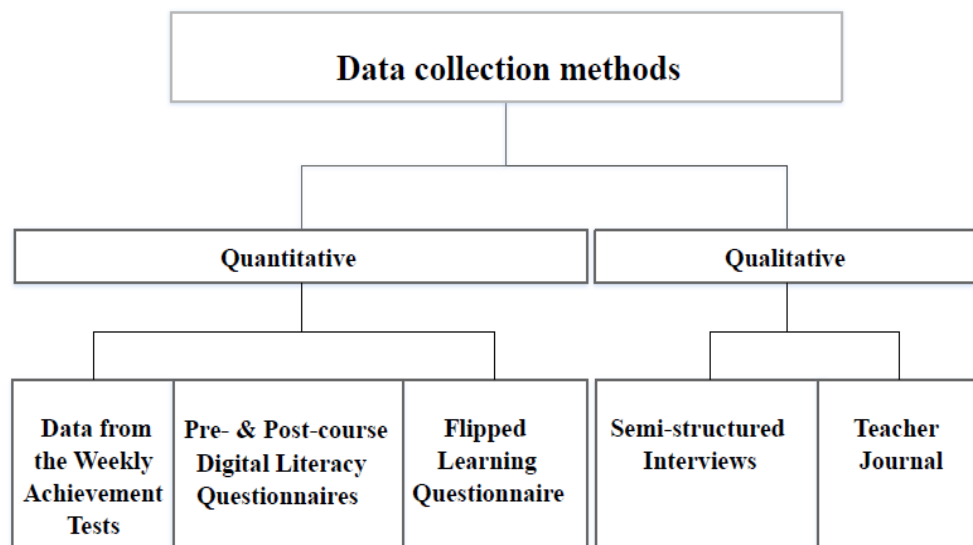


Figure 3. Mixed-methods research design



Dörnyei (2018) discussed some strengths of mixed methods research and referred to the main attraction of it as ‘bringing out the best of both paradigms combining qualitative and quantitative research strengths’ (p.45). Johnson and Turner (2003) identified the major principle of mixed methods research as gathering multiple data by means of a variety of strategies, approaches and methods to achieve a mixture or combination which would yield strengths and non-overlapping weaknesses that complement one another. Johnson and Onwuegbuzie (2004) suggest that many researchers tend to combine the two methods as a result of more interdisciplinary and complex research settings. In this study, the checklist formed by Creswell (2014) was used as a guideline to ensure effective implementation of mixed method research design to answer the research questions below (Appendix A):

1. How do EFL learners perceive learning and practicing English grammar input through the flipped classroom approach?
2. Are there changes in learners’ perspectives on learning with ICT and their digital literacy after implementing the flipped learning model?
3. Is there any significant difference in the scores of the students in the experimental and control groups after applying the flipped learning model in teaching grammar?
4. What are the experiences of the teacher regarding the implementation of the flipped classroom?

The mixed-methods research design employed for gathering both quantitative and qualitative data was used as a way of converging the data and making inferences (see Figure 3). The blending of data was aimed at providing solid insights into the research questions through exploring relationships between variables in depth and triangulating data to make sure the qualitative and quantitative data complement each other.

### **3.2 Setting and Participants**

This research was conducted at an English preparatory program of a foundation university located in İstanbul, Turkey. The program established in 2005 has about 1500 students most of whom are Turkish EFL learners while the international ones mainly come from Middle-Eastern and African countries. The major goal of the program is to equip non-native speakers of English from different parts of the world with the necessary level of language proficiency and study skills for their

departments at university. Another objective of the program is to make sure students gain autonomy using ICT in and beyond the classroom while engaging in collaborative tasks.

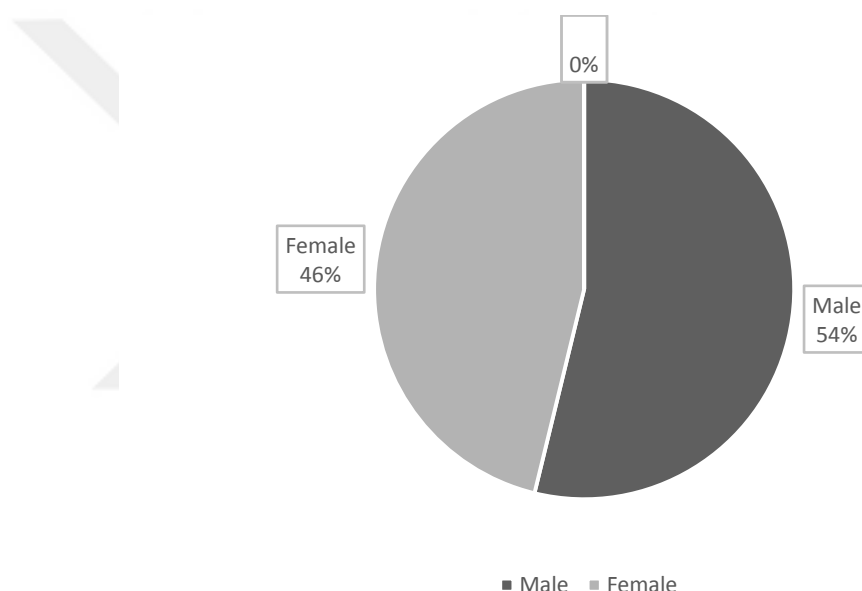
The program operates in a modular system, and there are five modules in an academic year. Learners enrolled in the program are required to complete the program before they can begin studying at their faculties. A module typically lasts eight-week long. Students study a level in throughout one module and those who score 65 out of 100 are eligible to study the next level. The Council of Europe's 'Common European Framework for Languages' (CEFR) guided the program while shaping the curriculum (Council of Europe, 2011); thus, CEFR level references are used to describe and grade the learners' proficiency in English. CEFR is a standard scale for measuring English Language proficiency. These scales in CEFR identify what a learner can do at each point across the range of speaking, listening, reading and writing skills.

CEFR learning objectives are mapped and describe what a learner can do at different levels of proficiency on the scale. CEFR offers "a comprehensive descriptive scheme of language proficiency and a set of common reference levels (A1-C2) defined in illustrative descriptor scales, plus options for curriculum design promoting plurilingual and intercultural education" (Council of Europe, 2018, p. 25). There was a total of 18 B2-level classes in the fifth module and the participants of this study studied in two of the B2-level classes.

A needs assessment study conducted in 2015 by the English preparatory program where the thesis study took place highlighted the fact that the majority of students enrolled in the program had difficulty with writing and speaking skills. The results revealed that nearly 90% of the students have little, some or a lot of difficulty with writing and speaking. To maximize learners' opportunities to develop these skills and to ensure that an adequate amount of time is allocated for them, productive skills are focused on exclusively as an institutional practice.

The participants were selected based on convenience sampling and one of the B2 classes where the researcher was the instructor of the class was assigned as one of the experimental groups ( $n=26$ ). Male participants ( $n=15$ ) were slightly higher in number than female participants ( $n=11$ ) (see Figure 4).<sup>23</sup> Turkish and three international EFL learners (two of whom were Jordanian and one of whom was Somalian) participated in the study. The research was carried out throughout the fifth

module of the academic year 2018-2019 (between May 2019 and July 2019).The participants were provided with the information regarding the research study on the first day of the fifth module and they were officially given an informed consent form that outline the main elements of the study (Appendix B). Students in the experimental group came from a wide range and a total of 13 disciplines such as cartoon and animation, architecture and biomedical engineering (Figure 5). The control group of the study also had twenty-six students; however, in this group the teachers did not implement the flipped learning model. The control group received only direct instruction throughout the five weeks of the study so that their weekly achievement test scores could be compared with the experimental one at the end of the implementation of flipped classroom.



*Figure 4. Gender of the study participants*

According to the responses provided by the participants in the demographics and digital habits part of the consent form, all participants in the experimental group had studied English for a longer or shorter period (see Appendix B).However, more than half of them (54%) stated that they started learning English when they enrolled in the preparatory program in September 2018 (Figure 6). According to the results of the placement exam which was administered at the beginning of the 2018-2019 academic year, the students were all placed in A1 level classes and they had all failed at least one module due to either poor attendance or unsatisfactory performance until they were placed in a B2 class in module 5. B1-level average scores of the

participants both in the experimental and control groups show that they were placed in B2 based on their average scores in B1, which ranged from 65 to 66.56 (AppendixC).

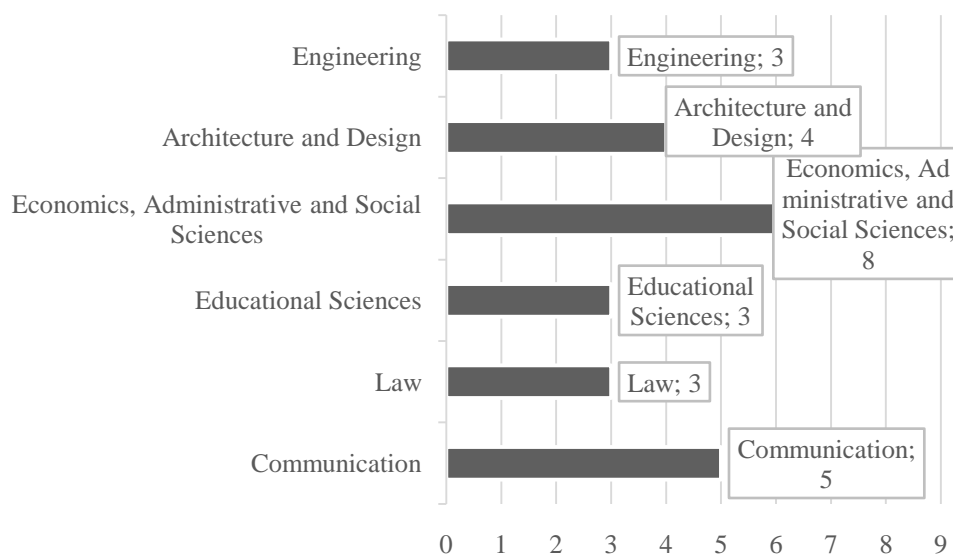


Figure 5. Faculties of the participants

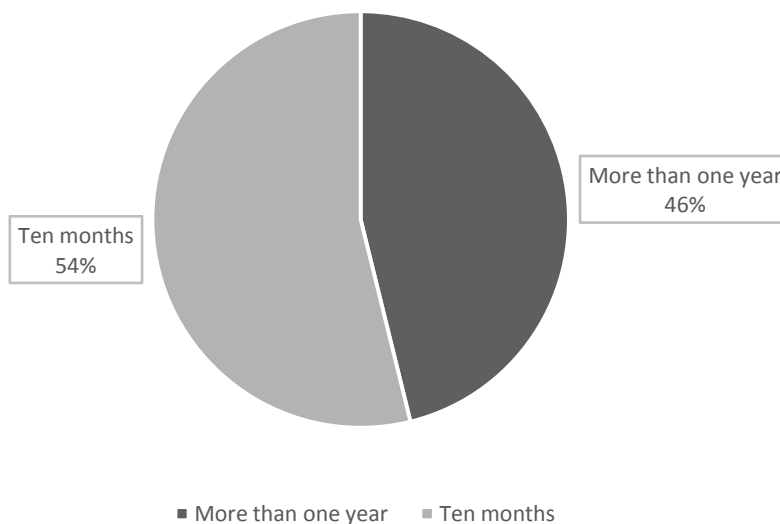


Figure 6. Participants' duration of learning English

All participants in the study had Internet access and 52% of them reported that they used the Internet around three or four hours every day (see Figure 7). The participants all stated that they could access to the Internet both at home and on campus as well as through their smartphones. The entire group of learners had an

email account that they could regularly receive the notifications about the flipped classroom and other relevant follow-up activities. The participants all stated that they had either a laptop or a tablet computer to access the Internet at home.

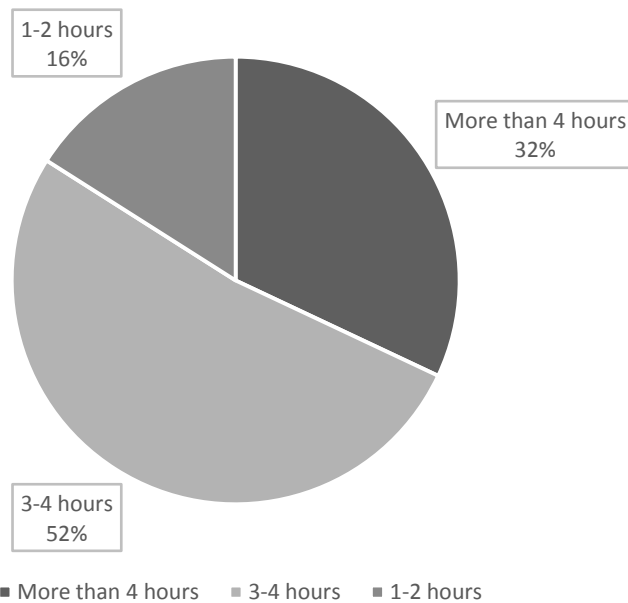


Figure 7. The daily duration of Internet use of the participants

The participants ( $n = 11$ ) were interviewed after the implementation of the flipped classroom. Table 1 summarizes the information of the interviewees with respect to gender, age and department at university.

Table 1

*Demographic and Academic Information of the Interviewees*

Student Code	Gender	Age	Department
Student 1(S1)	Male	21	Industrial Engineering
Student 2(S2)	Female	18	Advertising
Student 3(S3)	Male	23	Economics
Student 4(S4)	Male	18	Law
Student 5 (S5)	Female	19	Public Relations
Student 6 (S6)	Male	20	International Relations
Student 7 (S7)	Female	20	Architecture
Student 8 (S8)	Male	19	Business Administration

Table 1 (cont.d)

Student Code	Gender	Age	Department
Student 9 (S9)	Female	18	Psychology
Student 10(S10)	Male	19	Biomedical Engineering
Student 11 (S11)	Male	19	Mechatronics Engineering

### 3.3 Procedures

In this section, the procedure followed for data collection and data analysis during the study is described with precise details.

**3.3.1 Data Collection Instruments.** Throughout the study, several instruments of data collection including a Likert-scale flipped learning questionnaire, semi-structured interviews with participants, a teacher journal, pre-course and post-course digital literacy questionnaires, and weekly achievement tests were used.

**3.3.1.1 Questionnaire.** Dörnyei (2018) attributes the popularity of questionnaires to the fact that they are quite easy to construct, and they can capture a large amount of information in a quick and versatile manner, which means they can be adapted to different contexts and topics. The aim of the questionnaire used in the study was to collect data on students' perspectives on the flipped approach to learning grammar and to identify their views on the use of video as a learning tool (Appendix E). As the questionnaire was administered after the course in week 5 of the flipped classroom implementation, it also served to pinpoint any potential problems or negative views.

The flipped learning questionnaire was adapted from the Flipped Classroom Scale and Video Scale developed by Nouri (2016). The questionnaire was used at Stockholm University in Sweden and with undergraduate students ( $N=240$ ) from the Department of Computer and Systems Sciences and taking the last year course 'research methods and communication' in 2015. Nouri (2016) had performed an exploratory factor analysis with principal component extraction in an attempt to refine the instrument and Cronbach's alphas were .78 for the Flipped Classroom Scale, and .82 for the Video Scale. The original scales consisting of Likert-scale

items measured on a 5-point scale ranging from 1=strongly disagree to 5=strongly agree, has 17 and 12 items.

The reliability analysis of the questionnaire was also performed for the present study. After the analysis, some items which did not yield good reliability were removed from the instrument(AppendixD)The adapted instrument in this study has two sections; the first section, including 7 items is aimed at gathering data on the views of the students' regarding their experiences of the flipped classroom after the course. The second section, a6-item questionnaire, focuses on the use of video and students' perceptions of learning through the medium. The students responded to the questionnaire in the fifth week which was at the end of the flipped classroom implementation.

**3.3.1.2 Semi-structured interviews.** In a semi-structured interview, the researcher forms a general idea about the direction of the interview beforehand; yet avoids a formal structure by which predetermined questions guide the participants (Nunan, 1992). For achieving a rich set of data and interactions, topics and issues guided the interviews in the study.

Gillham (2000) suggested combining questionnaire results with semi-structured interviews to have a better grasp of the meanings of the numerical responses and argued that interview data can clarify and gain insight into the results of the questionnaire as well as bringing the research study to life. For the semi-structured interviews, to elicit the students' perceptions of flipped classroom experiences, the teacher conducted interviews with 11 interviewees who volunteered among the 26 participating EFL students (see Table 1 for demographics and the departments). The semi-structured interview questions were prepared by the teacher after the questionnaires were conducted (Appendix F). Students were provided with a written informed consent form before they were interviewed (Appendix G).

**3.3.1.3 Teacher's Journal.** Despite all endeavors, teachers may not allocate enough time to reflection due to their heavy workload. Elliott (1991) states that for successful triangulation, the teacher's perspective is essential. Therefore, as the teacher, I kept a journal for five weeks to identify and reflect on any challenges that arose throughout the process regarding the planning and implementation of flipped learning.

Bailey (1983) defines the journal study as a personal account of a language learning or teaching experience which is documented by means of regular entries and

then analyzed for themes that recur. According to Nunan (1992) journals are significant introspective tools in language research. Through introspection, which is a method used in cognitive psychology, one can observe and reflect on thoughts, motives and reasoning processes to identify the ways these processes guide our behavior (Nunan, 1992).

The journal consisted mainly the following information: Field notes made during the planning stages and throughout the classes, post-lesson reflections, observations of students' behavior and reactions/responses regarding the challenges of flipped learning, examples of verbal exchanges between the students, introspective account of my feelings in various stages. OneNote, which is a digital notebook provided by Microsoft, was employed as the journal software in the study to ensure the journal entries could be coded later for analysis. Both the mobile and tablet applications of the program were used by the teacher throughout the study.

**3.3.1.4 Pre-course and post-course digital literacy questionnaires.** The pre-course and post-course digital literacy questionnaires were employed to capture the characteristics of EFL learners' digital literacy after the implementation of flipped classroom. There are 17 statements in the questionnaire measured on a 5-point scale and the descriptors are strongly agree, agree, neutral, disagree and strongly disagree (Appendix H). The questionnaire was designed and developed by Ng (2012) to identify some dimension of learners' digital literacy and to gain insight into the changes in participants' perspectives on learning with ICT. The study explores the 'digital nativeness' and investigates the digital literacy of a group of pre-service teachers who were born after 1980. The pre-service teachers were enrolled in an e-learning elective course at a university in Australia. The first 7 items focus on the views of using ICT for learning; the second set, including 6 items, centers around the technical elements of digital literacy; the third part which has 2 items investigates the cognitive aspect of digital literacy and finally, the fourth section of the questionnaire is based on social-emotional component of digital literacy.

**3.3.1.5 Weekly achievement tests.** The final instrument used for data collection was the weekly achievement tests. These tests are prepared by the testing and assessment unit of the institution for the whole B2 classes. These in-house tests were administered three times in the study setting (in week 2, 3 and 4) to monitor the



learners' progress on grammar, vocabulary and reading comprehension. For the purpose of this research, only the grammar sections of these tests were analyzed.

The questions in the third section of each test typically test the weekly grammar objectives covered in class. The scores of the experimental group and the control group were compared at the end of the module; in the fifth week of the study. The main purpose of using these tests was to determine whether there is a significant difference between the learners' in the control and experimental groups in terms of learning grammar.

**3.3.2 Data collection procedures.** A mixed-methods approach to data collection and analysis was adopted throughout the 5-week period of the study (see Table 2). The study was designed as classroom-based research and used a sample of students in two B2-level EFL classrooms at an English preparatory program of a foundation university in Istanbul, Turkey.

The two experimental classes were asked if they would volunteer to participate in the study and with their agreement, the teacher initiated the research process. The pre-course digital literacy questionnaire which was aimed at gaining insight into the attitudes of learners to various dimensions of digital literacy in the experimental group was administered on the first day of the module. The weekly achievement test data, which consisted of the grammar objective learners had studied in the related week, were collected from both the experimental and the control group in the 2nd, 3rd and 4th weeks of the module.

Table 2

*Schedule of the Study*

Week	Language Focus	Date	Data Collection
Week 1	Noun Clauses	May 27-31, 2019	-Pre-course digital literacy questionnaire -Teacher journal
Week 2	Relative Clauses	June 10-14, 2019	-Weekly achievement test 1 (Experimental & control group) -Teacher journal

Table 2 (cont.d)

Week	Language Focus	Date	Data Collection
Week 3	Passive Voice	June 17-21, 2019	-Weekly achievement test 2 (Experimental & control group) -Teacher journal
Week 4	Present & past modals of deduction	June 24-28, 2019	-Weekly achievement test 3 (Experimental & control group) -Teacher journal
Week 5	Conditionals	July 1-5, 2019	-Post-course digital literacy questionnaire -Teacher journal -Flipped learning questionnaire -Semi-structured interviews

Before the instructional intervention, the volunteer participants in the experimental group in two B2 level classes were informed about the general framework of the flipped learning model and the tasks to be completed throughout the module. In order to familiarize the students with the process, a flipped learning guide aimed at raising awareness about the flipped learning model was prepared by the teacher for both in-class and online reference (AppendixI).

The teacher used class time to ensure the downloading the mobile application and login processes for Google Classroom were completed by all participants and to assist further with any potential technical issues. To be able to maximize the efficiency of in-class time and increase the opportunities for self-paced learning and formative assessment during the implementation of the flipped classroom, some additional applications were also recommended by the teacher and then downloaded by the participants (AppendixJ). Under the supervision of the teacher, the activities of the participants in the experimental group were observed both in the physical classroom and on the virtual classroom, namely 'Google Classroom' (Figure 8). Completion of all activities uploaded on the online platform were voluntary and all the testing and assessment instruments such as online quizzes created through

Google Forms and Kahoot challenges assigned as homework were formative in that they are aimed at ongoing improvement (Appendix K).

☰ MODULE 5 - B2.9 - B2.10 Stream Classwork People Grades

## MODULE 5 - B2.9 - B2.10

Class code 7375dh [🔗]

Figure 8. The homepage for Google Classroom

Participants had access to the materials on Google Classroom prepared by the teacher, adapted or taken from other sources that were aligned with the weekly student learning outcomes. A typical weekly folder on Google Classroom looks like as follows:

### WEEK 1






	WEEK 1 / WAT PRACTICE QUIZ 1	Due Jun 10, 11:59 PM
	Everyday Grammar: Ever Words	Posted Jun 9
	WEEK 1 / Noun Clauses Quiz <span style="font-size: small;">🗨️ 1</span>	Due Jun 10, 11:59 PM
	Everyday Grammar: Noun Clauses	Posted Jun 9
	-ever words (noun clauses)	Posted Jun 9

Figure 9. The screenshot of week 1 Google Classroom tasks

The video content which covers weekly grammar objectives (see Table 2 for the weekly grammar objectives) were recorded by the teacher using the program ‘Screencast-o-matic’, a screencast tool that enables users to record 15-minute videos

for free. As none of the videos created during the intervention exceeded six minutes throughout the study, Screencast-o-matic proved to be a satisfactory tool to deliver the flipped content by the teacher. After the screencasts were prepared, the videos were uploaded to the teacher's YouTube channel for students' review. These YouTube videos, which were categorized as 'unlisted' on the YouTube channel, were embedded on Google Classroom for easy access (Figure10). Unlisted videos can be viewed by users only with the link that was provided through Google Classroom. The videos were categorized as unlisted to gain insight into the analytics provided by YouTube. The analytics feature on YouTube enables users to follow their channel's performance. In this context, the analytics, the interactive reporting system with some specific metrics, was used on a regular basis by the teacher to monitor whether students have watched the videos through the link (Figure 11).

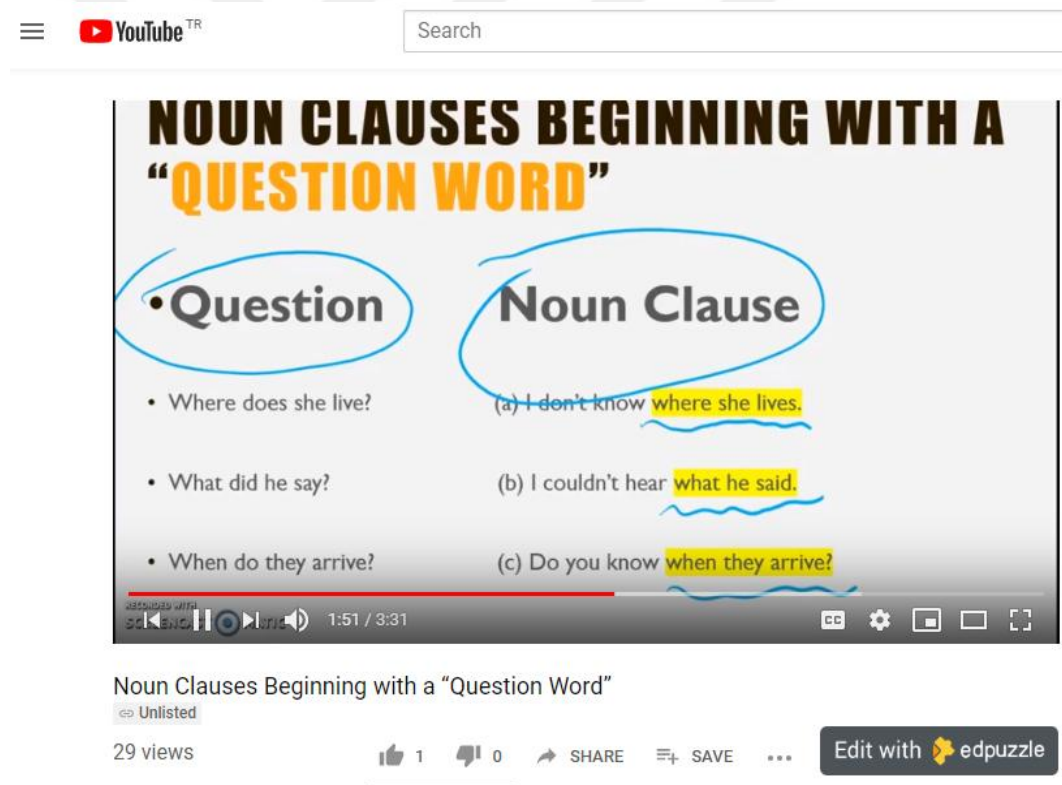


Figure 10. The screenshot of a video lesson uploaded by the teacher for week 1

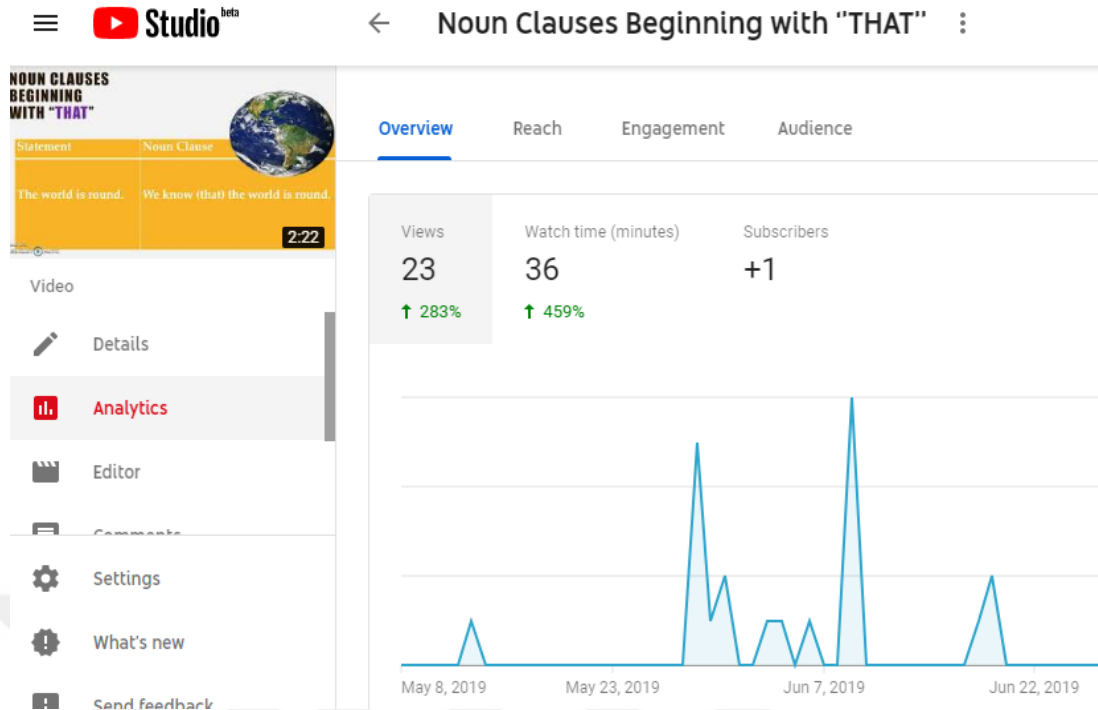


Figure 11. Screenshot of a 'YouTube analytics' page of the teacher's YouTube channel

After students viewed the video, they were instructed to complete the online quizzes they had been assigned (Figure 12). These online quizzes were aligned with the student learning outcomes and had multiple choice items as in the weekly achievement test (Appendix L).

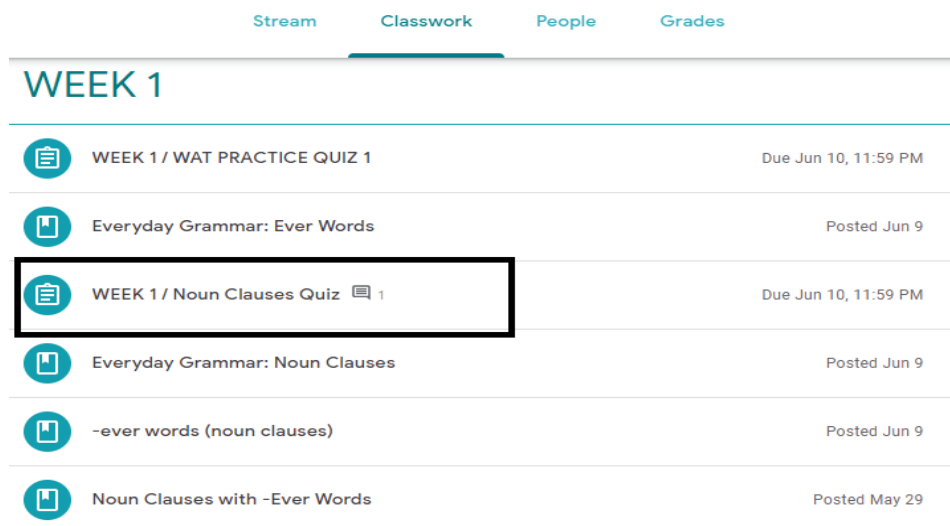


Figure 12. Screenshot of a Google Classroom page showing the weekly online grammar quiz

Upon watching the assigned videos, students completed some extra activities and the online quizzes. These quizzes prepared the learners for in-class activities as well as receiving automated feedback to gauge their understanding (Figure 13) which were based on production, such as a group discussion, writing a brief paragraph, role-plays, interviews, and matching activities (Figure 14).

In addition to the communicative activities after studying the grammar objectives before the classes, some whole-class feedback sessions were planned by the teacher if the statistics from the online quizzes yielded not so satisfactory performance by the learners (Figure 15&16). The insight from the online quizzes informed the teacher's decision for the follow-up activities and feedback sessions to be conducted during the week.

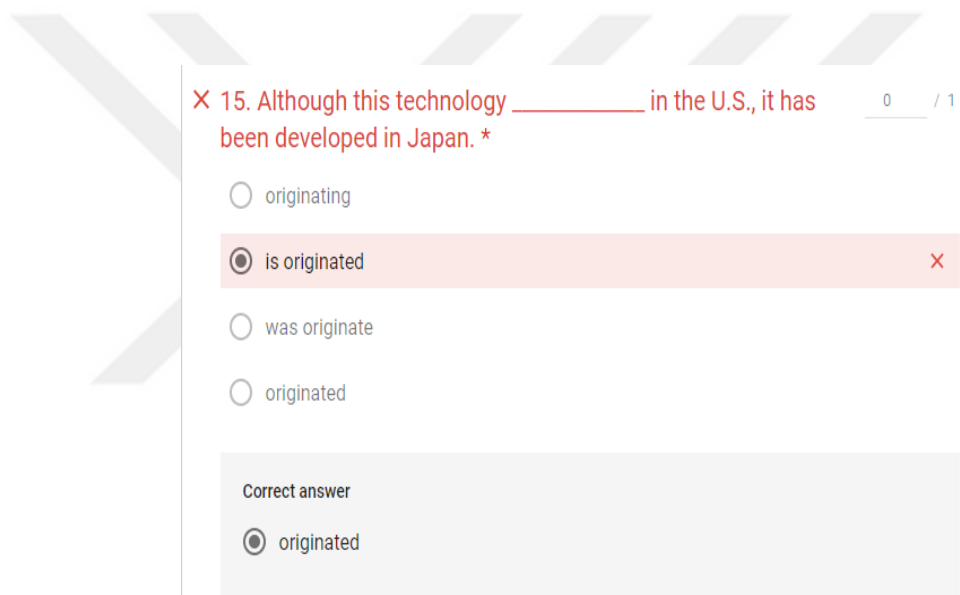


Figure 13. This screenshot of a quiz page on Google Forms

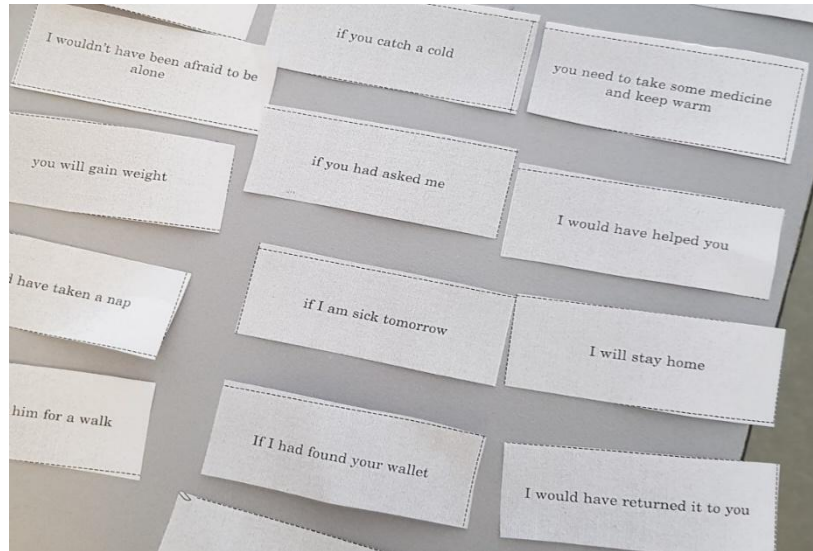


Figure 14. An example of an in-class matching activity to revise ‘conditionals’

## Insights

<b>Average</b> 9.64 / 20 points	<b>Median</b> 8 / 20 points	<b>Range</b> 3 - 19 points
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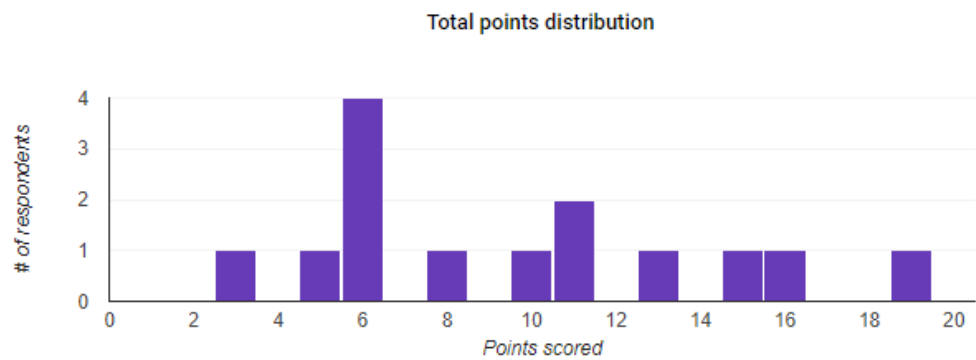


Figure 15. The screenshot of statistics from a quiz prepared with Google Forms

Frequently missed questions <span style="color: grey;">?</span>	Correct responses
3. The work _____ by noon.	4 / 14
4. The pressure of work _____ him emotionally.	5 / 14
5. The house _____ painted recently.	6 / 14
7. The government _____ a huge amount of money on education.	5 / 14
9. The bank _____ twice this year.	5 / 14
11. Archaeologists _____ the gold in a cave near the top of the mountain.	5 / 14
13. The study _____ the impact of violent TV programming on children.	5 / 14
15. Although this technology _____ in the U.S., it has been developed in Japan.	3 / 14
17. The government _____ millions of dollars in its attempt to combat drug abuse.	2 / 14
18. I _____ a special spray to get rid of the insects in the garden.	6 / 14
19. The teacher _____ two students to represent the school.	4 / 14
20. Pregnant women _____ certain foods such as raw meat.	5 / 14

*Figure 16.* The Screenshot of frequently missed questions from a quiz prepared with Google Forms

When the module was completed in week 5, the post-course digital literacy questionnaire was administered in the experimental group. On the last two days of classes, the flipped learning questionnaire was completed by all the participants in the study. Then, eleven participants who volunteered to be interviewed were invited and these semi-structured interviews which were conducted in the final week of the study were audio-recorded.

Harklalu (2011) argued that in contemporary research, audio-recording and transcribing interviews has become a standard. Fraenkel, Wallenand Hyun (2012) also argue that it is necessary to record what the participant has to say and thus, a tape recorder is considered an indispensable aspect of any qualitative researcher's equipment. Some probes, defined as "a neutral request to clarify an ambiguous answer, to complete an incomplete answer, or to obtain a relevant response" were also used during the interviews to extend the data collected (Neuman, 2014, p. 219). Neuman (2014) pointed out that 'having interviewers periodically use probes to ask about a respondent's thinking is a good way to check whether respondents understand the questions as intended by the researcher' (p. 204). Bailey (1983) argued that the data collection of the teacher journal should be candid, and the analysis should be conducted after a considerable amount of input has been collected. Therefore, the teacher kept a journal for five weeks and then conducted an analysis at the end of the implementation of flipped learning model. Richards (2003) highlighted



that keeping a journal may assist the researcher in sustaining a critical perspective with regard to the data.

Referring to the benefits of keeping a journal, Bailey (1983) also stated that it can be used as an additional tool of triangulation and can underpin self-awareness of the procedures a teacher is involved in. In the flipped learning environment, therefore, such an introspective method can serve to help the researcher to gain insight into the perspectives on the instructional factors.

**3.3.3 Data Analysis Procedures.** A mixed-methods research design was employed to gather data in order to respond to the research questions about the effectiveness of flipped learning for grammar instruction as well as the attitudes to digital literacy and learning with ICT (Table 3). Neuman (2014) stated that during data analysis it is of utmost importance to analyze empirical information to reach a conclusion and anchor general statements about the study. The data served to move towards a better understanding of the flipped classroom environment within the context of this study.

Table 3

*Research Questions, Methods and Instruments Used in the Study*

Research Question	Data Collection Instrument	Analysis Method(s) & Procedure(s)
1. How do EFL learners perceive learning and practicing English grammar input through the flipped classroom approach?	Flipped Classroom Questionnaire (Adapted from Nouri, 2016)  Semi-structured Interviews	QUAN: Frequencies & Descriptive Statistics  QUAL: Thematic analysis
2. Are there changes in learners' perspectives on learning with ICT and their digital literacy after implementing the flipped learning model?	The pre-course and post-course Questionnaires on Attitudes towards Learning with ICT and Digital Literacy (Ng, 2012)	QUAN: Descriptive Statistics &- Paired-samples <i>t</i> -test

Table 3 (cont.d)

Research Question	Data Collection Instrument	Analysis Method(s) & Procedure(s)
3. Is there any significant difference in the scores of the students in the experimental and control groups after applying the flipped learning model in teaching grammar?	Grammar Sections of the Weekly Achievement Tests prepared by the Testing and Assessment Unit of the Institution	QUAN: Descriptive Statistics & Mann-Whitney-U Test
4. What are the experiences of the teacher regarding the implementation of the flipped classroom?	Teacher's Journal	QUAL: Thematic Analysis

As stated in the data collection instruments section, semi-structured interviews, a teacher journal, a flipped learning questionnaire, pre-course and post-course digital literacy questionnaires and weekly achievement tests, a process that was aimed at ensuring validity and developing a comprehensive understanding of the phenomena, generated the data for this study.

For triangulation of data, a Likert-scale questionnaire and semi-structured interviews were conducted. The aim of the Likert-scale questionnaire was to collect preliminary data on students' perceptions of the flipped classroom for practicing grammar and their views on the use of video as well as identifying their feelings and views towards the flipped learning environment. Both the questionnaire and the semi-structured interviews also served to identify any potential problems or negative views regarding the flipped approach.

Statistical Package for the Social Sciences (SPSS) v. 22 software was used to perform some statistical analyses to gain insight into the quantitative data. The first step was to transfer the data into SPSS for the analysis. For the Likert-scale statements, the means, standard deviations were calculated, and frequency analysis was run to capture a general overview of attitudes towards flipped classroom and learning through video. Paired sample *t*-test was conducted to gain insight into the differences in attitudes and digital literacy between the pre-course and post-course

responses. A frequency analysis was also performed for the pre-course and post-course responses to the ICT for learning and digital literacy questionnaire.

The data needs to be normally distributed to use the parametric tests ANOVA or t-test. When the data do not approximate a normal distribution, Mann-Whitney U or Kruskal-Wallis, which are non-parametric tests, are run (Gall, Gall, & Borg, 2003). In this study, the Kolmogorov-Smirnov test was performed and when the values were analyzed, the  $p$  value was  $p=0,013p<0,05$ . Because the data do not follow normal distribution, Mann-Whitney U test was conducted as it is limited to nominal variables with only two values. Mann-Whitney U test, a non-parametric test for comparing two sample means that come from the same population to test whether two sample means are equal or not, was used to compare the weekly achievement scores of the experimental and control groups.

After the statistical analyses were completed, semi-structured interviews were conducted, recorded and later transcribed for analysis. The procedure was voluntary, and eleven students offered to be interviewed. The interviews took place after the participants had filled in the flipped learning questionnaire. Interview transcripts were then coded based on thematic analysis procedures to generate possible themes pertaining to the research question. While elaborating on content analysis, Fraenkel et al. (2012) discuss 'latent content' and state that it is what underlies the message and that coding is used to for developing themes to facilitate synthesis. Neuman (2014) illustrated the three stages of coding which walks the researchers through an integrated way of analysis. The three stages consist of open coding, axial coding and selective coding. Open coding is the process of reviewing the data carefully and creating a code; whereas axial coding is structuring the codes so that relations among the codes are demonstrated. The final step in the process is selective coding. Neuman (2014) summarized the process of selective coding, which is also used in this study and highlighted that selective coding follows the process of development of concepts and themes in which central themes are formed and organized while finding instances which support these main generalizations.

After the data collection was finalized, both the semi-structured interviews and teacher's journal entries were coded and the themes were refined, reorganized and elaborated on as well as looking selectively for supporting evidence. Thematic analysis is a flexible method employed across different theoretical and epistemological approaches (Braun & Clarke, 2006). According to Braun and Clarke

(2006), thematic analysis can yield a rich and detailed, yet complex, account of the data. The analysis phase outlined by the authors was employed in the present study. In accordance with the research, the steps of thematic analysis taken were “familiarizing with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing the report” (Braun & Clarke, 2006, p. 87). Drawing a thematic map in thematic analysis is also integral to the research process. These maps assist the researchers with reviewing themes and reaching the goal of identifying coherent but distinctive themes (Ryan & Bernard, 2000; Braun & Clarke, 2006). Therefore, two thematic maps which display the themes that emerged from the instruments for the semi-structured interviews and the teacher journal were prepared to facilitate the process (see Figures 19 & 20).

**3.3.4 Reliability and Validity (for quantitative research) / Trustworthiness (for qualitative research).** A variety of measures were taken to assure the validity and reliability of the present study. Creswell (2014) suggested some validity strategies that researchers can incorporate into their studies such as triangulating a variety of data sources. To ensure triangulation, a Likert-scale questionnaire, pre-course and post-course digital literacy questionnaires, semi-structured interviews with students, a teacher journal and student achievement data were analyzed.

Dörnyei (2003) argued that participants may not read the instructions, and thus suggested that researchers read out the items loud when the learners complete a questionnaire to avoid common pitfalls associated with reliability. Following the questionnaire, using the data obtained through the semi-structured interview provided the triangulation and helped the teacher get more valid and reliable data for the research. Dörnyei (2003) also highlighted that learners cannot be expected to express themselves honestly and criticize a course if participants are not convinced regarding the confidentiality of the investigation.

Confidentiality was ensured and communicated regularly throughout the implementation of the study to encourage honest, authentic, and thorough responses during the semi-structured interviews. The participants were assured anonymity and the right to withdraw from the study at any point. To prevent any potential effect that might harm the data, such as aiming for a mark, students were informed about the evaluation criteria in detail before the study began. Course evaluation was

completely based on the tests and tasks of the program, not on any of the activities to be completed in the flipped classroom environment.

The data gathered by means of the questionnaires were analyzed using SPSS v. 22 and the reliability analyses were performed for the items in each section of the flipped learning questionnaire and the pre-course and post-course digital literacy questionnaires. Regarding the reliability coefficients, Dörnyei (2018) highlighted that “even with short scales of three or four items, we should aim at reliability coefficients in excess of 0.70; a scale with a Cronbach alpha that does not reach 0.60 should sound warning bells” (p.207). The Cronbach’s Alpha levels from the analyses revealed that the instruments demonstrated good reliability (Table 4 & 5).

Table 4

*Cronbach’s Alpha Levels for the Flipped Learning Questionnaire (Appendix E)*

Scale	Cronbach's Alpha	N of Items
Flipped Learning (PART A)	.75	7
Using Video for Learning (PART B)	.76	6

It can be concluded from the analysis that the adapted flipped learning questionnaire is considered quite reliable because Cronbach Alpha ( $\alpha$ ) coefficient was calculated as  $\alpha=.75$  and  $.76$  for the two parts of the questionnaire.(Table4). The item reliability analysis of the questionnaire was also conducted, and Cronbach’s alpha levels were found satisfactory.

Before analyzing the data from the pre-course and post-course digital literacy questionnaires, a reliability test was performed. Table 5 presents the results of the reliability analysis of the pre-course digital literacy questionnaire, which yielded a highly reliable score.

Table 5

*Cronbach's Alpha Levels for the Pre-course Digital Literacy Questionnaire*

Construct	Cronbach's Alpha	N of Items
Attitudes toward learning with ICT	0.77	7
Technical, cognitive and social-emotional dimensions of digital literacy	0.77	10

The results of the reliability analysis of the post-course digital literacy questionnaire also yielded a satisfactory score. The outcomes of the analysis are displayed below in Table 6.

Table 6

*Cronbach's Alpha Levels for the Post-Course Digital Literacy Questionnaire*

Construct	Cronbach's Alpha	N of Items
Attitudes toward learning with ICT	0.75	7
Technical, cognitive and social-emotional dimensions of digital literacy	0.76	10

Normality test, which is considered a parameter assisting researchers on the type of the data, was conducted as well (Table 7). Dörnyei (2018) indicate that “the sample should have a normal distribution” as a basic requirement in quantitative research (p. 100). The assumption of normality was run to check whether accurate and reliable conclusions can be drawn from the weekly achievement test scores.

Table 7

*Test of Normality*

	Kolmogorov-Smirnov		Shapiro Wilk			
	Statistic	Df	Sig.	Statistic	df	Sig.
Mean	.137	54	0.13	0.963	54	.089

a. Lilliefors Significance Correction

### **3.4 Limitations**

The study has several limitations that need to be discussed. One major limitation that must be considered is the targeted focus of the study. The study analyzed the test scores of a relatively small sample of students from four classes, two of which were flipped classrooms. Sampling was nonrandom; a convenience sample was selected due to availability of the participants in the study. As the focus is specifically on students' perceptions within two classroom settings where the teacher implemented the flipped classroom approach, student perceptions cannot be generalized to larger populations in EFL classrooms.

Additionally, the study relies primarily on student self-reports through questionnaires, which may contain potential biases. For instance, students may not always proceed straight on or be frank on certain questions such as watching the videos prior to the classes, especially when the researcher is simultaneously one of their course instructors. In this study, even though students were all placed in a B2-level class, they were of diverse English proficiency levels, learning backgrounds and digital literacies levels, which may have affected their perceptions of and reactions to the flipped learning.

Another limitation was that the study was conducted throughout one module which lasted 5 weeks. Another limitation is that the teacher was also the researcher. This made it quite challenging to write observational field notes for the teacher during the classes. A final limitation is that students were not randomly assigned to either the flipped or traditional classroom. Because of the lack of random assignment, generalizations cannot be made to some larger population group in the traditional sense.

## **Chapter 4**

### **Findings**

In this chapter, the findings of the study are presented with respect to the research questions. Qualitative and quantitative data were collected by means of several instruments including a Likert-scale flipped learning questionnaire, pre-course and post-course digital literacy questionnaires, weekly achievement tests, semi-structured interviews with participants, and a teacher journal throughout the module during which the flipped classroom was implemented.

The purpose of the instruments was to achieve the goal of collecting both qualitative and quantitative data and seeking a better understanding of students' perceptions of flipped learning, their attitudes towards digital literacy and the challenges of the approach perceived by the teacher.

#### **4.1 Findings on the Learners' Perceptions Towards the Flipped Classroom**

The first research question of the study was aimed at capturing how EFL learners perceive learning and studying English grammar by means of a flipped learning questionnaire conducted at the end of the course that took five weeks (Appendix E). Flipped classroom was implemented throughout the course to teach the grammar objectives in a B2 level setting.

The results of the flipped learning questionnaire which was aimed at gathering data on the students' perceptions of the flipped classroom and their experiences of video usage for practicing English grammar after the course are displayed in the following tables (Table 8&9).



Table 8

*Percentages of Students' Attitudes towards Flipped Learning*

Statements	SD	D	N	A	SA	TA	TD
1. I have a positive attitude towards the flipped class room after the course	0.0	0.0	0.0	84.6	15.4	100	0.0
2. I appreciate learning with video	0.0	0.0	0.0	88.5	11.5	100	0.0
3. I am more flexible and mobile as a learner	0.0	0.0	0.0	84.6	15.4	100	0.0
4. I can study at my own pace	0.0	0.0	0.0	61.5	38.5	100	0.0
5. It is easier and more effective to learn	0.0	0.0	0.0	73.1	26.9	100	0.0
6. I am more motivated as a learner	0.0	0.0	0.0	84.6	15.4	100	0.0
7. I experience strong peer collaboration	0.0	0.0	0.0	73.1	26.9	100	0.0

Note. SD= Strongly disagree, D= Disagree, N=Neutral, SA=Strongly Agree, A= Agree, TA=Total Agreement, TD= Total Disagreement

According to the results given above in Table 8, all participants ( $N=26$ ) had a positive attitude towards the flipped classroom after the course. As illustrated in Table 9, all students appreciated learning with video. As can be seen in the table above, all participants agreed or strongly agreed that they could study at their own paces. According to the results of the item *I am more motivated as a learner*, students fully agreed that they were active learners and their motivation level was

high in the flipped learning process. All students agreed with *I experience stronger peer collaboration* item in the questionnaire.

#### 4.1.1 Findings on the learners' attitudes towards learning with video. In

the second part of the questionnaire conducted in the fifth week of the course, students' views on learning through video were explored (Table 9).

Table 9

#### *Percentages of Students' Attitudes towards Learning through Video*

Statements	SA	D	N	A	SA	TA	TD
1. The combination of video and non-traditional lectures was useful	0.0	0.0	0.0	30.8	69.2	100	0.0
2. Video made learning more effective	0.0	0.0	0.0	46.2	53.8	100	0.0
3. Video quality was satisfactory	0.0	0.0	0.0	92.3	7.7	100	0.0
4. Video made me learn more	0.0	3.8	0.0	57.7	38.5	96.2	0.0
5. Video motivated me to learn	0.0	0.0	3.8	38.5	57.7	96.2	0.0
6. Learning through video resulted in more peer discussions	0.0	0.0	0.0	73.1	26.9	100	0.0

*Note.*SD= Strongly disagree, D= Disagree, N=Neutral, SA=Strongly Agree, A= Agree, TA=Total Agreement, TD= Total Disagreement

As Table 9 indicates, there were no negative responses regarding the usefulness of combination of video and non-traditional lectures. 38.5% of students agreed and 57.7% of them strongly agreed that video motivated them to learn. Students' collaboration and peer learning throughout the course was highlighted in item six in

the questionnaire. Around 74% of the learners agreed and 26.9% strongly agreed that more peer discussions were generated as a result of learning through video. The quality of the videos, which were prepared through screencasts, were perceived satisfactory by the learners.

Participants' attitudes towards the flipped classroom (Table 10) and learning through video (Table 11) were also revealed by means of descriptive statistics (means and standard deviations) of each item in the flipped learning questionnaire.

Table 10

*Descriptive Statistics of Students' Attitudes Towards Flipped Learning After the Course*

Experiences of the flipped classroom	<i>M</i>	<i>SD</i>
1. I have a positive attitude towards the flipped classroom after the course	4.15	.36
2. I appreciate learning with video	4.12	.32
3. I am more flexible and mobile as a learner	4.15	.36
4. I can study at my own pace	4.38	.49
5. It is easier and more effective to learn	4.27	.45
6. I am more motivated as a learner	4.15	.36
7. I experience stronger peer collaboration	4.27	.45

As Table 10 illustrates, the highest scores were obtained from the item; *I can study at my own pace*. The results also showed that learners appreciated learning with video ( $M= 4.12, SD=.32$ ). As can be seen in Table 10, another high score demonstrated that *It is easier and more effective to learn* ( $M=4.27,SD=.45$ ).

The second part of the flipped learning questionnaire conducted at the end of the implementation of flipped classroom was aimed at exploring students' attitudes towards learning with video. Table 11 presents some descriptive statistics for capturing a general overview.

Table 11

*Descriptive Statistics of Students' Use of Video for Learning*

Experiences of using video for learning	<i>M</i>	<i>SD</i>
1. The combination of video and non-traditional lectures was useful	4.69	.47
2. Video made learning more effective	4.54	.50
3. Video quality was satisfactory	4.08	.27
4. Video made me learn more	4.31	.67
5. Video motivated me to learn	4.54	.58
6. Learning through video resulted in more peer discussions	4.27	.45

As can be observed in Table 11, the highest scores with respect to using video for learning were obtained from the item concerned with the usefulness of combining video and non-traditional lectures ( $M= 4.69, SD= .47$ ), *Video made learning more effective* ( $M= 4.54, SD= .50$ ) and *Video motivated me to learn* ( $M=4.54, SD=.58$ ). The item *Video made me learn more* ( $M=4.31, SD=.67$ ) also received high scores from the participants. The video quality, which is a major aspect in flipped classrooms, was also rated high ( $M=4.09, SD=.27$ ).

#### **4.2 Findings on the Pre-course and Post-course Digital Literacy Questionnaires**

The pre-course and post-course digital literacy questionnaires were conducted in the first and the fifth weeks of the flipped classroom implementation (see Appendix H for the questionnaire details). The questionnaire instrument, which is composed of four sections, was employed for gathering data in terms of students' attitudes to learning with ICT and technical, cognitive and social-emotional dimensions of their digital literacies before the classes started and after the process during which flipped learning was adopted as a strategy for teaching grammar objectives. The analysis of the pre-course and post-course questionnaire results was performed in SPSS through paired-samples *t*-test to compare the pre-course and post-course results of the digital literacy questionnaires administered in the first and fifth weeks of the implementation of flipped classroom. The correlation coefficient was  $p=0.00<0.05$ , which means that there is a significant correlation. The results are indicated in Table 12 below.

Table 12

*Comparison of the Pre-course and Post-Course Digital Literacy Questionnaire Results (Paired-Samples t-Test Result)*

	Paired Differences					t	df	Sig.(2-tailed)
	M	SD	SEM	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pre-course Post-course	.38264	.16223	.03181	-.44816	-.31711	-12.027	25	.000

The result of the paired-samples t-test revealed that the Sig. (2-Tailed) value is less than 0.05 (0.00,  $p < 0.05$ ), which means that there is a statistically significant difference between the pre-course and post-course questionnaire results.

Table 13

*Paired-Samples T-test Mean Scores for Comparing the Pre-course and Post-course Questionnaire Results*

		Paired Samples Statistics			
		M	N	SD	SEM
Pair 1	Pre-course	4.00	26	.39	.07716
	Post-course	4.38	26	.27	.05323

The change from pre-course questionnaire to post-course questionnaire was analyzed with a paired-samples t test. The pre-course score for each element was then compared to its corresponding post-course questionnaire score. The mean score for the pre-course questionnaire was 4.00 ( $SD = .39$ ) for 26 students, and the mean score for the post-course questionnaire was 4.38 ( $SD = .053$ ) for 26 respondents (Table 13). This result provides evidence that students' attitudes to learning with ICT

as well as their digital literacies improved during the flipped classroom implementation.

**4.2.1 Findings on the attitudes of learners towards ICT for learning.** The digital literacy questionnaire instrument was used to collect data in terms of students' attitudes to learning with ICT and technical, cognitive and social-emotional dimensions of digital literacies before and after the flipped classroom. The first part of the digital literacy questionnaire focuses on the use of ICT. The results of the frequency analysis of this part of the questionnaire are displayed in Table 14 below.

Table 14

*Mean Scores of Pre-Course and Post-Course Digital Literacy Questionnaire: Students' Attitudes Towards ICT for Learning*

Statements about attitudes towards ICT for learning	<i>M</i>		<i>SD</i>	
	Pre-course	Post-course	Pre-course	Post-course
1. I like using ICT for learning	4.38	4.42	0.49	0.50
2. I learn better with ICT.	4.26	4.61	0.72	0.49
3. ICT makes learning more interesting	4.00	4.57	0.80	0.50
4. I am more motivated to learn with ICT	3.73	4.38	0.60	0.49
5. ICT enables me to be a self-directed and independent learner	3.96	4.38	0.72	0.49
6. There is a lot of potential in the use of mobile technologies for learning.	4.23	4.69	0.43	0.47
7. Teachers/lecturers should use more ICT in their teaching of my classes	4.11	4.88	0.71	0.32

Participants' perspectives on ICT for learning was explored in the first part of the digital literacy questionnaire, which included seven items. The frequency analysis revealed the numbers and percentages of students in the pre-course and post-course questionnaires (Appendix M). As Table 14 illustrates, the highest mean scores on the pre-course questionnaire was obtained from the item that investigated to what extent learners like using ICT for learning ( $M=4.38$ ,  $SD=0.49$ ), while the highest mean score on the post-course questionnaire was about the item that explored if more ICT should be used by teachers/lecturers in their teaching ( $M=4.85$ ,  $SD=0.32$ ). While

40.7% ( $n=11$ ) of the students strongly agreed that ‘they learned better with ICT’ in the pre-course questionnaire, this percentage increased to 52.4% ( $n=16$ ) in the post-course questionnaire. The percentage of the students of who strongly agreed that learning was made more interesting through ICT in the pre-course questionnaire was 3.8% ( $n=7$ ) and this figure reached 68.2% ( $n=15$ ) on the post-course questionnaire.

The percentage of the learners who strongly agreed that mobile technologies have potential benefits for learning was 25% ( $n=6$ ) on the pre-course questionnaire. The most striking result to emerge from the data is that 75% ( $n=18$ ) of the students strongly agreed that mobile technologies had great potential for learning on the post-course questionnaire. Another important finding was that while the percentage of students who strongly agreed that more ICT tools should be employed by the teachers in classes was 23.3% ( $n=7$ ) on the pre-course questionnaire, 76.7% ( $n=23$ ) of them strongly agreed with the same item on the post-course questionnaire. On the pre-course questionnaire results, there were some neutral responses to learning better with ICT ( $n=4$ ), learning in a more interesting way with ICT ( $n=5$ ), being motivated to learn with ICT’, being a self-directed and independent learner with ICT ( $n=4$ ) and teachers’ adoption of more ICT in classes’ ( $n=2$ ). There no neutral responses to these items on the post-course questionnaire. None of the participants disagreed with the item concerning ICT for learning on the post-course questionnaire.

**4.2.2 Findings on the technical dimension of digital literacy.** The second part of the digital literacy questionnaire was related to the technical aspects (between items 8-13) which asked the participants to reflect on their ICT skills in general and such as keeping abreast of current technologies and dealing with technical problems on digital devices. The frequency analysis showing the technical dimension of the questionnaire is displayed below (Table 15).

Table 15

*Mean Scores of Pre-Course and Post-Course Digital Literacy Questionnaire: Students' Attitudes Towards the Technical Dimension of Digital Literacy*

Statements about the technical dimension of digital literacy	<i>M</i>		<i>SD</i>	
	Pre-course	Post-course	Pre-course	Post-course
8. I know how to solve my own technical problems	3.69	4.00	1.01	0.74
9. I can learn new technologies easily	4.30	4.34	0.83	0.68
10. I keep up with important new technologies.	4.23	4.26	0.81	0.66
11. I know about a lot of different technologies.	3.69	3.92	0.97	0.84
12. I have the technical skills I need to use ICT for learning and to produce language that demonstrate my understanding of what I have learnt	3.84	4.07	0.78	0.62
13. I have good ICT skills	4.03	4.30	0.82	0.61

Table 15 demonstrates that new technologies were closely followed by the learners and the relevant item had the highest mean score on the pre-course questionnaire ( $M=4.23$ ,  $SD=0.81$ ). According to the frequency analysis of the technical dimension of digital literacy, all participants reported on the post-course questionnaire that they had good ICT skills. 46.2% ( $n=12$ ) of the students agreed that they had good ICT skills on the pre-course questionnaire and this percentage increased to 53.8% on the post-course questionnaire. In terms of solving their technical problems, 40% ( $n=10$ ) of the students agreed and 60% ( $n=15$ ) of them strongly agreed with the item on the pre-course questionnaire.

Only one participant reported that they do not possess the technical skills required to use ICT for learning and to produce language that demonstrate their understanding of what is learnt on the pre-course questionnaire; however majority of the students either agreed ( $n=16$ ) or strongly agreed ( $n=6$ ) that they possessed the required skills for using ICT in language learning on the post-course questionnaire. The number of participants who replied 'neutral' to this item decreased to  $n=4$  on the post-course questionnaire. The percentage of participants replying 'neutral' to the



item related to the knowledge of various technologies( $n=3$ ) and learning new technology easily ( $n=3$ ) remained the same on the pre-course and post-course questionnaires.

**4.2.3 Findings on the cognitive dimension of digital literacy.** The third part of the digital literacy questionnaire was related to the cognitive elements (items 14&15) which asked the participants about their confidence and familiarity with some digital issues. The frequency analysis of the cognitive dimension of the questionnaire is provided in Table 16.

Table 16

*Mean Scores of Pre-Course and Post-Course Digital Literacy Questionnaire: Students' Attitudes Towards the Cognitive Dimension of Digital Literacy*

Statements about the cognitive dimension of digital literacy	<i>M</i>		<i>SD</i>	
	Pre-course	Post-course	Pre-course	Post-course
14. I am confident with my search and evaluate skills in regard to obtaining information from the Web	3.69	4.34	1.01	0.48
15. I am familiar with issues related to web-based activities e.g. cyber safety, search issues, plagiarism	3.57	3.96	0.80	0.44

The frequency analysis of the cognitive dimension of digital literacy showed that while 43.3% ( $n=13$ ) of the students agreed that they felt confident about searching and evaluating skills when they obtain information from the Web on the pre-course questionnaire, this percentage was 56.7% ( $n=17$ ) on the post-course questionnaire. It can be seen from the data in frequency analysis that 40% ( $n=16$ ) reported that they were familiar with themes relevant to web-based activities on the pre-course questionnaire and 60% ( $n=24$ ) of them strongly agreed with the item on the post-course questionnaire (see Appendix M).

**4.2.4 Findings on the social emotional dimension of digital literacy.** The forthand the final part of the digital literacy questionnaire was related to the social-emotional aspects (items 16&17) which was aimed at capturing the participants' attitudes towards the relationship between ICT and collaboration as well as their use of the Internet for seeking assistance from peers. Table 17 presents the mean scores and standard deviations of the social-emotional dimension of the questionnaire.

Table 17

*Mean Scores of Pre-Course and Post-Course Digital Literacy Questionnaire: Students' Attitudes Towards the Social-Emotional Dimension of Digital Literacy*

Statements about the social-emotional dimension of digital literacy	<i>M</i>		<i>SD</i>	
	Pre-course	Post-course	Pre-course	Post-course
16. ICT enables me to collaborate better with my peers on course work and other learning activities	4.23	4.65	0.71	0.48
17. I frequently obtain help with my university work from my friends over the Internet e.g. through WhatsApp, Instagram, etc.	4.07	4.73	0.97	0.45

The results obtained from the frequency analysis of the social-emotional dimension of digital literacy questionnaire showed that 63% ( $n=17$ ) of the students strongly agreed on the post-course questionnaire that they collaborated better with their peers with the help of ICT to complete course work and additional activities for learning. The percentage of the students who strongly agreed that they often got help with their course work from peers over the Internet was 65.5% ( $n=19$ ). According to Table 17, while the item related to the role ICT in facilitating collaboration had a higher mean score ( $M=4.23$ ,  $SD=0.71$ ) on the pre-course questionnaire, the higher score was obtained from the item which is related to receiving assistance from peers for course work through some social media websites ( $M= 4.73$ ,  $SD=0.45$ ) on the post-course questionnaire.

### 4.3 Findings on the Weekly Achievement Test Scores of Experimental and Control Groups

The experimental and control groups were compared based on the grammar sections of three weekly achievement tests administered throughout the module which lasted five weeks. Test of normality was conducted to identify if the data fit the normal probability distribution (see Table 7). In this study, Kolmogorov-Smirnov test was performed and when the values were analyzed, the p value was  $p=0,013$   $p<0,05$ . Dörnyei (2018) posited that “if the data is not normally distributed, parametric tests are not appropriate and we need to use non-parametric procedures” (p. 227). Because the data do not follow normal distribution, Mann-Whitney U test was conducted as it is limited to nominal variables with only two values.

Table 18

*Comparison of the Experimental and Control Group's Test Results*

	<i>M</i>
Mann-Whitney U	280.500
Wilcoxon W	686.500
Z	-1.464
Asymp. Sig. (2-tailed)	.143

As a result of the Mann-Whitney U analysis, the asymptotic p value was greater than 0,05 ( $p=0,143$   $p>0,05$ ); thus, the averages calculated for the three weekly achievement tests of the experimental and control groups did not yield statistical significance.

### 4.4 Results of the Semi-structured Interviews

Mackey and Gass (2005) argued that issues such as lower proficiency in the L2, perceptions and attitudes may compromise the analysis of questionnaire data. To avoid such a challenge in the present study and to capture the perceptions of the learners, after the flipped learning questionnaires had been administered and the descriptive statistics were analyzed, interviews were also conducted with eleven students from the study.

Semi-structured interviews were aimed at gathering richer data on students' perceptions of the flipped approach and exploring the views of the learners in more depth with respect to the flipped approach, the online platform, the tools and the methods which were used to facilitate the learning environment. The interview responses about the flipped classroom were significantly consistent with the numerical scores from the questionnaire instrument.

The interviews were coded in a selective manner and a thematic analysis was conducted. Thematic analysis enabled the teacher to code the interview data by identifying the patterns within the transcriptions. The transcriptions were then analyzed closely to gain an overall insight of the student views on flipped learning. The quantitative data from the flipped learning questionnaire and pre-course/post-course questionnaires provided an overall picture of the learners' attitudes towards flipped classroom and digital literacy skills. However, these instruments were limited in that learners cannot elaborate on their experiences. The interviews enabled the teacher to address this limitation by asking the students for their comments with respect to various components of the research. The preliminary findings of students' responses indicated a largely positive experience in terms of learning through a flipped approach and enhancing digital literacy skills throughout the learning process.

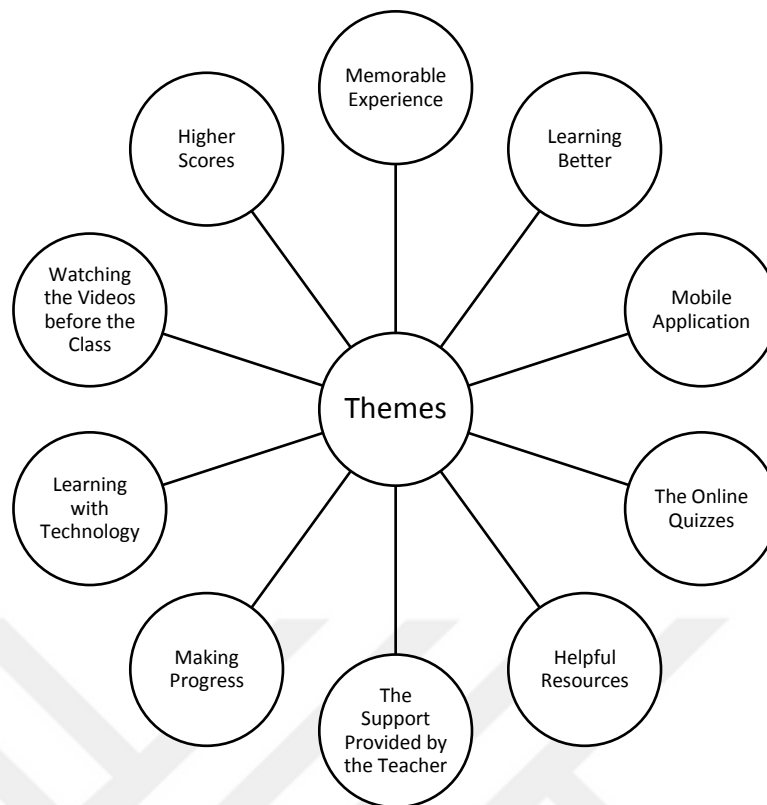


Figure 17. Themes emerging from the semi-structured interviews

The major findings suggest that there are several factors that influence the attitudes of students with respect to flipped learning. Key ideas that emerged from the interviews with students were categorized under certain themes which will be outlined in detail under sub-headings through this part of the study. The overarching themes from the interviews were *memorable experience, learning better, mobile application, the online quizzes, helpful resources, the support provided by the teacher, learning with technology, watching the videos before the class, making progress and higher scores*. The thematic map of the interviews is provided above(Figure 17).

***Memorable experience.*** The flipped classroom was implemented for five weeks during the fifth module in the institution where the study was conducted. Even though some students reported familiarity with the approach, the interviews revealed that they never had prior experience of flipped learning. After the implementation, it was observed that the students who participated in the present study mostly have positive attitudes towards the flipped classroom approach. During the interviews, some students ( $n= 7$ ) reported that they had a ‘memorable experience’ throughout the

course. Learners associated their retention of the grammatical objectives with phrases such as ‘lasting effect’ and ‘remembering for a longer period time’. Some participants ( $n= 5$ ) also compared the effects of the flipped learning and traditional learning on their overall performance and highlighted that they can remember more information with the flipped learning approach. The following are sample excerpts referring to the lasting effect of flipped learning:

*“We learned better and did a lot of practice. When we studied before class studying in class was much more effective. We remembered more information.”*(S1, personal communication, July 5, 2019)

*“We could learn better and didn’t forget the information for a longer period of time. This had a lasting effect. Even if we don’t study before the proficiency exam, we can still remember a lot.”* (S2, personal communication, July 5, 2019)

**Learning better.** This study set out to explore the effect of the flipped classroom approach with respect to learning and revising English grammar. Students were asked about their views on the effectiveness of the approach in terms of practicing grammar after their experiences. They all said that revising before the class and completing the quizzes helped them learn the grammar objectives in a more effective way. Interviewees repeatedly referred to the flipped learning approach as a method which augments their learning process and facilitates receiving instant feedback. Many students ( $n= 7$ ) associated flipped learning with better learning opportunities than the traditional approach to learning grammar. A sample response highlighting the benefits of the approach is as follows:

*“I completed the quizzes and then checked my correct and incorrect answers. It helped me a lot when learning grammar. I also sent you (the teacher) some screenshots when I had a question in my mind. I think it was very useful. It was fast. They helped me learn better.”*(S11, personal communication, July 5, 2019).

Majority of the students compared their experiences with the previous module they had studied in the program. As the program where this study took place operates in a modular system, learners could easily compare the practices and strategies used for certain modules. Some students attributed their success and better understanding of the topics to the flipped classroom environment. Below is a sample response regarding the effectiveness of the flipped classroom:

*“I don’t like studying but the online tools are fast and help revision. I wish we could have this system since the A1 level. I did pass; but learning doesn’t always happen. It had a lasting effect when we studied the videos and completed the quizzes. The visuals were also very useful.”*(S6, personal communication, July 5, 2019)

**Mobile application.** The mobile application of the Google Classroom which provided access to the materials was downloaded by all participants. Students mostly ( $n=9$ ) commented that having access to the materials via the mobile applications facilitated learning and helped them retain more information. These participants stated that being mobile encourages practice and underpins effective learning as it exceeds the confines of the classroom. They highlighted that mobile phones are indispensable for their education. Below are three student excerpts suggesting that members of the ‘always plugged-in’ generation tend to prefer mobile learning over traditional methods:

*“We can’t live without mobile phones. Having a mobile app is a great advantage. If we had papers, we would always look for them or lose them. the videos, going to the links and online quizzes were very easy.”* (S5, personal communication, July 5, 2019)

*“Because I carry my mobile phone everywhere, watching the videos with my mobilephone was easier.”* (S3, personal communication, July 5, 2019)

*“I really like studying with my mobile phone. It was far better than books.”* (S8, personal communication, July 5, 2019)

This trend and preference for mobile learning was also revealed by the questionnaire findings. All students either agreed or strongly agreed that they are more flexible and mobile as a learner. Therefore, their attitude towards technology-enhanced language learning and mobile learning was highly positive.

***The online quizzes.*** Flipped learning allows the teachers to assess learners formatively and monitor their progress on an ongoing basis. After watching the videos, students were required to complete the online quiz embedded on the platform Google Classroom or Kahoot homework, which is called a challenge, shared through a weblink. Students commented mostly positively on the online quizzes and reported that they enhanced the learning process and increased their scores on the weekly achievement test compared to the previous modules. The online quizzes were voluntary; yet all the interviewees reported that they had completed them before coming to class so that they could participate in the classroom activities. As digital natives, all interviewees highlighted that they make great use of their mobile devices, so they could keep up with the online quizzes on a weekly basis. Some sample responses regarding the advantages of the online quizzes are displayed below:

*“Thanks to the online quizzes, I scored higher on the tests. I think I like studying with technology. The resources were really helpful. I really like studying with my mobile phone. It was far better than books.”*(S10, personal communication, July 5, 2019)

*“In fact, I studied less throughout this module. However, the videos, the online activities were quite effective, and I got higher marks on the tests. They were higher than I had expected. I think the videos were also helpful for learning vocabulary.”*(S9, personal communication, July 5, 2019)

*“Normally I am not good at grammar. Because the quizzes showed me the correct and incorrect questions, I could remember easily. They were always similar to the questions which were on the weekly tests.”*(S2, personal communication, July 5, 2019).



The feedback students receive in the interactive environments can enable them to reflect more critically on their learning process and develop a greater sense of ownership of the approach. In this study, students reported the significance of the impact of feedback in real time which reinforced their responsibility for learning. Below is a sample response of a student regarding the feedback processes in the flipped classroom:

*“I started to score better on the weekly achievement tests. Especially for grammar. Because you sent the videos at the beginning of each week, we got prepared and completed some activities before the classes. Because we logged on the system, you could provide us with some feedback.”* (S4, personal communication, July 5, 2019)

The results from the interviews seem to be consistent with the findings on the questionnaire items in that a great majority of the students strongly agreed they can study at their own pace and the non-traditional classroom activities were meaningful. The online assessment instruments used throughout the implementation were designed as ‘non-traditional’ supplementary materials.

***Helpful resources.*** Some students stated that they did not have the study skills required for the university or that they lacked self-discipline to organize their studies. Having access to the materials facilitated some students’ learning processes further by enabling them to take more advantage of mobile learning through flipped classroom approach. Below is a student comment referring to the usefulness of the materials:

*“It was also useful for me because I don’t like studying from the notes. Because I watched the videos and read the notes, I think they were helpful for the weekly achievement tests. I think it facilitated the process and it was more memorable.”* (S7, personal communication, July 5, 2019)

***The support provided by the teacher.*** The questionnaire instrument revealed that learners were supported with respect to their flipped classroom experiences. Participants highlighted the role of the teacher throughout the process and they all agreed that they could interact more with their teacher compared to traditional

classroom. Students mostly ( $n=9$ ) asked for help and reported receiving feedback on their online work; either through the social media (the class WhatsApp group) or when they arrived class. Learners also commented that their mobility helped them receive more support from their teachers. Below are some learner comments that highlight the support from the teacher throughout the implementation of the flipped classroom:

*“The examples you (the teacher) provided were especially helpful before the weekly achievement tests. B2 is considered the most difficult module, however, I found it easier and I think it is because of the resources you provided.”*(S10, personal communication, July 5, 2019)

*“You (the teacher) pointed out the errors and encouraged us to revise or watch the video again. Thus, it was quite useful.”*(S2, personal communication, July 5, 2019)

*“I could take screenshots of the quiz questions and asked you (the teacher)later.”*(S5, personal communication, July 5, 2019)

***Making progress.*** In accordance with the positive attitude towards flipped learning, there was an overall agreement among the learners that this instructional method helped them progress. Below is a student excerpt that highlights the objectives of the approach while discussing the theme of making progress:

*“There is a certain flow and because students can study before, they could make some progress and they could learn fully. Studying before the classes is far better than coming to class and encountering a topic for the first time.”*  
(S1, personal communication, July 5, 2019)

***Learning with technology.*** Integrating an instructional design model that addresses the efficient use of technology is of vital importance in a flipped classroom. The prevalent role of technology and the tools used for flipping the EFL classroom requires deliberate feedback and support. Students of flipped learning with

greater access to digital technologies in terms of education, who are categorized as digital natives or Gen Z, were asked to comment on the use of technology in general, and the tools which were used to support the process throughout their experience. One student excerpt reflects some key ideas that emerged during the interviews with respect to learning with technology:

*“The world is changing. I am more traditional when it comes to technology. When you get rid of prejudice, you see that each generation has a different way of learning. You are born with a computer and a mobile phone. Of course, you learn better with these tools rather than writing. (S4, personal communication, July 5, 2019)*

Another student pointed out to the differences in terms of generations while learning with technology:

*For example, my parents believe learning through writing is more effective; however, the generations are changing now. A five-year old is constantly watching video on YouTube. When the same kid watches an educational video on YouTube, s/he won't forget it easily. As the generations are changing, their learning styles are also changing.” (S7, personal communication, July 5, 2019)*

The interview data was compatible with the results of the digital literacy questionnaires as well. According to the post-course digital literacy questionnaire (see Table 14), learners' ICT skills were enhanced as a result of the flipped classroom instruction. Below is a student comment that highlights the positive attitude towards learning through technology:

*“I'm using technology in an effective way for the first time in my life.” (S6, personal communication, July 5, 2019)*

***Watching the videos before the class.*** With more and more students actively seeking learning through online materials, the language classroom has proved to be increasingly suited for flipped learning. A variety of materials including prerecorded

videos through screencasts were used in the flipped classroom. Throughout this study, students watched the videos uploaded on Google Classroom on a regular basis either on their laptops, tablets, desktop computers or smartphones, which diversified the modes of learning. The responses about learning with video revealed that learners benefited from the experience. Below are some of the representative excerpts referring to the advantages of the videos:

*“I liked those videos. I realized that I could understand the videos in English. When I watched them again, they seemed a lot easier. There were no problems with the videos. They were very short.”* (S10, personal communication, July 5,2019)

One student commented that the videos and quizzes complement one another and said:

*“I want to watch them again before the final exam. For example, last week I forgot to watch the video and couldn’t complete the online quiz. Then I watched the video and I completed the quiz easily.”* (S3, personal communication, July 5, 2019)

In the flipped learning questionnaire, students were also asked about the function of the video in their learning process and they agreed that video made them learn more. One student highlighted the impact of these videos as below:

*“On the Internet, there are a lot of videos. We have no idea if these videos are suitable for us. When you uploaded the videos, the topics were specific.”* (S5, personal communication, July 5, 2019)

All students reported in favor of learning with video in the questionnaire. Comments as the one below demonstrated the impact of video for the flipped classroom:

*“Before this module, we came to class, studied the topics and then the examples. It was very loaded. We had to understand everything on the same day. We didn’t have the opportunity to go back. We could check some videos*

*on the Internet. But I couldn't really get these videos* (S7, personal communication, July 5, 2019)

**Higher scores.** All students who participated in the interviews pointed out that they learnt grammar in an effective way which resulted in higher scores in terms of weekly achievement tests compared to their previous four modules they had completed in the program. Below is a sample response referring to the effectiveness of the flipped classroom in terms of higher scores:

*"I had terrible grades in B1; and did a little bit better in B1R. In B2, I can understand the topics better and started to get better grades."*(S2, personal communication, July 5, 2019)

Another student also referred to the higher scores while discussing the impact of being mobile:

*"My exams scores also got higher. Thanks to these resources, I got the highest scores in B2 module. Actually, I don't know how to study. I don't have self-discipline. Because I carry my mobile phone everywhere, watching the video swith my mobile phones was easier. I think it is more helpful."* (S4, personal communication, July 5, 2019)

The results of the semi-structured interviews show that flipped learning was adopted as a learning mechanism by the students who did not take the opportunities of the approach for granted. The L2 classroom is a setting where the responsibility of learning is on the student and their role is to arrive the classroom prepared to practice and apply the knowledge they have gleaned.

Students all agreed on the questionnaire that the combination of video and non-traditional lectures is beneficial for learning (see Table 9). In the interviews, all students highlighted that a lively and dynamic classroom environment is integral to language learning. There were cases in which they mentioned the significance of group discussions, classroom games for language learning or the joy they find in gamification applications such as Kahoot or Quizlet, tools which have been adopted in diverse disciplines, especially in ESL/EFL settings.

Given the permanent and increasingly prominent role of technology in language classrooms and the push for online language learning, the findings from the questionnaires and the interviews demonstrate that it is not really about the tools or approaches; it is about what is done with technology and the planning and implementation phases orchestrated to foster students' learning.

#### 4.5 Results from the Teacher's Journal

This section presents data obtained from the teacher's journal that was kept throughout the study; for a period of five weeks when the flipped classroom was being implemented. Foord (2009) stated that "a journal is a written account of events that happen in the classroom and your reflections on them" (p. 84). The reflections about the flipped classroom experience of the teacher focused on the challenges encountered throughout the process.

The major challenges perceived by the teacher throughout the implementation of flipped classroom were coded as challenges of screencasts, sustaining motivation of the learners, providing timely online feedback, digital nativeness of the learners, learner training and being 'always on' stress (Figure 18). These main themes which posed certain challenges through the process will be elaborated on in the following parts.

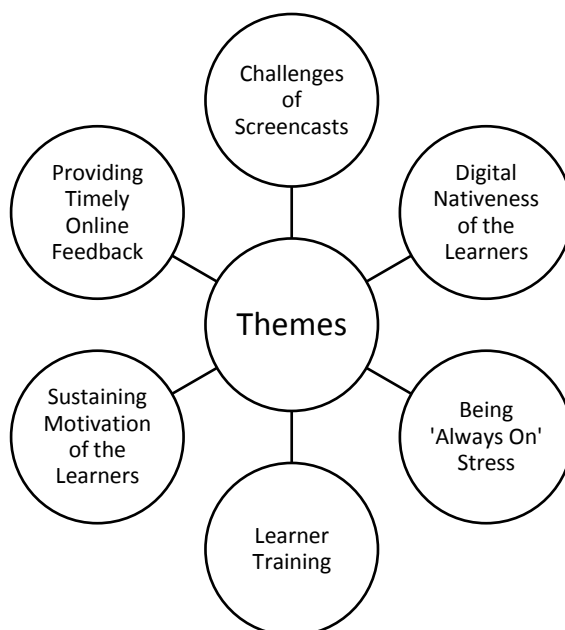


Figure 18. Themes emerging from the teacher's journal

**Challenges of screencasts.** Preparing for a flipped classroom takes more time and effort than a traditional class. The task of creating or curating video content for learners can be daunting in that among the biggest challenges with being a flipped educator is the huge amount of time it takes to create course content or revise the existing materials such as the videos or online quizzes as well as the supplementary content to support the learners who need further assistance. Solid virtual platforms and tools have to be employed to ensure an effective flipped learning experience. In this study, Google Classroom was the online platform where all the materials were uploaded and embedded. For creating the video content, screencasts were employed; which are digital video recordings capturing the actions that take place on a computer screen. The strategy was to have voice-over narration to teach the instructional content. The challenges of the screencasts revolved around setting up the equipment and avoiding any pitfalls related to the environment such as the poor quality of the display or sound. Therefore, many test recordings were performed to overcome any potential hurdles. Here is an excerpt taken from the online journal of the teacher about creating the screencasts:

*“The program ‘Screencast-o-matic’ is user-friendly and free. I just need to create engaging and fun pieces. It is very important to have good quality equipment.”(June 10)*

Screencasts require a considerable amount of time to prepare and record. In addition, preparing and delivering the flipped classroom content requires being a teacher who is tech-tuned and ready to go global for developing professionally. The teacher made some changes to the screencasts through the research; such as incorporating short movie scenes or playing a song that comprises the grammar objectives to be covered. The teacher conducted a lot of research to be able to manage this dynamic cycle of teaching and learning; through watching sample screencasts by educators.

**Digital nativeness of the learners.** The flipped classroom concerns the comprehension and consumption of the instructional content so that learning can be extended beyond the confines of the classroom. This process necessitates to be digitally-literate in addition to being autonomous and self-reliant in terms of learning new content. The main challenge with respect to the digital literacy of the students

was that they all had varying degrees of digital literacy. Below is an excerpt from the teacher's journal in the form of post-lesson reflection about the perceived levels of students' digital skills:

*“Some of my students were happy about using technology; they told me that really like using tech tools in and outside the class. However, some of them expressed their concern by saying that ‘they are not a big fan of some apps’ they have been using in class.” (June 11)*

In the present study, learners had varying degrees of digital literacy which was manifested in their engagement throughout the weeks with the materials and overall learning experience. Some were more adept at accessing the materials and making the best use of them; however, some of them occasionally struggled with learning at their own pace using the digital devices and sources, which can be attributed to their digital literacy skills. The results from the questionnaires show that they appreciated learning with video and that they learn better with ICT. Therefore, the tech issues that were observed by the teacher did not seem to impede the learning process.

**Being ‘always on’ stress.** Teaching can be a very lonely and demanding job. Experimenting with new technologies and deciding on the weekly content, preparing the materials and updating the online platform had to be completed to initiate the weekly flow of the flipped classroom, which was another challenge in terms of time management. Aligning the videos and practice materials with the curriculum of the program as well creating the videos through Google Forms also required more planning and meant more responsibility. This whole process led to being ‘always on’, which, in fact, created some stress. The teacher reflected on the stress she experienced as below:

*“The preparations require a great deal of time; so, I have to be online for along time to deal with all this work for creating the screencast, or adapting the materials and creating online quizzes or motivational activities which can maximize learning. But all these steps can be stressful.” (June 17)*

The time required for creating an effective learning environment may cause some degree of stress in that this approach is not about incorporating the fancy tools



and creating high-quality videos; it is more concerned with expanding the repertoire of the language classroom; a classroom which capitalizes on the strengths of diverse approaches.

***Learner training.*** Educators are well aware of the fact that any new strategy in a language classroom requires some orientation to the new model, the new practices and the expectations. This orientation requires learning training and modeling in any educational setting.

In the present research study, the first week was used as a period for walking the learners through the flipped classroom approach and modeling the attitudes required for preparation and completion of the course content. Training the learners for the flipped classroom activities was of utmost importance in facilitating the process. In flipped learning, the instructors usually take on the role of coaches, who model the effective use of digital tools and participation. Here is an excerpt from the journal of the teacher which outlines the challenge of learner training for flipped classroom:

*“I started by familiarizing them with Google Classroom. I asked all my students to download the application; and we took a lot at the content already uploaded. I showed the first screencast and told them they were expected to complete the activities before they arrived the class.” (June 11)*

Going through the online platform and the quizzes also required some learner training. It was essential to spend a considerable amount of time on familiarizing the learners with the steps of completing the online assignments. Here is another excerpt from the online journal of the teacher:

*“We went online and completed a quiz individually created by using Google Forms. Students could see the benefit of receiving instant feedback through the online quiz. After all this online work, we engaged in some speaking activity that made of use one TED video we had seen in the previous class.(June 11)*

Learner training requires a smooth transition process in the flipped classroom and the teacher commented on it as below:

*“I think learner training was very challenging in that I had to make use of a lot scaffolding while trying to familiarize my students with the approach.”(June 13)*

Learner training can be time-consuming and may require careful planning and enthusiasm in that it is the overarching theme of the implementation process. Clearly communicating the objectives and rationales for the activities and a road map was essential for highlighting the individual accountability for the class work.

***Sustaining motivation of the learners.*** In addition to learner training, planning the in-class activities with the intention of finding strategies for involving learners is one of the tenets in harnessing the flipped model engagement. Student acceptance of ownership of their learning is one of the key aspects of every classroom. This becomes increasingly significant in a flipped classroom context in that some students may possess poor study habits and time management skills. They may find it challenging to cope with the course content and struggle to fully prepare for the in-class activities. Learners may lack high enough level of motivation to complete the pre-assigned tasks. The teacher commented in her journal with respect to motivation as below:

*“Watching the videos or completing the quizzes is not an easy task for them. I need to make sure that I establish good rapport with them so that I can make them to be actively involved in the activities they will be assigned. I will need some motivational strategies through the process.” (June 15)*

Even though there were concerns about the level and motivation of the students, both the completion level of online quizzes on a weekly basis and the results of the questionnaires show that students were really engaged with the materials. The responses to the questionnaire and the interviews also demonstrate that the flipped classroom provides more opportunities to interact with learners and to work on the motivational aspects of the model.

Digital natives’ motivation toward the use of technology and their engagement with online materials and smartphone applications may be considered to foster motivation and promote student engagement. The design of the flipped classroom may pose a challenge in terms of student motivation and engagement in that unless the materials and activities are planned thoroughly, learners may easily tune out.

Motivation is enhanced when learners are presented with time and opportunity to dig deeper into the course content.

***Providing timely online feedback.*** Providing constructive and timely feedback following the assessment processes in a language classroom can help maximize the effectiveness of the courses and can guide students to be instrumentally motivated to progress further. In this study, formative assessment and feedback practices were informal to gauge the participation and learning of the students. As the flipped classroom activities were voluntary and did not have an impact on the overall course grade, learners had to be reminded and directed about the value of completing the activities and receiving feedback. Below is an excerpt from the teacher's journal with respect to providing online feedback:

*"I need to spend a considerable amount of time on checking student work on Google Classroom. This formative assessment aspect can be very motivational for the learners as they will be also evaluating their own progress."*(June 18)

Time management was another challenge that the teacher encountered while providing feedback and arranging in-class communicative activities. An excerpt below presents the challenge with respect to managing time effectively:

*"I need to manage my time effectively so that students can get effective and timely feedback. I can also use the class time effectively for either individual or whole-class feedback depending on my purpose."*

The common aspect of all the flipped classroom assessment instruments was that students could receive instant feedback. The teacher referred to the results of these quizzes and homework regularly to gain a better insight into the progress of learners in their mastery of grammar objectives. Providing feedback to these online quizzes usually meant more workload for the teacher and more responsibility for learners.

## Chapter 5

### Discussion and Conclusions

This final chapter embarks on a discussion of the findings presented in Chapter 4 pertaining to the research questions and their relation to previous work in the area of flipped learning. The main aim of this research was to explore EFL learners' perceptions and attitudes towards learning and practicing grammar through the lens of the flipped learning model; by moving beyond the hype and buzz surrounding it with a purposeful design for classroom-based research. After implementing the model in an English as a foreign language classroom at a foundation university, the experiences of both the learners and the teacher were addressed and the challenges encountered throughout the process were identified.

The mixed-methods research design employed in this study ensured triangulation through a combination of both quantitative and qualitative dimensions and enabled the teacher to gain much deeper insights and a better understanding of the links between findings. A total of 26 students participated in the study throughout a module between May and July 2019, and all completed a flipped learning questionnaire at the end of the course, as well as pre-course and post-course digital literacy questionnaires. Semi-structured interviews with the participants were conducted and a teacher journal was employed to redirect the spotlight to illuminate the role of the learners and the practitioner in the implementation of a pedagogical model.

The flipped learning model was applied for five weeks to investigate the impact of it on learning grammar, digital literacy and attitudes toward the learning environment. The following section will elaborate on the discussion of each research question of the study, some pedagogical implications, concluding remarks which will outline the summary of the research and recommendations for practitioners with respect to challenges involved, the implementation strategies and future research to investigate the model further in the field of English language teaching.

## **5.1 Discussion of Findings for RQ 1: Learners' Perceptions of Studying and Practicing English Grammar Input Through Flipped Learning.**

To answer the first research question of the study, learners' attitudes towards flipped classroom model were sought through a flipped learning questionnaire and semi-structured interviews to gain a better understanding of the questionnaire data. As mentioned in the literature review, flipped learning studies focusing on L2 contexts have been limited (Basal, 2015; Bauer-Ramazani et al. 2016; Hung, 2016). Further research into the effects of flipped learning in teaching grammar was suggested by some researchers as a result of comprehensive analyses of the related research (Turan&Akdag-Cimen, 2019). Therefore, identifying the impact of the flipped classroom approach on learners' language skills as well as their perceptions through employing different instruments may contribute to build a more solid basis for discussing the implications of the present research.

Both sources of data indicated an overall positive attitude towards learning grammar with this pedagogical approach. The results of this study show that even though students had no previous experience of flipped learning model, majority of them noted that it encouraged them to take more responsibility and to be more flexible and mobile during the learning processes. The data also suggest that learners had an increased level of motivation and were more engaged in active learning. Hence, the study demonstrates a correlation between the flipped learning model and overall student engagement. This finding agrees with the results of the studies conducted in the field and reported increased student engagement and motivation through implementing the flipped classroom approach (Chen Hsieh et al., 2016; Yu & Wang, 2016; Zainuddin&Perera, 2017; Sarkar et al., 2019; Fisher et al., 2019). The findings also show that in the interviews, learners reported an increase in their overall grammar achievement compared to the previous modules they had completed in the program. These results are consistent with those of Webb and Doman (2016) and Huang and Hong (2016) who concluded that the flipped learning model had an impact on student achievement.

In this study, learning through video was a core component of the flipped classroom implementation. The present findings on the usefulness of video for learning new content seem to be consistent with other research which found that learners are enthusiastic and engaged when this medium is employed (Copley, 2007;

Synder et al., 2014). In the flipped classroom, class time is devoted to the activities which build on the knowledge acquired through interaction and productive tasks, usually accompanied by formative assessment and feedback procedures. Chunking instructional content through pre-class and in-class sessions to reduce cognitive load on students, presenting information by means of diverse media and strategies as well as designing meaningful in-class activities that promote communication between learners and language use comprise the main tenets of the implementation of the flipped learning model. During the interviews, learners also highlighted the significance of the video material for their learning process and commented that the videos should be brief and engaging; which corroborates the ideas of Al Zahrani (2015), Ryan and Reid (2016) and Houston and Lin (2012) who suggested that well-prepared, short videos promote a higher level of student engagement. Another recurring theme in the interviews was the 'lasting effect' of the flipped classroom activities emphasized by the learners. Having access to the materials and online quizzes was reported to have contributed to retaining knowledge for a longer period. As mentioned in the literature review, embedded quiz questions can enhance retention of the content (Schacter&Szupinar, 2015). Participants in this study also highlighted that the quizzes helped them remember more information compared to their previous learning experiences in the institution. The fact that students retained more knowledge in the flipped classroom in this study is consistent with other research which found that students could build on the knowledge they had gained prior to the class as a result of the activities completed in the flipped classroom (Danker, 2015).

The flipped learning questionnaire findings indicate that the students found learning through video effective and motivating. The students further expressed the value of communicative activities and peer collaboration in a language classroom. This finding has important implications for designing in-class activities that underpin active learning; which is a core aspect of planning and implementing the model to enhance learning opportunities in the classroom which can complement the flipped instruction. This also accords with the conclusions from the previous studies highlighting the role of active learning in the classroom (Critz& Knight, 2013; Roehl et al., 2013; Fulton & Gonzalez, 2014; Gilboyet al. 2015; Wilson, 2013; Lai & Hwang, 2016). In brief, the study suggests that flipped learning was effective in

terms of practicing English grammar and improving engagement with the content as well as contributing to flexible, independent and self-paced learning.

The design of the study is built around the notions that flipped classroom may offer additional opportunities to manage cognitive load and deepen understanding through active types of learning. Both the findings of the flipped learning questionnaire and the semi-structured interviews indicate that pacing their learning by studying the content before classes might reduce cognitive load as they can acquire a solid knowledge base with respect to the language they are expected to produce.

## **5.2 Discussion of Findings for RQ 2:Learners' Perspectives on Learning with ICT and Their Digital Literacy After Implementing the Flipped Learning Model.**

The second research question of the study was aimed capturing learners' perspectives on the use of digital technologies for learning after the implementation of the approach. To be able to answer this question, pre-course and post-course digital literacy questionnaires that comprise four parts were conducted before the flipped learning model was used and after the implementation process (see Appendix H).

A recent survey showed that Gen Z appreciates the role of technology in enhancing their learning experiences in college (Pearson Education, 2018). In the present study, the high rate of familiarity of the students with the digital tools and the time they spend online suggested that flipped classroom could be a viable method to be employed for teaching the instructional content. These results agree with the findings of other studies, in which diverse academic and geographical contexts were used for flipping the instruction for ELL student (Webb & Doman, 2019). The findings from the pre-course and post-course digital literacy questionnaires demonstrated positive change with respect to learning with ICT and learners' digital literacy was enhanced as a result of the implementation of the flipped classroom model. The role of ICT was explored in terms of motivation, self-paced and independent learning as well as perceptions of the learners regarding the use of mobile technologies for learning. Students' favorable comments during the interviews regarding the motivational aspect of ICT in the flipped classroom is

consistent with the results of the pre- and post-course questionnaire results and the previous research highlighting the positive effects of technology on motivation (Golonka et al., 2014). Both the interview data and the results of the pre- and post-course digital literacy questionnaires suggested that students were taking advantage of ICT to regulate their English studies outside the class. These results agree with the findings of other studies, in which learners reported using diverse technologies to assist their language learning process (Lai & Gu, 2011). At the end of the flipped classroom implementation, all participants agreed that teachers should make more use of ICT in classes; one of the findings supporting previous research that has demonstrated the requirement for teachers to employ digital tools to enhance learning and support students (McLaughlin et al., 2016; Lai & Gu, 2011).

Students continuously engaged with ICT tools for a period of five weeks for studying and revising the grammar topics of the program. Students also highlighted in their interviews that ICT enabled them to become self-directed and study independently, which was also stated on the post-course questionnaire results (see Appendix M). Self-directed use of technology for practicing grammar and equipping learners with digital literacies were integral to the effectiveness of the implementation of the flipped classroom. Both the results of the pre- and post-course digital literacy questionnaires and the interviews showed that the learners agreed that there is a lot of potential in the use of mobile technologies for learning. These results are consistent with those of other studies suggesting that students have embraced the role of technology in education (Park, 2009) and mobile learning enhanced motivation (Hwang & Chang, 2011). The number of students who strongly agreed that they learn better with ICT increased on the post-course questionnaire; which confirms the association between flipped learning and the effective use of ICT tools to enhance learning. There are similarities between the attitudes expressed by the learners in this study and those described by Hung (2014) whose research also demonstrated that the learning materials might have considerably contributed to the EFL learners' learning in and out of class. Another important finding was that a great majority of the students strongly agreed that teachers are expected to integrate more ICT in their teaching. It is encouraging to compare this finding with the idea of having a vast array of opportunities for using digital media to explore our potential as educators, which was expressed by Jones and Hafner (2012).



Digital literacies, which encompass a variety of key skills required for a stronger and thriving generation, are becoming increasingly important in the L2 classroom. Integrating flipped learning practices in the L2 classroom may help promote the development of digital literacies. In accordance with the present results, previous studies have demonstrated that digital literacy practices can enhance language use and they can be fostered through the flipped model (Amicucci, 2014; Webb & Doman, 2019). Students mostly commented in their interviews that they are adept at using digital tools and that these tools make learning more interesting; which was an item that they highly agreed on the post-course digital literacy questionnaire as well. However, the technical dimension of their digital literacy displayed notable differences. The present finding seems to be consistent with other research which showed that digital natives have vastly different characteristics and (Bylin, 2009; Trilling & Fadel, 2009). In brief, the responses of the students on the pre-course and post-course digital literacy questionnaires and the interviews make it clear that flipped learning had a positive impact on their attitudes toward learning with ICT as well as their digital literacy.

### **5.3 Discussion of Findings for RQ 3: The Weekly Achievement Test Scores of the Experimental and Control Groups After the Implementation of Flipped Classroom.**

The third question in this research set out with the aim of comparing the results of the weekly achievement test of the experimental and control group. Three weekly achievement tests were administered to the classes over a period of five weeks. The purpose of these assessment tools was to capture how well the learners were doing in terms of a variety of language skills.

The analysis of the results of the weekly achievement tests did not show any significant difference between the groups. Although these results differ from some published studies which demonstrated significant differences between the experimental and control groups (Lee & Wallace, 2017; Chen Hsieh et al., 2016; Webb & Doman, 2016; Mo & Mao, 2017; Turan & Goktas, 2016), they are consistent with those of Fisher et al. (2019) and Al-Harbi and Alshumaimeri (2016), in that flipped learning model may not lead to higher achievement at the individual level. Although there was not a significant difference between the groups, which can be

attributed to the relatively limited period time for implementing the approach due to the institutional constraints or to the fact that both the experimental and control groups had completed the previous level with very similar scores (see Appendix C), learners reported positive outcomes in terms of their achievement compared to the previous modules they had completed. One of the key themes that emerged during the interviews was the ‘higher scores’ the students reported to have achieved when they attended the class where the flipped classroom was implemented. The semi-structured interviews conducted with the learners demonstrated that they achieved higher scores on the weekly achievement tests compared to their previous modules in the program. Majority of the students commented that their learning processes were enhanced thanks to the flipped classroom materials and particularly videos and the follow-up activities which were aimed at reinforcing the content they had studied before the classes. Even though students’ scores did not increase in terms of their weekly achievement test compared to the control group, they reported that they were motivated to learn with ICT; a finding which was expressed by Frydenberg (2012). The present findings seem to be consistent with other research which found learners associated their increased learning with more meaningful classroom practices and support provided from the teachers and their peers (Nouri, 2016). The students also reported increased mobile learning which contributed to their studies and study skills as well as their autonomy and digital literacies. In brief, what makes this whole study significant is not the scores; but the overall positive attitude towards learning a language with enthusiasm by means of an effective combination of technology and pedagogy. Learners were expected to perform quite similarly when the course started due to fact that they had very parallel performances in their previous four modules they had completed in the program. In addition, the study relied more on the qualitative strand in terms of the impacts of the approach.

#### **5.4 Discussion of Findings for RQ 4: The Experiences of the Teacher Regarding the Implementation of the Flipped Classroom**

The final question in this research sought to identify the experiences of the teacher throughout the study. The rationale behind keeping a journal throughout the research was to facilitate the reflective practice. Foord (2009) argued that “diaries are a good way to foster self-improvement” (p.84). The journal in this study was used as

reflection tool which focused on the challenges that pertain to the planning, implementation and feedback processes perceived by the teacher. The purpose in keeping a journal of the flipped classroom experience was twofold: firstly, to reflect on the flipped learning process; secondly, to consider the challenges in a critical way through reflection and links between theory and practice in the discipline. Professional learning needs to be based on the right approaches which can impact teacher practice and student learning. Hence, reflection is integral to the continuous growth of a teacher, through seeking student feedback or keeping a journal.

Experimenting with new pedagogical approaches can be a daunting task for an educator. Given the workload and administrative responsibilities as well as professional development expectations, implementing an approach such as the flipped classroom may put an extra burden on the teacher. Therefore, some challenges may arise throughout the application process; as it also happened during the present study.

Bailey (1990) highlighted that the researcher keeping the journal revises the entries and looks for patterns and significant events. The themes which were identified concerning the challenges perceived by the teacher were related to screencasts, sustaining motivation of the learners, providing timely online feedback, digital nativeness of the learners, learner training and being ‘always on’ stress.

The findings drawn from the teacher’s journal overlapped with many of the hurdles argued in the previous studies. The literature has demonstrated some challenges when flipping the classroom such as e-learning readiness (Yilmaz, 2019) or performing poorly due to the lack of motivation (Sayeski et al., 2015). Some students also referred to studying outside the class as an extra burden (Smith, 2013).

The present study also faced some challenges with respect to the ‘digital nativeness of learners’ which could be expressed as varying levels of technology competency among the participants. The digital nativeness level of the students posed some challenges; however, thanks to the increased amount of in-class time with learners, the teacher could reflect on this hurdle and deal with such issues by learner training and modeling; which was another theme emerging from the notes of the teacher. As Bylin (2009) argued no two digital natives are similar in terms of their digital literacies. Consequently, the teacher curated the materials in accordance with the individual needs of the learners.

Using the screencast technology was a new step employed by the teacher in this study. Informed by the previous studies in flipped learning which suggested that the videos need to be brief and engaging for the students, the teacher prepared and compiled the digital materials based on the implications and suggestions in the literature concerning the use of digital media to facilitate the instructional strategies (He et. al., 2016; Giuliano & Moser, 2016; Zainuddin&Attaran, 2016; Zainuddin& Halili, 2016).

Another challenge that emerged from the teacher's journal in this study was the motivational aspect, which usually arises in the application of all new educational paradigms. The design of the digital materials, the online quizzes and the supplementary smartphone applications were all curated with the aim of sustaining motivation through the course. Dörnyei (2001) suggested that teachers should seek to become good enough motivators rather than struggling to achieve a 'supermotivator' status (p.136). Before suggesting some basic techniques for motivation, he also argues that "a few well-chosen strategies that suit both you and your learners might take you beyond the threshold of the 'good enough motivator' creating an overall positive motivational climate in the classroom" (Dörnyei, 2001, p. 136). Fostering the motivational atmosphere both in the classroom and on the digital platform required a great deal of reflection on the teacher's side; however, with some strategies that were used along the way, the implementation of the flipped classroom was considerably facilitated. Some of the key strategies employed by the researcher to overcome the hurdles are given below in the pedagogical implications section of the research.

### **5.5 Pedagogical Implications**

Given the huge amount of data pouring across networks, in today's connected world, educators need to achieve the right balance between pedagogy and technology. The innovations reported in the literature owe much to the work of passionate educators who pursue those innovations. Many of these growth-oriented educators think their instructional methods could use some fine-tuning; therefore, they have become more attuned to the developments in their fields. However, it takes time for a new pedagogical model such as the flipped classroom to blend seamlessly in the current classroom practice.

A large and growing body of literature has investigated the ways flipped learning can be applied in EFL settings. However, there is no one-size-fits-all approach to designing and implementing flipped learning. Educators who cherish trials that could blend boundaries in a positive way can go a long way toward achieving deeper learning and student engagement. With that in mind, some instructional strategies to help teachers orchestrate learning and assist students learn in a flipped classroom are suggested as a result of this study:

1. Flipped learning is an appropriate approach to incorporate into an L2 setting to extend the learning opportunities beyond the classroom and to reduce cognitive load.
2. The digital world is brimming with content; however, the materials for flipped learning need to be structured in a way that it can promote engagement, personalized and richer student learning.
3. Learners need to be guided and transitioned into the practices that lay the foundation of the model gradually to avoid initial pushback.
4. Simply flipping the classroom does not result in higher levels of student achievement. The in-class activities are prepared so that they can build upon knowledge gained from pre-class instructional content. The opportunities for scaffolding need to be seized, and the instructional design needs to address the efficient use of technology with the end-user in mind.
5. The active learning opportunities, especially production activities that combine speaking and writing practice in the EFL classroom, may be designed to help learners demonstrate the content knowledge they have gleaned.
6. Once preferred tools are selected for screencasts, the video content needs to be kept short in that it may help reduce cognitive load through publishing videos with content that does not exceed a couple of minutes.
7. Teachers may be intimidated by the challenge of designing their own digital resources. However, the process of preparing the recordings, vodcasts, podcasts, screencasts and all relevant materials for the flipped classroom may contribute to the professional development of the practitioner in that these might be valuable self-evaluation instruments for gauging one's own teaching style and methods.

Stepping out of comfort zone is the key aspect of a growth-oriented mindset. Based on the results of the study, it can be recommended that flipped learning model can be implemented for advancing teacher learning and enhancing student engagement.

## **5.6 Conclusions**

The purpose of this research was to contribute to the growing line of studies that investigate the effects of the flipped learning model in an EFL setting. The main areas of investigation were the students' perceptions of using the flipped learning model, the impact of their perceptions on the feasibility of the approach and the challenges faced by the teacher when applying the model.

The swift advance and wide diffusion of technology is dramatically shaping the way we make sense of the world through the medium of connectivity. The last few decades have seen an exponential growth in the pedagogical strategies which leverage the potential of ICT in language learning and teaching. The main aim of this research was to embark on a study of the emergent characteristics of flipped learning, which has been one of the strategies opening up a whole new frontier in the EFL classroom.

The major conclusion drawn from the study is that flipped learning provides a solid pedagogical framework that could result in deep changes in learning and classroom climate and sustain ICT-supported innovations. This method opens up new possibilities to plan activities which promote active learning in a dynamic environment and teachers can connect theory and practice while fostering group work, class discussions, collaboration, formative assessment and student engagement as well as spicing up the activities with gamification elements.

One of the primary benefits of flipped learning is that it helps reduce cognitive load in that learners may develop some familiarity with the materials and tools that facilitate instruction. There was also evidence in the present study that the flipped learning environment encouraged greater autonomy with learning and that digital activities acted as a conduit for retention and reducing cognitive load.

In the present study, the design of the pre-class resources and materials was underpinned by the principles of cognitive load theory. The pre-class studies were aimed at introducing some key topics to the forthcoming class and included some online quizzes for students to gauge their understanding and identify any challenges

related to the materials. Students were encouraged to control the pace of the videos so that they could achieve better learning, as manipulating the pace can help learners manage cognitive load (Clark et al., 2006).

The evaluation of the implementation of resources was measured by in-class activities which were supported by heightened interaction and communication. The in-class activities were centered around consolidating the knowledge gained before the classes. Collaborative tasks, discussions, gamification elements incorporated into some production activities were all designed to promote active learning. As it was pointed out by Bonwell and Eison (1991), these active learning opportunities were characterized by less emphasis on content delivery while fostering student engagement.

Scaling up valuable face-to-face instructional time for dealing with the challenges of language learning process require a rigorous and disciplined quest for assisting learners master a second/foreign language. In today's classrooms, digital natives seek for opportunities to engage with tech-driven methods and innovative approaches to language learning. Since Prensky (2001) coined the term 'digital native', it has been used extensively and it is attributed to the members of Gen Z assuming that all young people are intrinsically versed in digital technologies. However, as it was highlighted in the discussion of digital literacies of this research, Gen Z still needs training no matter to what extent their lives revolve around tablets, smartphones or computers.

The current wind of technology sustains the proliferation of digital tools. Nowadays, educators in the field of foreign language teaching are confronted by a call to locate resources and incorporate new applications into their teaching contexts as the competences needed in the knowledge economy are transforming. The skills set that learners and teachers of the 21st century need is compatible with the requirements of educational approaches such as the flipped classroom in that it promotes 21st century skills such as collaboration, communication, critical thinking and creativity; namely, the four Cs of 21st century learning. In language teaching and learning, the digital tools are not referred as 'disruptive' as they are in many subject fields. Many educational approaches such as the flipped classroom capitalize on the potential of digital media and other tech-tuned methods as the notion of interconnectedness is becoming increasingly important.

21st century learning paradigms urge both educators and learners to be literate in the evaluation and use of digital technologies in an efficient and productive manner to be able to acquire the skills needed to access to the wealth of information. These skills are usually classified as information literacy, media literacy and ICT literacy, which students of this era need to master to thrive in the future world in which new jobs will be created.

These digital literacy skills have some important implications on learning as well. Although today's digital natives are expected to champion the effective use of technologies for their education, self-reliance and independence as learners on the online platforms can be a challenge. Having learners with diverse digital literacy skills and habits has a considerable impact on the flipped learning environment. Being a digital native or a member of Gen Z does not necessarily translate into using digital tools effectively for learning. A great majority of today's digital natives are surrounded by innovations that they need to make sense of not to be overwhelmed by this unprecedented flow of information. Dealing with the comprehension and consumption of the digital media is some key aspects of digital literacy.

The present study indicated that flipped classroom can be integrated with digital literacy skills effectively while transforming instruction with digital tools and innovative methods of giving homework and providing feedback. This process also enabled the students to own their learning process. When learners develop a sense of ownership in their learning process, they can become more adept at improving their language skills and 21st century skills that they need to master. Finally, 'letting student learning drive the class' has empowered both the learners and the teacher in this study.

## **5.7 Recommendations**

The ideas associated with flipped learning represent a shift in emphasis from educators as individuals who deliver course content to facilitators embracing an approach that includes learners actively involved in making sense of the world and co-constructing knowledge with a range of learning sources. Despite some resistive pressures such as time management and the flipped mindset required to design and apply the flipped classroom model competently, the paradigm is clearly delivering essential benefits to learners and teachers.



Flipped classroom is still a largely uncharted territory in teaching and learning languages. Further research is necessary to investigate the benefits of the model as well as how to implement design strategies within diverse L2 settings. Implementing the flipped learning model may be time-consuming for the language teachers. However, once the materials have been calibrated and the design is solid, it can be a valuable paradigm worthy of trial by educators that may augment the language learning process.

Due to the very small sample size in the present study, future research with EFL students may endeavor to obtain larger sample sizes so that the conclusions may be more generalizable. Classroom milieu affects student's attitudes toward language learning. Therefore, conducting classroom research to investigate the impact of the flipped learning model to capture the richness of the experiences of learners in diverse contexts may prove advantageous as it can help gain a better understanding into this pedagogical approach. Discussing the natural context for research, Willis (2007) argued that it is rational to study a topic in the setting you want to gain insight considering the fact that context is a significant mediator of meaning. More research to investigate the nuances of which contexts might best be supported by the flipped classroom model is needed.

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## APPENDICES

### A. The Checklist of Questions for Designing a Mixed Methods Procedure

	1. Is a basic definition of mixed methods research provided?
	2. Are the reasons given for using both quantitative and qualitative data?
	3. Does the reader have a sense for the potential use of mixed methods research?
	4. Are the criteria identified for choosing a mixed methods design?
	5. Is the mixed methods design identified?
	6. Is a visual model presented that illustrates the research strategy?
	7. Is the proper notation used in presenting the visual model?
	8. Are procedures of data collection and analysis mentioned as they relate to the chosen design?
	9. Are the sampling strategies for both quantitative and qualitative data collection mentioned for the thesis?
	10. Are specific data analysis procedures indicated for the design?
	11. Are the procedures for validation mentioned for the design and for the quantitative and qualitative research?
	12. Is the narrative structure of the final dissertation or thesis mentioned, and does it relate to the type of mixed methods design being used?

## **B. Informed Consent Form for the Research Study&Demographics-Digital Habits of the Participants**

Dear participants,

I am Master of Arts student in the Graduate School of Educational Sciences, in the Department of English Language Teaching at Bahçeşehir University. I am conducting a study and you are invited to participate. This research study has four phases that require your participation; filling in the demographic information and the digital habits questionnaire, the pre-course digital literacy questionnaire, the flipped learning questionnaire and the post-course digital literacy questionnaire. If you decide to volunteer, you will be asked to participate in one interview at the end of the study. Please read the information below before deciding to participate in this research.

**Title of the study:** *Let Student Learning Drive the Class: An Investigation of the Impact of Flipped Learning on EFL Students' Language Skills, Digital Literacy and Attitudes toward the Learning Environment*

**Purpose of the study:** The purpose of this study is to investigate your perceptions about the flipped classroom experience, attitudes towards learning with ICT and digital literacy. You will be asked to complete a pre-course digital literacy questionnaire in week 1, a flipped learning questionnaire and a post-course digital literacy questionnaire in week 5.

**Principal Investigator:** Züleyha Tulay, B.A, Graduate School of Educational Sciences, Bahçeşehir University. Email: zuleyha.tulay@sfl.bau.edu.tr

**Faculty Supervisor:** Assist. Prof. Mustafa Polat, Graduate School of Educational Sciences, Bahçeşehir University. Email: mustafa.polat@es.bau.edu.tr

**Confidentiality:** Your responses will be kept confidential. You will be assigned a random numerical code. The data you will provide will be used for the present study and for future research. I won't use your name or information that would identify you in any publications or presentations.

**Participation and withdrawal:** Your participation in this study is completely voluntary and you may withdraw from the study without giving any reason and without there being any negative consequences. Your participation WILL NOT AFFECT GRADES for any of your course.

**Agreement:** I agree to participate in this study. I understand that I am free to withdraw from the study without giving any reason and without there being any negative consequences.

\_\_\_\_\_  
Name of participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Principal Investigator

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

**A. Please fill in the table below.**

Your age	
Your nationality	
Department	
Gender (Please put a tick ✓)	Male (____) / Female (____)
How long have you been studying English? (Please put a tick ✓)	(____) Ten months (since I started the prep school) (____) More than 1 year

**B. Which of the following devices and digital platforms do you use? Please put a tick (✓) for all that apply.**

- 1) An email account (\_\_\_\_)
- 2) A Social Networking Site (e.g. Facebook, Instagram, LinkedIn) (\_\_\_\_)
- 3) A blog (\_\_\_\_)
- 4) A microblog (e.g. Twitter, tumblr account) (\_\_\_\_)
- 5) A smartphone (\_\_\_\_)
- 6) A Tablet, iPad or eReader (\_\_\_\_)
- 7) A laptop (\_\_\_\_)
- 8) A desktop computer (\_\_\_\_)

**C. Do you have access to the internet? Yes (\_\_\_\_) / No. (\_\_\_\_) (Please put a tick ✓)**

**D. How often do you use the Internet? Please put a tick (✓) for all that apply.**

- |                           |                                   |
|---------------------------|-----------------------------------|
| 1) 1-2 hours a day (____) | 3) more than 4 hours a day (____) |
| 2) 3-4 hours a day (____) | 4) other (please specify) (____)  |

**E. Where do you use the Internet? Please put a tick (✓) for all that apply.**

- |                         |   |
|-------------------------|---|
| 1) At home (____)       | 3) While travelling (e.g. on a bus or train through a mobile device) (____) |
| 2) At university (____) | 4) Somewhere else (e.g. library, internet café, etc.) (____)                |

**Thank you very much for taking the time to complete our survey.**

### C. Average B1 Scores of The Participants of the Study<sup>1</sup>

Student number	Average score FOR B1	B1 End of module grade	Level Code (Module 5)	Class
1	65,92	63	B2	9
2	65,55	66	B2	9
3	65,22	59	B2	9
4	65,11	55	B2	9
5	65	64	B2	9
6	65	53	B2	9
7	65	57	B2	9
8	65	62	B2	9
9	65	58	B2	9
10	65	61	B2	9
11	65	59	B2	9
12	65	71	B2	9
13	65	64	B2	9
1	66,46	55	B2	10
2	65,7	64	B2	10
3	65,23	57	B2	10
4	65,18	65	B2	10
5	65,15	50	B2	10
6	65	68	B2	10
7	65	47	B2	10
8	65	60	B2	10
9	65	74	B2	10
10	65	64	B2	10
11	65	61	B2	10
12	65	56	B2	10
13	65	71	B2	10
1	66,56	67	B2	11
2	66,42	69	B2	11
3	66,02	58	B2	11
4	65	65	B2	11
5	65	46	B2	11
6	65	58	B2	11
7	65	64	B2	11
8	65	68	B2	11
9	65	81	B2	11
10	65	57	B2	11
11	65	72	B2	11
12	65	56	B2	11
13	65	66	B2	11
1	66,12	53	B2	12
2	65,91	63	B2	12
3	65,22	59	B2	12
4	65,12	66	B2	12
5	65	53	B2	12
6	65	62	B2	12
7	65	55	B2	12
8	65	59	B2	12
9	65	66	B2	12
10	65	62	B2	12
11	65	69	B2	12
12	65	58	B2	12
13	65	75	B2	12

<sup>1</sup>B1-level average scores of the participants both in the experimental and control groups are shown in the figure. B2.9&10 (displayed in the blue section) form the experimental group and B2.11&12 (displayed in the orange section) form the control group in the present study.

#### D. Item Reliability Analysis of the Flipped Learning Questionnaire

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
<b>PART I.</b>				
1.I have a positive attitude towards the flipped classroom after the course	25.34	2.475	.595	.700
2.I appreciate learning with video	25.38	2.486	.689	.688
3.I am more flexible and mobile as a learner	25.34	2.475	.595	.700
4. I can study at my own pace	25.11	2.586	.293	.772
5. It is easier and more effective to learn	25.23	2.185	.681	.671
6. I am more motivated as a learner	25.34	2.875	.232	.769
7. I experience stronger peer-collaboration	25.23	2.585	.351	.753
<b>PART II.</b>				
1. The combination of video and non-traditional lectures was useful	21.73	3.245	.512	.735
2. Video made learning more effective	21.88	2.986	.620	.706
3. Video quality was satisfactory	22.34	3.915	.320	.776
4. Video made me learn more	22.11	2.346	.733	.666
5. Video motivated me to learn	21.88	2.586	.753	.660
6. Learning through video resulted in more peer discussions	22.15	3.815	.178	.806



## E. Flipped Learning Questionnaire

### PART I. Students' experiences of flipped classroom after the course

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.I have a positive attitude towards the flipped classroom after the course					
2.I appreciate learning with video					
3.I am more flexible and mobile as a learner					
4. I can study at my own pace					
5. It is easier and more effective to learn					
6. I am more motivated as a learner					
7. I experience stronger peer-collaboration					

**PART II. Students' experiences of using video for learning**

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. The combination of video and non-traditional lectures was useful					
2. Video made learning more effective					
3. Video quality was satisfactory					
4. Video made me learn more					
5. Video motivated me to learn					
6. Learning through video resulted in more peer discussions					

## **F. Semi-Structured Interview Questions**

### **Semi-structured Interview questions on the Flipped Classroom**

1. What do you think the advantages and disadvantages of a flipped classroom are?
2. Are there any improvements that you believe can be made towards a flipped classroom? If so, what do you think they are?
3. What do you think about the platform “Google Classroom”? What are the advantages and disadvantages of the platform?
4. a) Throughout module 5, did you revise the grammar notes, slides, watch the videos on Google Classroom? Which did you find the most helpful/least helpful and why?  
b) What do you think about the online quizzes you completed on Google Classroom? How useful/effective was that homework?
5. Is there anything else that you would like to add regarding the flipped classroom?

### G. Informed Consent Form for the Semi-structured Interviews

Thank you for volunteering for the interview. If you are happy to participate then please read the information and sign the form below.

The interview is going to be tape-recorded and the anonymized audio will be used only for data analysis and future research purposes such as publications after the study has been completed.

You are free to withdraw at any time without giving any reason and without there being any negative consequences.

I agree to take part in this interview.

\_\_\_\_\_  
Name of participant                      July 5, 2019                      \_\_\_\_\_  
(Date)    Signature

\_\_\_\_\_  
Principal Investigator                      July 5, 2019                      \_\_\_\_\_  
(Date)    Signature

## H. Pre-Course & Post-Course Digital Literacy Questionnaire

### PART I. Attitudes toward ICT for learning

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I like using ICT (information and communications technology) for learning.					
2. I learn better with ICT.					
3. ICT makes learning more interesting.					
4. I am more motivated to learn with ICT.					
5. ICT enables me to be a self-directed and independent learner					
6. There is a lot of potential in the use of mobile technologies (e.g. mobile phones, smartphones etc.) for learning.					
7. Teachers/lecturers should use more ICT in their teaching of my classes					

**PART II. Technical dimension of digital literacy**

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
8. I know how to solve my own technical problems.					
9. I can learn new technologies easily.					
10. I keep up with important new technologies.					
11. I know about a lot of different technologies.					
12. I have the technical skills I need to use ICT for learning and to produce language (e.g. presentations, digital stories, wikis, blogs) that demonstrate my understanding of what I have learnt					
13. I have good ICT skills					

### **PART III. Cognitive dimension of digital literacy**

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
14. I am confident with my search and evaluate skills in regard to obtaining information from the Web					
15. I am familiar with issues related to web-based activities e.g. cyber safety, search issues, plagiarism					

### **PART IV. Social-emotional dimension of digital literacy**

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
16. ICT enables me to collaborate better with my peers on course work and other learning activities					
17. I frequently obtain help with my university work from my friends over the Internet e.g. through WhatsApp, Instagram, etc.					

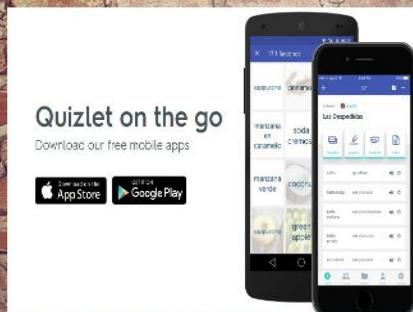
## I. Flipped Learning Guide





## J. Useful Applications for Language Learners

# USEFUL APPS FOR LANGUAGE LEARNERS



**K. A Screenshot of a Kahoot Homework Quiz Question**



**If I win the competition, I \_\_\_\_\_ a new house.**

▲  
buys

◆  
would bought

●  
would have buy

■  
will buy

## L. Screenshots of Online Quiz Questions Created on Google Forms

### WEEK 1 - QUIZ 1 / NOUN CLAUSES

Please watch the videos in WEEK 1 in our Google Classroom and complete this quiz.

**\* Required**

**Please write your name and surname. \***

Your answer

**Please choose your classroom. \***

M 307 (B2.9)

M 308 (B2.10)

**1. The focus of our work is ..... 1 point**

how can we satisfy customers most effectively.

how we can satisfy customers most effectively.

how satisfy we can customers most effectively.

we can how satisfy customers most effectively.

**2. I wonder ..... \*** 1 point

how long should we wait here.

how we should wait here long.

how long we should wait here.

## WEEK 2 - QUIZ 1 / DEFINING & NON-DEFINING RELATIVE CLAUSES

Please watch the videos in WEEK 2 in our Google Classroom and complete this quiz.

\* Required

Please write your name and surname. \*

Your answer

Please choose your classroom. \*

- M 307 (B2.9)
- M 308 (B2.10)

1) The woman \_\_\_\_\_ across the road is an old friend of mine. 1 point

- who she lives
- where she live
- that live
- who lives

2) Isn't that \_\_\_\_\_ across the road from you? \* 1 point

- the woman that is live
- the woman whose lives
- the woman that live
- the woman who lives

3) The police said \_\_\_\_\_ last night was unavoidable. 1 point

- the accident that happened
- the accident that happen
- the accident happened that
- that the accident happened

**M. Results from the Frequency Analysis of the Pre-course & Post-Course Digital Literacy Questionnaires**

<b>I. Percentages of Students' Attitudes Towards ICT for Learning</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
Statements about attitudes towards ICT for learning	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post
1. I like using ICT for learning	0/0 (0-0)	0/0 (0-0)	0/0 (0-0)	16/15 (51.6-48.4)	10/11 (47.6-52.4)
2. I learn better with ICT	0/0 (0-0)	0/0 (0-0)	4/0 (100-0)	11/10 (52.4-47.6)	11/16 (40.7-59.3)
3. ICT makes learning more interesting	0/0 (0-0)	1/0 (100-0)	5/0 (100-0)	13-11 (54.2-45.8)	7-15 (31.8-68.2)
4. I am more motivated to learn with ICT	0/0 (0-0)	0/0 (0-0)	9/0 (100-0)	15/16 (48.4-51.6)	2/10 (16.7-83.3)
5. ICT enables me to a self-directed and independent learner	0/0 (0-0)	1/0 (100-0)	4-0 (0-0)	16/16 (50-50)	5/10 (33.3-66.7)
6. There is a lot of potential in the use of mobile technologies for learning.	0/0 (0-0)	0/0 (0-0)	0/0 (0-0)	20/8 (71.4-28.6)	6/18 (25-75)
7. Teachers/lecturers should use more ICT in their teaching of my classes	0/0 (0-0)	1/0 (0-0)	2/0 (0-0)	16/3 (84.2/15.8)	7/23 (23.3/76.7)

<b>II. Percentages of Students' Attitudes towards the Technical Dimension of Digital Literacy</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
Statements about attitudes towards the technical dimension of digital literacy	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post
8. I know how to solve my own technical problems	0/0 (0-0)	4/1 (80-20)	6/4 (60-40)	10/15 (40-60)	6/6 (50-50)
9. I can learn new technologies easily.	0/0 (0-0)	1/0 (100-0)	3/3 (50-50)	9/11 (45-55)	13/12 (52-48)
10. I keep up with important new technologies.	0/0 (0-0)	1/0 (100-0)	3/3 (50-50)	11-13 (45.8-54.2)	11-10 (52.4-47.6)
11. I know about a lot of different technologies	0/0 (0-0)	3/1 (75-25)	8/7 (53.3-46.7)	15/16 (45-55)	6/7 (46.2-53.8)
12. I have the technical skills I need to use ICT for learning and to produce language that demonstrate my understanding of what I have learnt	0/0 (0-0)	1/0 (100-0)	7-4 (63.6-36.4)	13/16 (44.8-55.2)	5/6 (45.5-54.5)
13. I have good ICT skills	0/0 (0-0)	1/0 (100-0)	5/2 (71.4-28.6)	12/14 (46.2-53.8)	8/10 (44.4-55.6)

<b>III. Percentages of Students' Attitudes towards the Cognitive Dimension of Digital Literacy</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
Statements about attitudes towards the cognitive dimension of digital literacy	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post	<i>N/N</i> (%) Pre/Post
14. I am confident with my search and evaluate skills in regard to obtaining information from the Web	0/0 (0-0)	5/0 (100-0)	3/0 (100-0)	13/17 (43.3-56.7)	5/9 (35.7-64.3)
15. I am familiar with issues related to web-based activities e.g. cyber safety, search issues, plagiarism	1/0 (100-0)	1/1 (50-50)	7/0 (100-0)	10/15 (40-60)	1/1 (50-50)

<b>IV. Percentages of Students’ Attitudes towards the Social- emotional Dimension of Digital Literacy</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
Statements about attitudes towards the social-emotional dimension of digital literacy	<i>N/N</i> <i>(%)</i> Pre/Post	<i>N/N</i> <i>(%)</i> Pre/Post	<i>N/N</i> <i>(%)</i> Pre/Post	<i>N/N</i> <i>(%)</i> Pre/Post	<i>N/N</i> <i>(%)</i> Pre/Post
16. ICT enables me to collaborate better with my peers on course work and other learning activities	0/0 (0-0)	0/0 (0-0)	4/0 (100-0)	12/9 (57.1-42.9)	10/17 (37-63)
17. I frequently obtain help with my university work from my friends over the Internet e.g. through WhatsApp, Instagram, etc.	0/0 (0-0)	3/0 (100-0)	2/0 (100-0)	11/7 (61.1-38.9)	10/19 (34.5-65.5)



## N. Curriculum Vitae

### PERSONAL INFORMATION

Surname, Name: Tulay, Züleyha

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Date and Place of Birth: 27 January 1986, İskenderun

Phone: +212 381 00 00

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### EDUCATION

Degree	Institution	Year of Graduation
B.A.	Boğaziçi Üniversitesi	2008
High School	Bahçelievler Dede Korkut Anadolu Lisesi	2003

### WORK EXPERIENCE

Year	Place	Enrollment
2012 -	Bahçeşehir University	English Language Instructor

### FOREIGN LANGUAGES

Advanced English, Pre-intermediate German, Elementary Italian

### CERTIFICATES

British Council	Trainer Development Course
Cambridge English Language Assessment	ICELT
Sabancı University School of Languages	
Trainer Education Program	SLTEP 2018

### HOBBIES

Calligraphy, Cooking, Cycling, Gardening.