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THE FLIPPED CLASSROOM AND ITS APPLICATION TO THE TEACHING OF ENGLISH AS A FOREIGN LANGUAGE

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ABSTRACT

The present study has been conducted in order to gain insights into the Flipped Classroom (FC) and its application to the teaching and learning of English as foreign language (EFL) and aims to supersede the lack of research conducted on this field to date. To this end, a cross-sectional study has been conducted to identify the most effective resources for the implementation of the FC to foreign language learning, the potential barriers students may find when facing a FC course and the main assets and pitfalls this teaching method entails. In doing so, the study has involved both quantitative and qualitative research design. The former was carried out within four groups of students from IES Heliche in Olivares, Sevilla. The students belong to the 2nd and 3rd years of Compulsory Secondary Education (CSE), both bilingual and non-bilingual groups. The latter has been conducted within a group of six English teachers from the same school. The ultimate goal of this study is to provide empirical data which can serve as a base for the possible implementation of the FC to the teaching of English as a foreign language in Secondary Education.

Key words: Flipped Classroom, FC, Computer-Mediated Communication, CMC, English language learning, EFL

RESUMEN

El presente estudio se ha llevado a cabo con el objetivo de adquirir conocimientos sobre la Clase Inversa (CI) y su aplicación a la enseñanza y aprendizaje del inglés como lengua extranjera y pretende superar la falta de investigaciones conducidas en este campo hasta la fecha. Con este fin, se ha llevado a cabo un estudio transversal para identificar los recursos más efectivos a la hora de implementar la CI al aprendizaje de la lengua extranjera, las potenciales barreras que pueden encontrar los estudiantes que se enfrentan a una clase inversa and las principales ventajas y desventajas que implica este método. Para lograr estos objetivos, la investigación ha contado con un diseño tanto cuantitativo como cualitativo. La parte cuantitativa del estudio se ha llevado a cabo con cuatro grupos de alumnos del IES Heliche, en Olivares, Sevilla. Los alumnos participantes pertenecen a los cursos de 2º y 3º de ESO, tanto bilingües como no bilingües. La parte cualitativa se ha llevado a cabo con un grupo de seis profesores de inglés del mismo instituto. El fin último de este estudio es proporcionar datos empíricos que sean de utilidad a la hora de plantear la clase inversa como método de enseñanza del inglés como lengua extranjera en Educación Secundaria.

1. INTRODUCTION

1.1. Definition

The rise of technological resources used in education has led teachers and scholars to take innovative steps towards a redefinition of teaching methods. Embedded in this trend, some new teaching methods have been put forward in certain educational fields. That is the case of the Flipped-Classroom (FC hereafter), consisting in reversing the traditional method of instruction where students attend lessons and receive input while they devote time to work on their assignments outside the classroom. Following a FC method, students would work on the contents of the lesson at home while the lesson time is devoted to assignments or tasks.

This teaching method has already been developed by scholars and researchers since the early 2000s. In the USA research was initiated by J. Wesley Baker who explained the changes of the role of the teacher from “the sage on the stage” to “the guide on the side” (Baker, 2000: 9). Some foreign language teachers are exploring the FC in their classrooms as it may offer great advantages in comparison with traditional EFL methods where new contents are presented to students inside the classroom.

However, far too little attention has been paid to the application of the FC to the study of foreign languages. Indeed, the most widely consensual affirmation with respect to this approach in the studies conducted is the dire need for further research.

This is precisely the aim of this research: 1) to examine the methodological guidelines underpinning this teaching method through the sizeable literature on the FC and 2) to identify the pedagogical implications derived from the application of the FC to the teaching and learning of a foreign language.

1.2. Objectives

The broad aims of this study are (a) to gain insights into the perceptions of EFL teachers at secondary education about FC and (b) to identify the pedagogical implications derived from its application. Three key concerns drive the investigation and serve as cornerstones for this project. They are broken down below:

- What are the most effective ICT resources for the application of the FC to foreign language learning?
- What are the potential barriers deterring some students from successfully completing a FC course?
- What are the main assets and pitfalls of the FC?

1.3. Description of the study

The present research encompasses a study of the research conducted on this topic to date and an evaluation of the main pedagogical implications of its application.

It is an instance of applied research, in that it focuses on the application of the FC to the teaching of English as a foreign language in secondary schools. It is centred on evaluating the main assets and pitfalls of this approach and identifying the most effective resources for its application.

To this end, it will carry out a cross-sectional study within bilingual and non-bilingual groups of 2nd and 3rd years of Compulsory Secondary Education (CSE)¹, aged 13 to 15 from the same secondary school in Seville. Thus, it constitutes a quasi-experimental study since the subjects are already part of pre-established groups belonging to two different levels.

The present study is qualitative in nature as it comprises questionnaires and interviews as the main instruments for data collection. For the analysis of the collected data both interpretative and statistical methods are combined.

Finally, this study will probe the students' and teachers' satisfaction with the pedagogical implications derived from the implementation of this methodological approach.

1.4. Sections

In chapter one of the research the description and objectives of the study are established in order to justify the relevance of the present study.

Chapter two will be devoted to the critical appraisal of the sizeable literature in this field and provides the theoretical basis on which the present study is grounded. Prior to delivering a thorough characterization of the FC and the methodological guidelines underneath this teaching method, the backdrops of the FC are analysed.

Once the theoretical backdrop has been established, the materials and methodology of research chosen for the study are broken down in chapter three prior to presenting and discussing the outcomes in the subsequent chapter.

Results yielded by the study are presented and discussed through chapter four, divided in three sections dealing with each of the research questions presented in chapter one.

The limitations of the study, together with the lines for future research are broached in chapters five and six, before drawing conclusions in chapter seven.

¹ In the Spanish educational system, compulsory education comprises two stages: primary (6-12 years) and secondary (12-16 years).

2. LITERATURE REVIEW

2.1. Contextualization: The Impact of CMC on Language Learning

Since the introduction of multimedia computing and especially with the development of the Internet, the role of computers in learning has increasingly gained ground. The term Computer-Mediated Communication (CMC henceforward) can be defined as the kind of interaction that takes place by means of electronic devices, usually computers. The use CMC in the language classroom entails a great number of innovations in the learning and teaching process leading to the design of teaching methods aimed at the development of learners' competences.

Recent literature has shown that the use of CMC inside and outside the classroom creates a vast gamut of possibilities for both teachers and learners. Beauchamp and Kennewell (2010) discuss how they have offered teachers new paths to organise their classroom and have also given learners autonomy in their learning process, providing them with an opportunity to “orchestrate” new and interactive resources.

Furthermore, the use of CMC contributes to the creation of a virtual environment where the teaching-learning process does not require a face-to-face relation for the representation and communication of information and knowledge construction. Their use breaks space and time barriers and allows for absolute flexibility in the way of acquiring knowledge. As Tirado puts it,

[...] la posibilidad que nos permiten [...] para completar lo que podríamos denominar como un aprendizaje totalmente flexible en cuanto que permiten no sólo ya elegir el qué aprender sino también bajo qué lenguajes hacerlo, desde donde y en qué momento del día (Tirado, 1998: 192).

Both inside and outside the classroom CMC environments are held to have a myriad of positive effects. Alongside the absence of time and space limitations, their widespread use is derived from the possibility of getting immediate feedback.

2.1.1 Modes of CMC

A distinction must be made here between the most commonly accepted modes of CMC. Among the most widely acknowledged classifications, we find that of Warschauer (2001: 207) which has been endorsed by various authors such as Monteith (2005) or Hosseini, (2015). According to Warschauer's classification, we find the following modes of CMC:

- a) Synchronous Computer-Mediated Communication (SCMC), where communication takes place in real time.
- b) Asynchronous Computer-Mediated Communication (ACMC), where communication does not occur in real time but in a delayed fashion.
- c) The reading and writing of on-line documents via the Internet.

Furthermore, Hosseini (2015: 165) addresses Nguyen's (2008: 27) classification of CMC modes according to their oral, textual or visual format. Nguyen summarises his classification in the following figure:

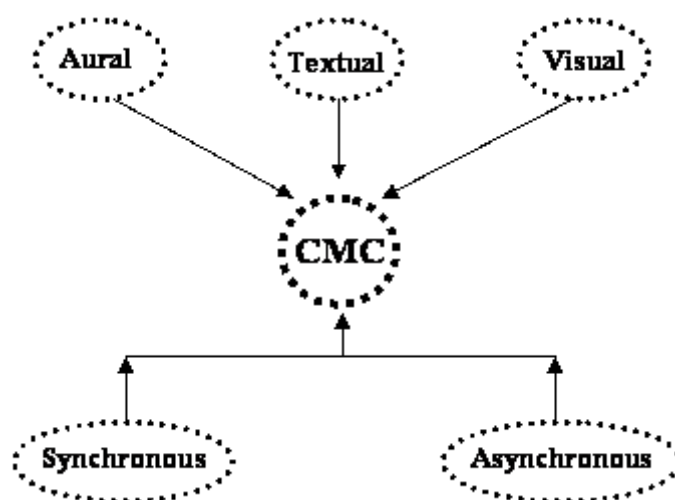


Figure 1. Nguyen's (2008: 27) classification of CMC

2.1.2. Pedagogical Implications

Pedagogical implications of CMC have been extensively researched amply extolling on the positive effects they encompass (Clares, 2000; Warschauer, 2001; Garrison and Anderson, 2005; Cortina-Pérez, 2008; Nguyen, 2008; Barrs, 2012). Research on this topic has commonly been divided on three general areas: interaction; reading and writing; and affect (Warschauer, 2001: 208).

- **Interaction**

Barrs (2012: 10-25) examined how CMC environments provide learners with a useful tool for interacting in the foreign language. Apart from creating further opportunities for communication outside the classroom, particularly for learners whose contact with the L2 is limited to school, CMC offers a context of communication similar to a face-to-face conversation. Sykes (2005: 399-431) described how learners' interaction in SCMC discussions had proved to be similar to face-to-face conversations with learners monitoring their use of language in real time.

On the other hand, ALC allows learners to revise or cancel the stretch of language they are using to communicate ideas and concepts, giving them enough time to elaborate more complex and accurate utterances (Heisler and Crabill, 2006: 114-135).

Studies conducted on this field also account for the benefits derived from the increased participation of learners in CMC settings. Participation patterns tend to be more balanced between quiet learners and outspoken ones who usually dominate the conversation in face-to-face interaction (Pelletieri, 2000; Payne and Whitney, 2002).

Research also indicates that the choice of tasks and topics plays a paramount role on the nature of CMC negotiation producing highly positive outcomes in speaking tasks which were goal-oriented and fostered a reflection on students' use of language (Pelletieri, 2000; Sotillo, 2000). As Egbert's (2001: 2) claims, the use of CMC environments encourages "language teachers to develop language-learning tasks that provide opportunities for learners to interact socially and academically in the target language." Learning occurs when students are actively engaged in tasks which are meaningful for them.

Thus, CMC entails a modification in "the types of negotiation and linguistic modification that occur, and the patterns of participation that emerge" (Warschauer 2001: 209).

- **Reading and writing**

The increased opportunities for language practice derived from the use of CMC are directly related to the improvement of learners' reading and writing skills. Warschauer (2001: 210) draws on qualitative studies conducted in on-line classrooms (Tella 1999; Meskill and Krassimira 2000) to describe how learners' reading and writing processes "became more collaborative and purposeful" when they engaged in real communication through CMC. Students' reading and writing skills experienced a significant improvement when they took part in on-line exchanges and especially when they published their work on the Internet, since "the act of public display encourages them to make their writing more reader-centred" (Warschauer, 2000: 210).

Similarly, Sotillo (2000) also describes a modification in syntactic complexity and lexical change of learner language produced in CMC and face-to-face discussions, with students using more complex syntactic structures and varied language in CMC environments. These changes, however, have only been reported for those learning environments where the use of CMC is embedded into collaborative work, and not teacher-centred methodologies (Sotillo, 2000; Warschauer 2001).

Recent research has also shown the positive effects of using blog software and social networks (such as *Tweeter*) in the improvement of learners' reading and writing (Parker and Chao, 2007; Arslan and Sahin-Kizil, 2010; Miyazoe and Anderson, 2010; Lomicka and Lord, 2012). They describe them as tools that facilitate students' practice of written language which is close to their interests and thoughts, offering at the same time an opportunity for reflection on the language. They agree to state that writing instruction through entertaining ways enhances learners' performance. Miyazoe and Anderson (2010) also claim that the implementation of blogs, forums and wikis is held to have beneficial effects on students' learning progress allowing them to study differences in written English.

Additionally, blogs and wikis offer the possibility to visit, read and update a collection of interlinked web pages. Parker and Chao (2007) describe their dynamic character which allows learners to create and edit their work and participate in global communities.

- **Affect**

Considering students' affective filters, the use of CMC provides them with opportunities to improve their language skills in a relaxed and friendly environment. Thus, language learning through CMC environments becomes more socially interactive and motivating for students, and reduces their anxiety over language production in contrast with the sometimes stressful environment of the classroom (Bikowski and Kessler, 2002: 27-30).

Learner autonomy is another paramount aspect concerning computer-mediated language learning and teaching. A myriad of authors have approached this concept (Holec, 1981; Little, 1991; Sinclair, 2000; Benson, 2007), relating it to concepts such as independence or capability to be responsible for one's own learning. Following Benson (2007), the use of technology can be associated to the development of this capability as it provides new environments in which learners can interact and put their knowledge into practice.

Some of the most recent studies conducted on the affective implications of CMC are summarized in the following table:

Pedagogical implications of CMC	Research publication	Type of CMC environment
Increase motivation	Sotillo (2000)	SCMC, ACMC
	Bikowski and Kessler (2002)	SCMC
	Hashemi and Azizinezhad (2011)	SCMC
Promote interaction and collaborative learning	Pelletieri (2000)	SCMC
	Sotillo (2000)	SCMC, ACMC
	Egbert (2001)	SCMC, ACMC
	Warschauer (2001)	SCMC, ACMC
	Bikowski and Kessler (2002)	SCMC
	Parker and Chao (2007)	ACMC
	Alastuey (2011)	SCMC
	Barrs (2012)	SCMC
Allow flexibility	Tirado (1998)	SCMC , ACMC
Reduce anxiety and social pressure	Bikowski and Kessler (2002)	SCMC
Foster critical and creative thinking	Heisler and Crabill (2006)	ACMC
	Bikowski and Kessler (2002)	SCMC
Promote autonomy	Sinclair (2000)	SCMC, ACMC
	Benson (2007)	SCMC, ACMC
	Warschauer (2001)	SCMC, ACMC
	Payne and Whitney (2002)	SCMC
	Beauchamp and Kennewell (2010)	SCMC, ACMC

Table 1. Affective pedagogical implications of CMC

2.1.3. Further Considerations

Beyond the three major categories established by Warschauer (2001: 208), recent research has also focused on the development of oral skills through CMC. The steady advance of technology has made possible the emergence of a vast gamut of resources which continue to broaden the possibilities of CMC for the improvement of listening and speaking.

O'Bryan and Hegelheimer (2007) conducted a study on the benefits of integrating podcasts into English as a Second Language. Similarly, Absalom and Rizzi (2008) studied the effects of online listening concluding that learners' acquisition of vocabulary and retention of information was higher when they engaged in online listening tasks.

As English is considered today as a lingua franca, it seems of paramount importance for teachers and learners to develop speaking skills. Alastuey (2011) conducted a study with experimental and control groups to identify the main assets and pitfalls of synchronous voice-based CMC in a course of English for Specific Purposes (ESP). Results revealed that students in the experimental group showed a higher tendency to interact in speaking tasks.

Also in 2011, Hashemi and Azizinezhad (2011) carried out a study on the use of programmes such as *Skype* allowed for the creation of small virtual classes (up to six users). They described how learners could benefit from the exposure to authentic uses of language,

which will in turn motivate them to engage in real communication and provide them with increased opportunities to internalise language.

The use of CMC has taken off in such a spectacular fashion in recent years that the use of mobile phones for language learning is starting to be discussed. Gromik (2012) argues that mobile phones favour language learning. After conducting a study with nine participants at a University in Japan, he concluded that there was an increase in the amount of words they were able to utter in a monologue.

In sum, CMC has proved beneficial for language learning and teaching in a number of aspects such as promoting motivation, active and collaborative learning, and contributing to the development of learner autonomy and critical thinking.

Nonetheless, the use of CMC exclusively to deliver content to students is not a teaching method in itself. Their pedagogical value relies on their interpretation as artefacts which mediate between teachers and learners, provide a virtual learning context and facilitate interactive processes for knowledge construction (Salmerón, Rodríguez and Gutiérrez, 2010).

2.2. The Backdrop of Flipped Classroom

The concept of flipping the classroom has been gaining credence in some educational circles in the last recent years. This teaching method is based on the concept of reversing traditional lecture lessons, where students are first exposed to contents during classroom time. In the FC, students are required to watch videos or read texts before the lesson, which frees classroom time to be devoted to the performance of practical tasks or discussions based on the content students have previously worked on.

Following Bloom's revised taxonomy (Anderson and Krathwohl, 2001), learners start by acquiring some basic knowledge about the subject such as terms and concepts autonomously outside the classroom. Classroom time is devoted to the acquisition of procedural and metacognitive knowledge, that is, the application and analysis of such concepts and the development of awareness on students' own cognition. The teacher will provide the students with the necessary support during classroom time.

The methodological guidelines underpinning the FC are far from new. Reading or studying the course material before a lesson is by no means a novel concept; students are usually required to read certain materials in order to prepare themselves for the next lesson. Nevertheless, this traditional approach to lessons is changing with the progressive advance of technology (Kurtz, Tsimerman and Steiner-Lavi, 2014).

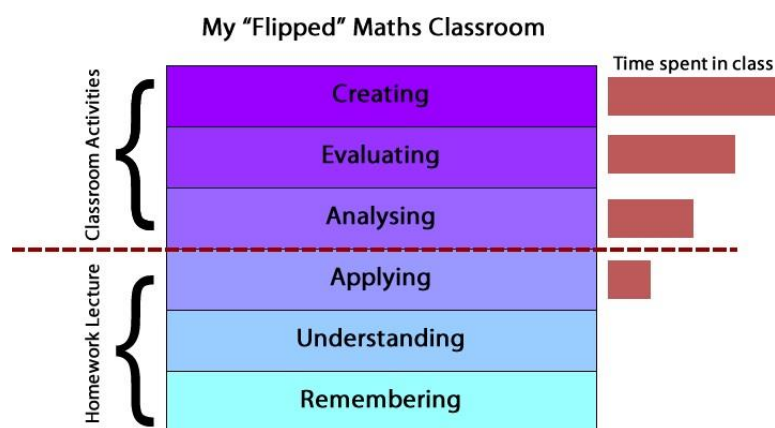


Figure 2. Time spent in the inverted classroom following Bloom's revised taxonomy Tourón (2014)

Stemming from student-centred teaching methods, aimed at encouraging students to use critical and creative thinking and engaging them in collaborative and active learning in order to increase their motivation and to promote long-lasting learning, the FC has experienced a significant uptake due to the increasing possibilities to access online resources. In fact, the application of technological resources to the teaching practice is claimed as one of the main factors that have led to the development of the FC.

As Tourón, Santiago and Díez (2010) assert, traditional teaching methods based on the central role of the teacher and aimed at an average student do not suit the needs of learners in current society. Redefining learning becomes paramount as it implies not only knowing information but being able to manage that information and adopt a critical view towards knowledge. In the same vein, teaching also needs to be redefined in order to prepare students for a society in constant change. Learning must be conceived as a means to foster intellectual habits, not as a mere transmission of contents. In compliance with the foregoing, the roles of teachers and students are also recalibrated. Instruction is no longer teacher-driven but student-led. The role of the teacher is viewed here as that of an instructor or guide who provides students with input for independent works and promotes learning opportunities within the classroom, monitoring the development of their skills and catering for their specific needs (Tourón, Santiago and Díez, 2014: 6-7). These authors summarise the most outstanding differences between teacher and student-centred methods in the following table:

Teacher-centred model	Student-centred model
The teacher transmits knowledge to students.	Students build knowledge through search, synthesis, integrating knowledge with competences such as critical thinking, problem-solving, etc.
Students are passive receivers of information.	Students are actively engaged in learning.
Emphasis is put in the acquisition of knowledge independently from its context.	Emphasis is put on effectively using knowledge in real contexts.
The teacher is a provider of knowledge and assessment.	The teacher is a guide, a facilitator. The teacher and the students assess together.
Teaching and assessment are separated.	Teaching and assessment are linked.
Assessment is used to monitor learning.	Assessment is used to promote and diagnose learning.
Emphasis on accuracy.	Emphasis on learning from errors.
Standardised tests are used to evaluate learning.	Learning is evaluated through projects, portfolios, practice, etc.
Focussed on one subject.	Interdisciplinary focus.
Competitive and individualist culture.	Cooperative and collaborative culture.
Only students are considered as apprentices.	Both students and teachers are considered apprentices.

Table 2. Differences between teacher and student-centred methods (Tourón, Santiago and Díez, 2014: 5)

The FC emerged from the need to cater for students' variegated learning styles and needs and the increasing incorporation of technological resources to the teaching practice. It evolves from different teaching methods proposed in order to maximize active learning in class by encouraging student self-regulated learning at home, using innovative strategies to deliver course materials.

Walvoord and Johnson (1998) proposed a teaching model in which learners gained first exposure to the material before the lecture and classroom time was used to active discussion, analysis or synthesis of the materials. As they put it:

“The student's preparatory first-exposure work becomes the basis of class. The result is a built-in assessment – the teacher becomes familiar, minute by minute, with what the students are thinking and learning, where they need more help, whether concepts are getting through”. (Walvoord and Johnson. 1998: 54)

According to these authors the result is an interactive environment which encourages students to take the lead in gaining their first exposure to contents. The teacher's role evolves from the content provider to the guide who monitors students' learning. They go on to establish clear criteria and tools for assessment and grading students' work, asserting that learners must be instructed about assessment criteria from the very beginning of the course (Walvoord and Johnson, 1998: 66).

The term “classroom flip” was first coined by Baker in 2000. He examined the changes that college instruction was undergoing due to the uptake of two main trends. Firstly, the changes in education philosophy bolstered by findings of cognitive science that held learners responsible for their own learning process. They were not considered anymore as passive subjects of instruction but as discoverers of knowledge (Reed, 1988; Caine and Caine, 1994; Johnson, Johnson and Smith, 1998). The role of the teacher was described as shifting progressively from “the sage on the stage” to “the guide by the side” (Baker, 2000: 9).

Secondly, the widespread introduction of new instructional technologies which provided good opportunities for the development of new teaching methods.

Baker’s basic assumption was that new technologies would both provide teachers with new ways of delivering lecture material to learners and free classroom time for “teaching and learning strategies that emphasize the role of the learner in a collaborative environment” (Baker, 2000: 11). The main components of Baker’s Flipped Classroom included online lectures, threaded discussion and quizzes while classroom time was devoted to clarify, expand, apply and practice on the contents.

In the early 2000s, professors Lage, Platt and Treglia, from the University of Miami, wrote an article describing the implementation of what they called the *inverted classroom* on an introductory economics course. They observed that the lecture-based teaching methods did not conform to students’ varied learning styles, that “classes that use a variety of teaching styles are more likely to increase student performance, diversity, and interest. [And that] by varying the ways in which it is taught, the subject can be approachable for more types of learners” (Lage, Platt and Treglia, 2001: 31).

Thus, they designed a method based on providing students with tools to gain first exposure to classroom material prior to the lesson, including readings, lecture videos and Powerpoint presentations. Class time was then devoted to practical assignments in which students —either individually or in groups— were expected to apply economic principles or solve specific problems. In order to ensure students’ preparation prior to class, they were periodically required to complete worksheets that were later graded by teachers.

In their article, the authors describe a progressive shift from the lecture format to a multimedia environment which would lead to reaching students with diverse learning styles.

The model set by Lage, Platt and Treglia (2000) was soon taken up by some scholars and researchers who began to delve into the possibility of flipping the classroom. Science teachers Bergman and Sams started applying the FC to their lessons in 2006 by recording

their lectures using video software. They called their model *pre-broadcasting* (Noonoo, 2012).

A modified version of the FC introduced by Baker was described by Mazur (Mazur, 2009) on what he called *peer instruction*. He substituted his traditional lecture lessons with the FC so as to increase his students' engagement and motivation. Similarly to the teaching methods described by Walwoord and Anderson (1998), Baker (2000) and Lage, Platt and Treglia (2000), in Mazur's model learners were exposed to the material prior to the class. Quizzes were used to ensure students' preparation for the class that was structured around clarification of concepts. The fundamental difference with previous models stems from the conception of peer correction as the leading instruction method. Conceptual questions were posed for all students to answer sometimes anonymously via "clikers" leading to discussion of possible disagreements. Clarification or explanation on certain concepts was provided by the teacher if necessary.

However, the main figure who has recently contributed to moving forward practices associated to FC has been Salman Khan and the Khan Academy, who popularised this approach by developing short videos for mathematics lessons in 2011. Khan's methodology was based around the concept of providing students with the input they usually receive during the lesson by means of videos or texts they can work on before the lesson. Classroom time was then devoted to discussions or practical tasks similar to those students usually do as homework. Khan Academy has grown considerably and has broadened its subjects to include science, computing or art to mention but a few.

2.3. Characterization of FC

Having traced the origins of FC, it becomes necessary to delve into the methodological guidelines underpinning this teaching method.

Broadly defined as reversing traditional lecture lessons, the FC constitutes a relatively new and unexplored teaching method which can help promote active learning but also be highly demanding on both learners and teachers.

As described in The Flipped Learning Network, FC moves direct instruction "from the group learning space to the individual learning space" (Flipped Learning Network. 2014: 1) resulting in the creation of a new working space. In this space, learners are expected to develop critical thinking and acquire knowledge before the lesson and then work together, with the teacher's guidance, in the practical application of theoretical contents.

Nevertheless, the definition of FC as simply reversing traditional teaching appears to be quite vague regarding the practices involved. The Flipped Learning Network establishes “four pillars” for effective FC (Flipped Learning Network. 2014: 2):

1) *flexible environments*: physical spaces are rearranged to support both individual and group work and where timelines and assessment become more flexible to adapt to students’ learning styles and particular needs.

2) *learning culture*: it promotes a learned-centred approach where students are actively involved in the building of personally meaningful learning.

3) *intentional content*: content is intentionally designed to foster the development of “conceptual understanding” and “procedural fluency”.

4) *professional educator*: the instructor becomes an active observer who provides feedback and assessment to students and shows a tolerance towards “controlled chaos”.

Grounded on these basic pillars, a vast gamut of FC models is currently being implemented. The widespread use of Internet-based resources allows teachers to design and carefully plan the sequence of contents, the delivery method and the assessment tools. However, this can also pose serious problems for teachers who are not acquainted with this teaching method since they are expected to create both an in- and out-classroom environment where students can engage in collaborative and meaningful learning.

Estes, M. D., Ingram, R., and Liu, J. C. (2014), propose a simple model for flipping the classroom based on three stages: pre, in and post- class:

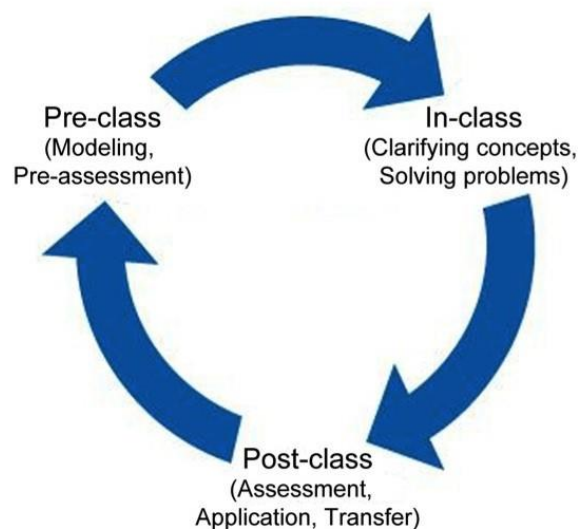


Figure 3. The stages of a flipping class (Estes, Ingram and Liu, 2014)

In the stage prior to the in-class, the instructor often makes use of an asynchronous environment (online texts or videos, for instance) to deliver the information to students. This pre-class stage is mainly devoted to “inform, communicate and generate awareness” (Estes, M. D., Ingram, R., and Liu, J. C., 2014).

Teaching materials must have been designed by teachers using a variety of resources and adapting content to learners’ needs. Students must become acquainted to the material before the in-class stage, which is devoted to discussions, peer interactions and problem-solving (Mazur, 2009: 51).

During the in-class stage teacher-student interaction takes place through the use of prompts or questions. However, the focus is on student-student interaction as it provides active engagement of every student in the class. Students are required to perform tasks in which they apply concepts in a practical way and also to explain such concepts to their peers (Crouch and Mazur, 2001: 970). Lessons are designed to build strategic skills which require an adaptation of contents to a variety of situations. These trial-error situations promote far transfer of knowledge. (Clark and Mayer, 2011:21).

After classroom time, teachers must provide feedback and assessment on students’ tasks. This may be carried out by means of rubrics where the criteria and standards for performance are clearly set out.

It is at this stage that students are encouraged to apply the contents they have acquired in previous stages to real life in order to keep them engaged in their learning process.

3. METHODOLOGY

3.1. Research Design

3.1.1. Rationale

The present research has focused on determining the main assets and pitfalls of the FC for the teaching and learning of a foreign language as well as the most effective ICT resources for its implementation. In the same vein, the study was aimed to identify the possible barriers students may find to follow a FC course.

It is a cross-sectional study which comprises four groups of students and six English teachers from the same school in Sevilla. Primary sources of information have been considered as the study has focused on the perceptions of students and teachers on the FC and the evaluation of the most effective ICT resources for its implementation.

The present investigation follows a mixed pattern, as it is both quantitative and qualitative in nature. The quantitative part of the investigation is an instance of practical research since it is aimed at delving into pedagogical principles experimented with in the classroom. It is a group study carried out with four groups of students.

For the analysis of the collected data both interpretative and statistical methods will be combined.

3.1.2. Sample

The present study has been conducted within four groups of students and six English teachers from the same high school, the IES² Heliche (Olivares, Sevilla). Students have been the target respondents in the qualitative part of the study dealing with research questions 2 and 3, while teachers have been participants in the qualitative part of the investigation dealing with research question 1.

The sample groups of students participating in the quantitative part of the study belong to both bilingual and non-bilingual programs, as we seek to establish differences between those groups when facing a FC course. They correspond to the 2nd and 3rd years of Compulsory Secondary Education and comprise a total of 96 students. They are distributed in the groups as follows:

² IES stands for the Spanish of High School: *Instituto de Educación Secundaria*.

- 2nd year CSE, bilingual group: 26 students
- 2nd year CSE, non-bilingual group: 21 students
- 3rd year CSE, bilingual group: 27 students
- 3rd year CSE, non-bilingual group: 22 students

The qualitative part of the study has been conducted with a group of six teachers belonging to the Department of English of the aforementioned school. They are all tenured teachers at their permanent teaching destination and have ample experience in teaching English (more than ten years).

3.1.3. Variables

The specific variables affecting the results of the quantitative study are broken down in detail below. Three main types of variables will be considered: dependent, independent and moderating variables.

- Dependent variables:
 - Students' competence in the foreign language
 - EFL teaching method (bilingual or non-bilingual)
- Independent variables:
 - School setting
- Moderating variables:
 - Age
 - Motivation for language learning
 - Access to online resources outside the school

In the qualitative part of the investigation, we seek to gauge their perceptions on the main strengths, weaknesses, opportunities and threats which the FC entails. Thus, six teachers from the Department of English have been interviewed.

Considering the high level of homogeneity within the group of teachers, no specific variables will be considered since they do not exert any modulating effects on the aspects considered.

3.1.4. Instruments

Two main types of instruments have been employed for information gathering: questionnaires and interviews.

Questionnaires have been chosen for the quantitative part of the study as they allow quantification and objective analysis. They have been designed following a closed-ended design. In the first questionnaire, aimed at gathering information to answer research question 1, students were required to grade the items from 1 to 5 within a Likert scale. In the second questionnaire, focused on research question 2, they were required to state whether they agreed or not with the statements proposed and to justify the reason, if necessary.

As for the qualitative part of the research corresponding to research question 3, interviews were carried out within the group of teachers. These interviews were semi-structured in order not to avoid spontaneity completely but to direct the development of the conversation in some way, particularly if the teacher is not familiar with the FC.

3.1.5. Instrument Validation

For the validation of questionnaires a double pilot process has been followed. The proposed questionnaires were submitted to the coordinator of bilingualism of the school who has specific training in the FC, in order to guarantee their validity.

After correcting the anomalies detected by the expert, the questionnaires were submitted to a sample group of students whose characteristics were similar to those included in the study. The sample group included 12 bilingual and non-bilingual students in the 2nd and 3rd years of CSE.

3.1.6. Instrument Administration

For the administration of questionnaires and tests, groups with similar characteristics were selected in order to establish a certain degree of homogeneity in the groups chosen. The questionnaires were administered at the end of the academic year and they were personally delivered and group administered.

Interviews were carried out individually and face-to-face with each of the six teachers so as to foster confidentiality and prevent participants from influencing each other's answers. Around 15 minutes were allocated per participant. A semi-structured design was followed, with clear-cut questions established beforehand, in order to allow a certain degree of spontaneity and elaboration on the part of the interviewees. The questions included in the interviews were aimed at identifying the main strengths and weaknesses of the FC in the

teaching and learning of EFL. The interviews were not recorded but instead, notes were taken during the interviews in order to analyse and interpret the data later.

3.1.7. Data Collection

The present study is an instance of non-experimental research as it does not manipulate conditions but, rather, explore students' and teachers' attitudes and opinions concerning the FC, the most useful resources that can be employed and the possible barriers students may find to follow a FC course.

3.1.8. Data Analysis

Both quantitative and qualitative analysis have been used in order to answer the research questions. The qualitative analysis has been carried out by the application of a system of predetermined categories to the data obtained via interviews.

For the quantitative analysis of the data obtained via questionnaires the following descriptive statistical procedures have been used:

- Central tendency measures: mean, in order to identify the most effective ICT resources for implementing the FC in an EFL class.
- Variability measures: standard deviation, in order to determine how homogeneous or heterogeneous the groups are.

4. RESULTS AND DISCUSSION

This section is devoted to the analysis and interpretation of the results obtained from the questionnaires and interviews. In doing so, it will be divided in three subsections dealing with the three research questions proposed for the study.

4.1. Most effective ICT resources for FC

The increasingly ubiquitous access to the Internet has led to the diversification of resources for language teaching and learning. Provided the great variety of resources at the disposal of students and teachers, it becomes necessary to identify which ones are the most effective in the implementation of the FC to the teaching and learning of EFL. (See appendices 1 and 2).

The high degree of heterogeneity of the groups accounts for their different learning styles. They show significantly different preferences for the activities proposed, depending on the degree of familiarity they present with the resources associated to these tasks. All the activities proposed in the questionnaire were awarded considerably high scores, although the following were awarded the highest scores in each group. The activities with the highest scores are summarized in the tables below:

Activity	Punctuation	S. Deviation
Watching videos with explanations about a topic	4,33	,77
Watching presentations with texts, video and audio	4,27	,67
Using e-learning platforms (Moodle)	3,73	,88
Collaborating your own work to blogs	3,66	1,21
Participating in videoconferences via <i>Skype</i> , <i>Whatsapp</i> or similar programs	3,6	1,37

Table 3. 2nd year of CSE (bilingual group)

Activity	Punctuation	S. Deviation
Watching videos with explanations about a topic	4	,75
Watching presentations with texts, video and audio	3,73	1,03
Reading texts	3,66	1,11
Prepare your own presentations, posters using different tools	3,53	,91
Listening to recordings	3,46	,74

Table 4. 2nd year of CSE (non-bilingual group)

Activity	Punctuation	S. Deviation
Watching videos with explanations about a topic	4,11	0,75
Using e-learning platforms (Moodle)	3,94	0,87
Prepare your own presentations, posters using different tools	3,83	1,15
Participating in videoconferences via <i>Skype</i> , <i>Whatsapp</i> or similar programs	3,77	1,16
Chatting online	3,61	1,14

Table 5. 3rd year of CSE (bilingual group)

Activity	Punctuation	S. Deviation
Watching videos with explanations about a topic	4,42	,64
Watching presentations with texts, video and audio	4	1,03
Listening to recordings	3,85	1,09
Reading texts	3,57	1,08
Prepare your own presentations, posters using different tools	3,28	,99

Table 6. 3rd year of CSE (non-bilingual group)

Surprisingly enough, all the groups awarded the highest score to watching videos with explanations. Although they awarded different punctuations to them, all the groups seem to perceive as most useful those activities in which content is delivered through videos or using some kind of visual aids. Hence, **video broadcasting tools** seem to be one of the most effective resources to deliver content to students. In the same vein, presentations in different formats can effectively be used to present content and explanations. In this sense, resources such as **Powerpoint** presentations, **Prezis** and **infographics**, where text can be combined with images and sound may be of great utility.

The most significant difference found between bilingual and non-bilingual groups of students comes from the fact that bilingual groups tend to appreciate the use of **e-learning platforms** such as Moodle as highly useful. This can be attributed to the fact that the use of Moodle is part of their everyday learning in the bilingual programme. As part of the bilingual programme at this school, teachers elaborate and upload contents and tasks to the platform. Thus, most of students are familiar with its use and find it useful. This is not the case in non-bilingual groups, where students usually work with the textbook and sometimes some additional materials, but they are not usually required to make use of e-learning platforms.

Students in bilingual groups also tend to perceive as more useful those activities which imply an active participation on their part such as collaborating their own work to **blogs**. On the contrary, students belonging to non-bilingual groups appreciated activities in which content is delivered to them and not created by them. The use of blogs where students can

collaborate their works and also give some feedback on their peers works seems to be an attractive and motivating resource for students.

Students from both bilingual and non-bilingual groups also considered as useful those activities related to the listening of recordings. Resources such as **podcasts** can be used by teachers to deliver short lectures or explanation as well as by presenting different situations of communication, providing students with real examples of language use in several contexts. Furthermore, for those students who feel motivated to create their own work, podcasts can be used to present their projects and share them with the rest of their peers.

Regarding the use of **applications for synchronous communication**, such as *Skype* or *Whatsapp*, students in bilingual groups seem to be prone to their use for language learning. This type of online programmes and applications provide students with valuable opportunities to practice and expand their resources in communication, be it with other peers, the teachers or native speakers.

4.2. Possible Barriers Deterring Students from FC Courses

It has been widely acknowledged that the FC caters for different learning styles and for students' learning pace. Nonetheless, students' attitudes and access to online resources play a fundamental role in the successful implementation of the FC. In order to discern the most relevant barriers deterring students from completing a FC course, the students were required to complete questionnaire number 2, expressing their agreement or disagreement with a series of statements. (See appendices 3 and 4)

A major drawback could be thought to lie on the limited **access to the Internet** on the part of some students. Nevertheless, most of the students have Internet access at home and only a small percentage of the students asked were found not to have Internet access at home. Some of these students, however, stated that they could access the Internet for free in the city library and the civic centre. Thus, the problem arises from the use students make of the Internet. Around 74% of the students stated that they use the Internet mostly for playing games or using the social networks. Only 26% claimed that they use the Internet mostly as a resource for their study, looking words up in dictionaries or searching for information. Most of these students belonged to bilingual groups. This fact is easily explained if we consider that bilingual students show, in general terms, higher motivation for language learning. In this sense, **lack of motivation** can also be considered as a major barrier deterring students from successfully completing a FC course.

Overall results indicate a significant difference among students in the 2nd and those in the 3rd year of CSE. Younger students tend to have difficulties when facing autonomous work. 66% of students in the 2nd year of CSE, both in bilingual and non-bilingual groups stated that they found difficult to work on their own, without the teachers' supervision. Among older students autonomous work was not perceived as particularly demanding as they are used to produce much of their work outside the school without the teachers' supervision. Thus, a possible barrier students may find when following a FC course is their **lack of autonomy**. This aspect comes in close relation with the fact that around 60 % of the students stated that have problems to **keep their work up-to-date**. Again, most of these students belong to non-bilingual groups and the percentage is significantly higher in the 2nd year of CSE.

Not surprisingly, the higher number of students stating they do not read the materials prior to the lesson, belong to the same group. 77% of non-bilingual group of the 2nd year of CSE come to class without having become familiar with the contents. Even though students who do become familiar with the materials before the lesson are more likely to follow the teacher's explanations easily, it does not pose a major problem for a traditional lecture lesson since the teacher will explain the contents in detail during classroom time. However, in a FC course, for those students who come to class without having worked on the materials previously, it would be impossible to complete the tasks they are supposed to do during classroom time. Thus, **becoming familiar with the materials** prior to classroom time proves paramount in FC courses.

As far as **technological resources** are concerned, most of the students seem to be familiar with the use of different resources and do not show difficulties when using a new application. Only 20% of the participants said to have problems with the use of new computer programmes or applications.

A final consideration must be given to students' **participation** in the proposed tasks. No significant differences can be attributed to students' age or group. Most of them showed a positive attitude towards participating in activities and felt likely to engage in discussions or give their opinions. 72% of students in the 2nd year of CSE and 73% of those in the 3rd year argued that they feel shy when giving their opinions in public, fearing their peers to make fun of them. Although the use of a CMC environment should help them overcome this limitation, they may find it hard to engage in classroom activities.

From the analysis of the outcomes, we can identify the following as the main potential barriers deterring students from successfully completing a FC course:

- Lack of motivation and interest
- Lack of fluency in the use of online technologies
- Lack of access to the Internet
- Lack of autonomy and self-directing learning skills

4.3. Teachers' Perceptions on the FC Assets and Pitfalls

Research conducted to date has amply extolled on the virtues of the FC, as pinpointed through the critical appraisal of the literature review. Nevertheless, some large pitfalls have also been noticed. This section analyses the outcomes of the interview-carried out with six teachers of English from the IES Heliche on their perceptions about the application of the FC to the teaching of English. (See appendices 5 and 6)

Being familiar with the FC, all the teachers participating in the study confirmed the numerous benefits, particularly for the students, derived from its implementation. They mentioned benefits concerning flexibility, individualized learning, engagement and participation, motivation, responsibility, collaborative learning and meaningful learning.

Based on participants' comments, one of the most salient assets of the FC has to do with the opportunity of overcoming the **limitations of class time** and allowing for a more **individualized attention** to students. All the teachers agreed that the FC permits a higher degree of flexibility with regard to the number of times students can access the contents. Once they become familiar with the contents, they are ready to participate in discussions and perform practical tasks in class and the teacher can solve their doubts and assist them individually.

One participant (no. 2) complained that “the time for lessons is limited and sometimes, we cannot adapt the lecture to the different learning styles of students. Delivering the contents for the students to work at home gives them the possibility to access them as many times as needed and get acquainted to the contents at their own pace.”

As regards **skills development** and language learning, 33% of the teachers recognised that the FC could help not only to the development of language skills by providing students with authentic examples of language use, but also to the development of practical skills. Indeed, one participant (no. 6) explained that “classroom time is devoted to problem-solving tasks, discussions, practical applications of the acquired knowledge. Thus, it provides a context for meaningful and long-lasting learning as relevant situations of communication are

set during classroom time.” In this sense, most of the participants agreed with the possibilities the FC offers students for engaging in real communication and providing them with increased opportunities for meaningful learning.

Another asset acknowledged by participants was the contribution of the FC to engaging both students and teachers in the **selection of contents and the preparation of teaching materials**. Although students’ increased engagement had been reported by previous research (Baker, 2000; Sotillo, 2000; Bikowski and Kessler; Crouch and Mazur, 2001), it was surprising that 50 % of the participants agreed that it would be beneficial for them, as teachers, to keep themselves actively involved in the selection and preparation of teaching materials and not to rely too much on existing materials. In fact, one participant (no. 4) stated that given their experience in their preparation of their own materials for lessons within the CLIL program and the benefits enjoyed in past years, she really thought selecting and developing their own materials would help students improve their skills.

Similarly, another participant (no. 1) confirmed that “the teaching methodology we follow in this school is not based only in the materials provided by the textbook. We firmly believe in our own elaboration of materials which are adequate for the students’ level and as authentic as possible. The FC does not pose any special requirements in this sense. On the contrary, I think it is beneficial for both students and teachers that teachers select and create their own teaching materials.”

In the same vein, the implementation of the FC contributes to **engaging students** in their learning process and to **increase their participation** in the proposed tasks. As one of the participants asserted (no. 4), “introvert and shy students, who do not usually participate voluntarily in class, can have a chance to become more participative in an online environment.” Another participant (no. 3) also agreed that “the use of online resources is always a good way of keeping students engaged in the activities. They often find them interesting and motivating.”

The contribution of the FC to foster students’ engagement comes in close relation with their **motivation**. 67 % of the teachers interviewed agreed to consider the FC as motivating for students since it offers them the possibility of working at their own pace and using resources and tools different from the textbook. However, some of them consider students’ motivation can act as a double-edged sword. One of the participants (no. 1) complained that “nothing works with certain kind of students. They are so demotivated and reluctant to learning English that they refuse to carry out any type of activity, even online tasks or games. I don’t believe the FC could work in these cases.”

Another participant (no. 2) also claimed that we should “bear in mind the students’ profile before we try to implement the FC in our lessons. Some of the students never work at home. If we asked them to watch videos or read texts prior to the lesson, they would not do it and we would lose precious classroom time repeating the same contents.”

Regarding **students’ responsibility**, this teaching method was found to hold students responsible for their own learning, which was perceived as an enormous asset by 83% of the participants. One of the participants (no. 3) stated that “we tend to consider students unable to manage their own learning process. Giving them the opportunity of distributing their own time and managing the information at their disposal would certainly foster their responsibility”.

A further consideration was given by the teachers to the **resources** necessary for the implementation of the FC. One of them (no. 4) pointed out that although most of the students have Internet access at home, “we must not take this for granted in case of implementing the FC. There is still a small percentage of students that do not have the resources necessary to follow a FC course.”

His observations were shared by another participant (no. 6) who thinks that “not all our students have Internet at home. Before implementing the FC, we should be absolutely sure that they can access the Internet and that it does not pose a problem for them.”

On the teaching front, most of the participants voiced as a downside the **highly-demanding and time-consuming nature** of the FC. Although it offers teachers opportunities of keeping contents and tasks fresh, it also poses a great demand on them as they are responsible for the whole process of creation of materials. One of the teachers interviewed (no. 2) argued that “the FC is quite demanding for teachers as they have to select and create all the materials that are going to be used. A great amount of time is necessary to carry out such a project”.

Another participant (no. 6) also claimed that “we devote much time to selecting contents and devising teaching materials even if some of them are ready to use. If we had to create everything, some of us would not have enough time”.

Teachers also recognised that the **lack of training** can be a potential barrier to implement the FC in EFL. Although all of them are familiar with this method, most of them have never followed a course on the practical application of the FC and they acknowledge that the administration offers very few training in this aspect. One participant (no. 5) said that he had recently completed a course of the Junta de Andalucía called “Dale la vuelta a tu clase”

devoted to the implementation of the FC but “even though, I do not really feel confident about implementing it in my lessons.”

Participant no. 6 also argued that “more training is necessary for sure. We try to keep up to date with regard to new teaching methods but the FC is just beginning to be acknowledged in Andalucía. Furthermore, we have to devote our personal time to training since it is included in our working schedule. It is not always possible to find the time for training or to find a useful course.”

The main barriers teachers may find for the proper implementation of the FC rely on the relative novelty of this method. However, **teachers’ attitudes** towards its implementation also prove essential. Their prior experiences can lead them to certain misgivings about this method. 33 % of the participants considered that many teachers may be reluctant to change, particularly those who have been following the same method for years. One participant (no. 2) stated that “once you are familiar with a teaching method, it is difficult to change, especially if the results are good. After having followed the same methodology for years, I do not really feel comfortable about making such a great change.”

A final consideration must be given to the **assessment** of students immersed in a FC course. In general, teachers agreed that assessment always poses a major challenge for them. Indeed, one participant (no. 3) recognised that “assessment is always a difficult task for us, but we count with some useful tools such as tests, rubrics or classroom observation sheets. In my opinion, the same tools could be used for assessment of FC, although with some changes of course.” Another participant (no. 6) stated that “although there is always some subjectivity present in the process of assessing a student, we must be as objective as possible. In this sense, I think rubrics are one of the most useful tools we have in order to reflect students’ achievement of objectives.”

All in all, teachers’ perceptions about the FC were positive in that it can foster participation of students inside and outside the classroom and develop responsibility. Nonetheless, certain shortcomings must be considered before the FC is put in practice in EFL. A deep knowledge about the students’ learning styles, motivation and resources they have at their disposal proves fundamental in order to adequate the contents and tasks.

5. LIMITATIONS OF THE STUDY

As in any research, the present study has faced some limitations which impede the generalization of the findings. One of the most conspicuous limitations of the present study is its cross-sectional design. Data have been collected from 96 students and 6 teachers at one point in time. In addition, the representativeness of the sample chosen for the study is restricted as all the subjects included belong to the same school.

The fact that data collection was confined to only one school and two levels of CSE does not enable the generalizability of the findings. Therefore, firm conclusions about the feasibility of implementing the FC for the teaching of English cannot be drawn.

An ampler sample would allow for the applicability of statistical comparison among the groups. Including a larger number of variables in the study would also contribute to the finding of more statistically significant outcomes.

Although two different sources of information have been considered, the fact that the quantitative part of the study has been carried out exclusively among students and the qualitative part among teachers makes data triangulation impossible. In the same vein, investigator triangulation has not been factored as only one investigator has collected the data, analysed them and written up conclusions. Lack of location triangulation has also been factored as all the individuals included in the study belong to the same school.

Despite the aforementioned limitations, the present study brings preliminary insights into a greatly unexplored field. There is still a strong need for solid research on the pedagogical implications of the FC in the EFL class, yet it can be ascertained that its implementation may bring about a positive shift towards learners' acquisition of meaningful knowledge.

6. LINES FOR FURTHER RESEARCH

Provided the relatively novel character of the FC and the lack of attention given to this teaching method in Spain, further research on this field is clearly called for.

Although a vast gamut of levels can be taught through FC, the implementation of this method tends to narrow down to Post-Compulsory and Higher Education. Research carried out in Compulsory Secondary Education is practically inexistent. Thus, future research should focus on filling this niche.

Future studies on the implementation of the FC should address some major concerns in order to fully understand the possibilities of this teaching method for the teaching and learning of English as a foreign language.

First, longitudinal studies conducted to the date are thin on the ground and should be given priority in order to gather sufficient evidence on the effects of the FC, incorporating pre- and post-testing phases.

The lack of empirical research is also a major niche to be filled. Studies with experimental and control groups should be conducted so as to determine if there are significant differences between students following a FC course and those who follow a lecture course. The homogeneity of the groups should be guaranteed, matching students for sociocultural level, motivation and level of competence in the foreign language. Thus, overcoming the limitations of previous studies conducted with groups of voluntary students or randomly allocated groups.

A mixed research design should be followed, combining qualitative and quantitative methods so as to gather sufficient data on the aspects studied.

Furthermore, there is a dire need for solid research on the effects of the FC not only on the development of L2 skills but also on attitudinal and affective factors. Research of this nature should address a wide variety of issues, e.g. development of comprehension and production skills, acquisition of interactional competences and communication strategies, etc.). Furthermore, the investigation of attitudinal and affective factors associated to skills development proves essential and should become a priority for future studies. A wide range of variables should be considered in future studies, such as motivation, autonomy, learning styles, sociocultural background or setting, as they may shape the research outcomes.

Multiple triangulation should also be considered in future research. Data collected from multiple data-gathering sites and analysed by different researchers will bring about deeper insights on the efficiency of this method.

Regarding teachers, studies should concentrate on the major needs and problems they face in their daily practice. Canvassing teachers' command of CMC resources, the methods and procedures they employ, the support they receive from the administrations and the assessment tools and procedures they use is also critical.

Future research faces numerous challenges and researchers should not ignore the possibilities of using the FC for the teaching and learning of English in Secondary Education. Further research proves crucial in order to unravel all the positive effects derived from implementing the FC and also remedy the drawbacks detected.

7. CONCLUSION

Though the concept of flipping is not new in teaching circles, it has been gaining credence in recent years. The FC entails numerous benefits for students and teachers holding the former responsible for their own learning and turning the traditional lecture lesson into a more individualized space for learning. It undoubtedly implies a change of roles for both students and teachers engaging and motivating students who learn at their own pace and count on the support of teachers who become guides, counsellors and facilitators.

Nevertheless, the FC must not be understood as a way of replacing teachers with videos or simply delivering lectures to students outside the classroom. For a success-prone implementation of the FC, content and tasks must be carefully designed to meet students' needs. Contents must be graded from simpler to more complex and related to students' previous knowledge on the topic. In the same vein, tasks must be attractive and allow for interaction with teachers and other peers in order to foster collaborative learning.

Although it must be perceived as highly-demanding, once teachers and students become acquainted with the FC, they can develop their own model to improve their teaching and to effectively suit students' needs and interests.

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9. APPENDICES

9.1. Appendix1. Questionnaire 1

Which of these activities are more interesting and motivating for learning?

These activities interest and motivate me when learning English in the following degree:

5 = very much 4 = considerably 3 = somewhat interesting 2 = little 1 = not at all

- 1. Completing a series of tasks to reach a goal
- 2. Listening to recordings
- 3. Gathering information on a topic using different websites
- 4. Watching videos with explanations on a topic
- 5. Reading texts online
- 6. Participating in forums or online discussions
- 7. Collaborating your work to blogs
- 8. Watching presentations with mix text, image and sound
- 9. Preparing presentations, posters, murals...
- 10. Participating in videoconferences or videochats via *Skype* or *Whatsapp*
- 11. Using word / concept maps
- 12. Chatting online
- 13. Using e-learning platforms (Moodle)

9.2. Appendix 2. Results of RQ1

9.2.1. Results of RQ1 in 2nd year CSE bilingual group

Activity	Mean	T. Deviation
Completing several tasks to reach a goal	3,53	1,38
Gathering information using different websites	3,53	1,29
Listening to recordings	3,33	1,33
Watching videos with explanations about a topic	4,33	,77
Reading texts	2,86	1,37
Participating in forums or online discussions	2,66	1,5
Collaborating your own work to blogs	3,66	1,21
Watching presentations with texts, video and audio	4,27	,67
Prepare your own presentations, posters using different tools	3,4	1,29
Participating in videoconferences via <i>Skype</i> , <i>Whatsapp</i> or similar programs	3,6	1,5
Using word / conceptual maps	2,2	1,14
Chatting online	3,53	1,19
Using e-learning platforms (Moodle)	3,73	,88

9.2.2. Results of RQ1 in 2nd year CSE non-bilingual group

Activity	Mean	T. Deviation
Completing several tasks to reach a goal	2,33	,72
Gathering information using different websites	3,26	,96
Listening to recordings	3,46	,74
Watching videos with explanations about a topic	4	,75
Reading texts	3,66	1,11
Participating in forums or online discussions	3,06	,88
Collaborating your own work to blogs	2,26	,88
Watching presentations with texts, video and audio	3,73	1,03
Prepare your own presentations, posters using different tools	3,53	,91
Participating in videoconferences via <i>Skype</i> , <i>Whatsapp</i> or similar programs	3,26	1,22
Using word / conceptual maps	3,26	1,03
Chatting online	2,8	,86
Using e-learning platforms (Moodle)	1,66	,72

9.2.3. Results of RQ1 in 3rd year CSE bilingual group

Activity	Mean	T. Deviation
Completing several tasks to reach a goal	3	1,18
Gathering information using different websites	2,55	1,04
Listening to recordings	3,11	1,18
Watching videos with explanations about a topic	4,11	,75
Reading texts	3,33	,84
Participating in forums or online discussions	2,88	1,4
Collaborating your own work to blogs	3,11	1,13
Watching presentations with texts, video and audio	3	1,32
Prepare your own presentations, posters using different tools	3,83	1,15
Participating in videoconferences via <i>Skype</i> , <i>Whatsapp</i> or similar programs	3,77	1,16
Using word / conceptual maps	2,72	1,4
Chatting online	3,61	1,14
Using e-learning platforms (Moodle)	3,94	,87

9.2.4. Results of RQ1 in 3rd year CSE non-bilingual group

Activity	Mean	T. Deviation
Completing several tasks to reach a goal	3,14	1,35
Gathering information using different websites	2,85	1,35
Listening to recordings	3,86	1,09
Watching videos with explanations about a topic	4,42	,64
Reading texts	3,57	1,08
Participating in forums or online discussions	2,71	1,38
Collaborating your own work to blogs	2,92	1,07
Watching presentations with texts, video and audio	4	1,03
Prepare your own presentations, posters using different tools	3,28	,99
Participating in videoconferences via <i>Skype</i> , <i>Whatsapp</i> or similar programs	3,2	1,47
Using word / conceptual maps	2,64	1,44
Chatting online	2,93	1,2
Using e-learning platforms (Moodle)	2,5	,85

9.3. Appendix 3. Questionnaire 2

Answer Yes / No to the following statements. Justify why if necessary.

1. I usually read the materials before the lesson
2. I have got access to the Internet at home
3. I usually use the Internet for my study (look words up, further info...)
4. I mostly use the Internet to play
5. I have problems to keep my work up- to-date
6. I find it hard to work on my own, without the teacher's surveillance
7. I can use different applications and tools for different works, e.g. Powerpoint, Prezis, videos...
8. I can appreciate my colleagues' works and contributions
9. I can easily differentiate useful from useless information
10. I like to participate and give my opinions on the proposed topics

9.4. Appendix 4. Results of RQ 2

9.4.1. Results of RQ 2 in 2nd year of CSE bilingual group

Statement	Yes	No
I usually read the materials before the lesson	77%	23%
I have got access to the Internet at home	88%	12%
I usually use the Internet for my study (look words up, further info...)	58%	42%
I mostly use the Internet to play or to check social networks	73%	27%
I usually keep my work up- to-date	73%	27%
I find it hard to work on my own, without the teacher's surveillance	62%	38%
I can use different applications and tools for different works, e.g. ppt, prezis, videos...	77%	23%
I can appreciate my colleagues' works and contributions	81%	19%
I can easily differentiate useful from useless information	65%	35%
I like to participate and give my opinions on the proposed topics	77%	23%

9.4.2. Results of RQ 2 in 2nd year of CSE non-bilingual group

Statement	Yes	No
I usually read the materials before the lesson	23%	77%
I have got access to the Internet at home	90%	10%
I usually use the Internet for my study (look words up, further info...)	33%	67%
I mostly use the Internet to play or to check social networks	90%	10%
I usually keep my work up- to-date	47%	53%
I find it hard to work on my own, without the teacher's surveillance	71%	29%
I can use different applications and tools for different works, e.g. ppt, prezis, videos...	57%	43%
I can appreciate my colleagues' works and contributions	62%	38%
I can easily differentiate useful from useless information	71%	29%
I like to participate and give my opinions on the proposed topics	67%	33%

9.4.3. Results of RQ 2 in 3rd year of CSE bilingual group

Statement	Yes	No
I usually read the materials before the lesson	89%	11%
I have got access to the Internet at home	100%	0%
I usually use the Internet for my study (look words up, further info...)	81%	19%
I mostly use the Internet to play or to check social networks	67%	33%
I usually keep my work up- to-date	67%	33%
I find it hard to work on my own, without the teacher's surveillance	11%	89%
I can use different applications and tools for different works, e.g. ppt, prezis, videos...	89%	11%
I can appreciate my colleagues' works and contributions	92%	8%
I can easily differentiate useful from useless information	70%	10%
I like to participate and give my opinions on the proposed topics	78%	22%

9.4.4. Results of RQ 2 in 3rd year of CSE non-bilingual group

Statement	Yes	No
I usually read the materials before the lesson	82%	18%
I have got access to the Internet at home	95%	5%
I usually use the Internet for my study (look words up, further info...)	41%	59%
I mostly use the Internet to play or to check social networks	82%	18%
I usually keep my work up- to-date	41%	59%
I find it hard to work on my own, without the teacher's surveillance	27%	68%
I can use different applications and tools for different works, e.g. ppt, prezis, videos...	91%	9%
I can appreciate my colleagues' works and contributions	100%	0%
I can easily differentiate useful from useless information	73%	27%
I like to participate and give my opinions on the proposed topics	68%	32%

9.5. Appendix 5. Interview Model

1. Are you familiar with the FC and what it consists of?
2. What does classwork consist of? And homework?
3. What is the role of the teacher during class time? In your opinion, is this a positive change?
4. What is the role of students during class time? Do you consider it positive for students' learning?
5. Do teachers have the necessary training to implement the FC? Enough time?
6. What kind of challenges do you think this method poses for teachers and students? (Regarding contents, type of activities, resources, materials preparation...)
7. What are the most positive effects of this method? (Regarding flexibility, engagement, motivation...)
8. What are the weaknesses of this method? (Regarding resources available, autonomy, demands on students and teachers...)
9. How are students assessed?

9.6. Appendix 6. Results of RQ 3

		%
Assets	Students' engagement and participation	67
	Students' motivation	67
	Individualized learning	100
	Flexibility	100
	Students' responsibility	83
	Meaningful learning	83
	Teachers' engament	50
	Development of practical skills	33
	Free classroom-time	83
Pitfalls	Lack of resources for students	50
	Time-demanding for teachers	83
	Lack of teachers' training	83
	Teachers' defiance of changing teaching method	33
	Lack of motivation of students	33