

Digital Instruction and Flipped Classroom: Age and Autonomy in the EFL Learning Context

Marcos Teruel-Ferrer and Noelia Gargallo-Camarillas

Universitat Jaume I

ABSTRACT: *The emergence of the Information and Communication Technologies (ICTs) has been a revolution in the English as a Foreign Language (EFL) learning environment. Technological devices and the Internet have opened new teaching outlooks so students can learn synchronously or asynchronously. Moreover, the pedagogical use of ICTs is complex because it requires learners to be autonomous regardless of their age. This paper aims to measure students' Learning Autonomy at different educational stages in an EFL digital environment. Particularly, it addresses two RQs: (1) Does Digital Instruction show positive or negative results among EFL students at Secondary Schools in Spain? and (2) Do Age and Learning Autonomy affect the effectiveness of the Flipped Classroom? The study took place at a Spanish secondary school with two groups of students with different ages as the participants. Both groups followed the Flipped Classroom instructional strategy and a test was implemented to measure the students' Learning Autonomy. The obtained data offered positive results in relation to Digital Instruction in the two groups, regardless of their age. However, results seem to prove that the degree of Learning Autonomy is higher among older students. Further research should analyse other variables such as motivation, digital literacies and learning strategies.*

KEYWORDS: *EFL, Learning Autonomy, Age, Digital Instruction, Flipped Classroom*

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I. INTRODUCTION

The way teachers understand education has been changing during the last decades due to the emergence of the information age. In the words Tourón and Santiago (2014: 6), “education no longer consists in «knowing things», but in knowing how to manage information, knowing how to consider new problems and new ways of solving them, that is, learning to make decisions about one’s own work”. This revolutionary learning environment requires a switch of students’ roles so they are no longer relegated to a passive stance. Instead, they actively build their own knowledge. Whereas old teaching and learning approaches were characterised by the passive role of the students, contemporary views consider students as the main focus of the learning process. In this sense, students have active, communicative and collaborative roles in the English as a Foreign Language (EFL) classroom.

Technological advances have extensively granted access to the Internet through digital devices such as tablets, laptops, and especially, smartphones. Communication has vastly broadened its scope, opening a gateway for constant innovation in teaching and learning methods:

The ever growing need for good communication skills in English has created a huge demand for English teaching around the world, as millions of people today want to improve their command of English or ensure that their children achieve a good command of English... The worldwide demand for English has created an enormous demand for quality language teaching and language teaching materials and resources. (Richards 2006: 5).

Accordingly, the use of Information and Communication Technologies (ICTs) in EFL learning and teaching has been expanded and it is widely considered to have educational potential inside and outside the classroom (Lai & Gu, 2011). For instance, Flipped Classroom is one of the recent areas of potential within ICTs use in education.

This work uses Flipped Classroom technique to examine the students’ autonomy at two different educational stages so as to correlate their age with their degree of autonomy in the digital learning environment. In order to determine whether Flipped Classroom is suitable for all age ranges, an experiment was conducted to reveal possible differences regarding their level of autonomy. Moreover, this study intends to offer further insights on the viability of the method across age in order to improve its future application in the EFL Spanish context.

II. EFL EDUCATION IN SPAIN: RECENT CHANGES

As an European country, Spanish schools follow the Common European Framework of Reference (CEFR) guidelines in order to teach EFL at all the educational stages. Nowadays, students are taught English since the age of 3 and it is a compulsory subject throughout Primary and Secondary school as well as in Bachillerato (i.e. A levels) or vocational training courses. Moreover, there is a strong interest in EFL teaching at all these levels since this subject prepares students for their future prospects: working, travelling or studying abroad, situations that require using English as a Lingua Franca (Reichelt, 2006).

One of the main reasons for this increasing interest is the necessity to incorporate students into the European job market, as Spain presents a considerably higher unemployment rate compared to the European average (Robbins, 2015). However, the proficiency EFL level of the Spanish students is poor and Spain ranked 19th out of a total of 25 European countries in English proficiency in 2017 (Pariona, 2017). An article published on *El País In English* (Torres, 2017) revealed that only about 13% of Spanish High School licensed students possess an intermediate level of English, with 35% remaining at beginner's level.

In conclusion, EFL teaching in Spain is in need of significant changes if the country wants to reach an appropriate level of English, as it is required in the European context. For instance, it needs to break the barriers that traditionally existed in relation to space and time. For this reason, Spain is among the European countries that are leading the gradual implementation of modern initiatives (Caraker, 2018) in order to take into account the globalised context and therefore bridge the distance between language users around the world. With Flipped Classroom being one of the most promising fields of research in EFL, the conclusion stands that examining its possibilities might be of great interest for the Spanish educational system.

III. FLIPPED CLASSROOM: REASONS TO SUCCEED

The flipped classroom is a relatively new teaching strategy in which teachers employ ICTs to deliver the content outside of the classroom, freeing up class time for more productive interaction. The idea was successfully applied by the first time in the late 1990's at the University of Miami-Ohio, and the term was soon coined by Lage, Platt and Treglia (2000). Since then, it has gained significant popularity and, in fact, the method is being adopted worldwide at university level (He et al., 2016). For example, Bergmann, Overmyer and Wilie (2012) concluded that most teachers are considering Flipped Classroom as one of the most prominent future techniques in the EFL context.

Flipped Classroom consists in recording the lessons and delivering prior to class in a multimedia format, such as videos or recorded presentations. Then, students can do the lessons during their free time, at home or wherever they deem convenient. Classroom time, as a result, does no longer consist in the teacher's lectures. Instead, classroom time is devoted to completing the work that would normally be assigned as homework. This relationship becomes much more bidirectional: students have numerous opportunities to consult their teacher, who is generally able to spend the full class duration solving the doubts that might have arisen, and assisting students directly with the assigned tasks.

A review of the literature regarding Flipped Classroom yielded that several instructors have experimented with it and claim to have obtained positive results. Lage et al. (2000) concluded in their study that students preferred the Flipped Classroom format to traditional lectures, indeed mentioning the opportunity to work in groups and to interact one-on-one with the instructor as the main reasons for its success. In addition, Flipped Classroom gained relevance after being demonstrated to increase overall grades compared to the traditional format, as in Deslauriers et al. (2011). Besides, Herreid and Schiller (2013) also found that students showed more commitment to learn since their class was flipped. Sadaghiani (2011) experimented with Multimedia Learning Modules (MLMs) and found that 60% of the observed students strongly preferred them and also appreciated being able to view the videos wherever, whenever and as much as they wanted (Sadaghiani, 2011). Then, it indicates that Flipped Classroom fosters and facilitates autonomous learning, although certain degrees of learning independence are necessary for the method to work properly. Finally, Marlowe (2012) found in her Flipped Classroom's experience that low performing students showed the greatest increase in grades. This was explained by the fact that students had more opportunities to work collaboratively and to receive appropriate assistance. By ceasing to spend class time on lectures, she was immediately available when there was the need for any clarification. However, according to Marlowe (2021: 20) higher performing students "also appreciated the opportunity to work at their own pace and to study the topic at more depth" in contrast to the pace that must be followed by the class in a traditional classroom.

Finally, the previous findings seem to indicate the viability of the method within a significantly broad scope of students' profiles. However, it must be mentioned that the school population in some of the aforementioned studies is economically stable and therefore all students had convenient access to the Internet, which may not be the case in other contexts. In relation to the economic barrier, it must be argued that traditional approaches also present their own financial drawbacks, since the lack of teacher's assistance can force students to pay for private lessons in order to understand doubts related to their homework and to reinforce

the explanations for the exams. Therefore, despite the economic barrier, Flipped Classroom remains a promising instructional strategy.

IV. AGE AND AUTONOMY IN THE FLIPPED CLASSROOM

During his research on the flipped classroom, Szparagowski (2014) found that most of the initiatives had been implemented at University level, which differs from Secondary School classrooms in several important factors (Szparagowski, 2014). Originally thought as a solution to non-attendance, the flipped switch accommodates students that do not want to risk wasting their time in unproductive lessons but who have the autonomy to complete work on their own. This context requires the development of Learning Autonomy according to 21st century teaching trends, which is a synonym of being independent anytime and anywhere (Zhong, 2008). In other words, Learning Autonomy refers to the control that people have over their learning processes both inside and outside the classroom. Moreover, autonomous learners are defined as students that accept responsibility for their own learning (Little, 1991) and consequently show initiative regarding the learning process (Schunk, 2005).

The foundation of this study is the concern for the correlation between Age and Learning Autonomy and for how this might affect the efficiency of flipped pedagogy. Tragant and Victori (2012: 295), after analysing the results of their 2003 study, and concluded that “with increasing age and hours of instruction, students tended to become more resourceful language learners”. A further study in 2006 led both authors to the conclusion that, regardless of hours of instruction, students develop their learning strategies as they age. For instance Tragant and Victori (2021: 295) suggested that “age may be a better predictor of language learning strategy use than language proficiency”. This might evidence that pedagogy which relies on students’ autonomy is not equally effective in all age ranges.

This work is an attempt to put Flipped Classroom into practice in an EFL classroom and uncover some of its possible strengths and weaknesses. More specifically, the main purpose is to demonstrate that Age and Learning Autonomy are relevant factors regarding the effectiveness of this digital approach. In light of the reviewed literature, this research has two Research Questions:

RQ1: Does Digital Instruction show positive or negative results among EFL students at Secondary Schools in Spain?;

RQ2: Do Age and Learning Autonomy affect the effectiveness of Flipped Classroom?

V. METHODOLOGY

The experiment was conducted at Llombai Secondary School, located in Borriana (Castellón, Spain). As a state-owned centre, it covers an extensive education supply including the full six years of secondary school and vocational training courses. In the 2018-2019 school year, the school accommodated a total of 968 students.

The participants of this study were the students of two different educational stages with four years of difference. Whereas the first group was a 1st of ESO (students were about 13 years old), the second group was a 1st of Bachillerato (students were about 17 years old).

The implementation of the study took one month. First of all, the students were introduced to the project and explained what it would consist of. Both groups agreed to participate so the video lessons were designed and the topics were chosen according to each group’s educational curriculum. On the one hand, to design the videos it was needed a Windows Surface Pro 3 laptop, with tactile function, and a free screen-recording software called Bandicam, which allows recording the teacher’s voice as well as showing the screen notes in real time. On the other hand, whereas the ESO students had to study possessives, students of Bachillerato had to deal with the passive voice. After finishing the design of the videos and choosing the topic, the video lessons were uploaded. Both groups had five days to watch the videos before the implementation of the test, which was the main instrument and the final step to collect data. Each group had a different test but both of them contained two practical exercises and a conceptual question about the target item, based on similar sentences and constructions showcased in the video lessons. The following pictures (see Figure 1 and Figure 2) show examples of some questions included in the tests:

Translate these sentences into English | Traduce estas frases al inglés

- El perro de Clara es grande y marrón. → Clara's dog is big and brown
- Los amigos de Andrea toman el desayuno a las 7. → Andrea's friends have breakfast at 7 o'clock
- La casa de mis vecinos es muy grande. → My neighbours house is very big

Figure 1: 1st of ESO Test

3. Complete the sentences using the correct form of have/get something done and the words in brackets.

He didn't fix his car himself, he had it fixed (it / fix) at the garage.

Let's just order some pizzas and get them delivered (them / deliver) to our home.

If you can't see properly from here, you should have your eyes tested (your eyes / test).

Figure 2: 1st of Bachillerato Test

VI. FINDINGS AND DISCUSSION

Regarding the RQ1, the obtained data in the tests showed positive results among all the students. As for students of 1st of ESO, the participants scored an average of 6.08 points and although some marks were very low, a greater proportion of the group obtained accomplishing marks considering the results of previous tests. In the case of some students, the mark was abnormally high, contrasting significantly with the student's record in the English subject.

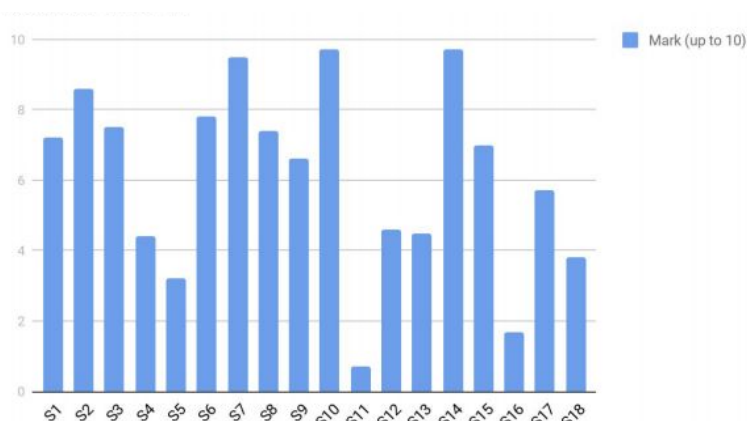


Figure 3: 1st of ESO Students' Average Marks

As for students of 1st of Bachillerato, the results were also positive. In fact, they were noticeably better than the obtained results of 1st of ESO. Only four people (16%) failed the test and it is worth mentioning that even in those cases, the grade was not as low as it had been for the same students in previous tests. In fact, the test was quite close to a 100% pass ratio. The group presented an average mark of 6.81 points, which is remarkably high if the school records of the Bachillerato English subject are considered.

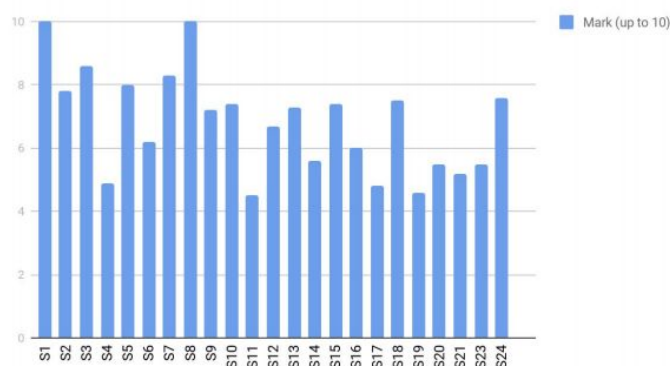


Figure 4: 1st of Bachillerato Students' Average Marks

In relation to RQ2, participants' autonomy was examined in relation to the degree of activity completion. The results confirmed the previous expectations: the activity was not completed by some students in the younger group. A total of 15 students out of 22 participated successfully in the experiment, accounting for 68,2% of the group. The remaining 31,8% did not watch the video for various reasons, being forgetfulness the most common one. Four of the students who had not participated volunteered to complete the test the following session, which was accepted since it would not disrupt the experiment's results. Despite having extra time to watch the videos and participate, the original results were the ones taken into account in terms of participation. These exceptional participations have been included in the diagram in a section named '(*) Participated', so that the original number of participants remains unaltered. The remaining 13,6% refused to participate regardless of the additional time to watch the video, arguably providing further proof of the existing issue.

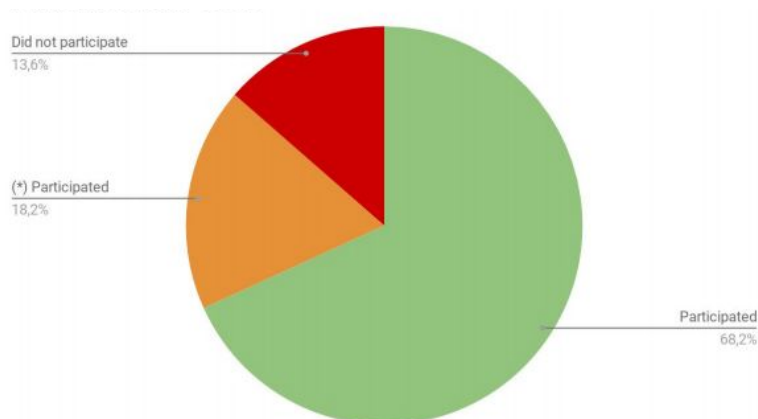


Figure 5: Test Completion in 1st of ESO

Regarding the group of Bachillerato, 23 students out of 24 watched the video and sat the test as agreed, which yields a completion of the procedure of 95,8%. A relevant observation for this study was that the student who did not participate had been absent for several months and was thought to be in process of abandoning the course. This means that 100% of the students succeeded in the completion of the task, which fulfilled the previous expectations of the project in terms of Learning Autonomy.

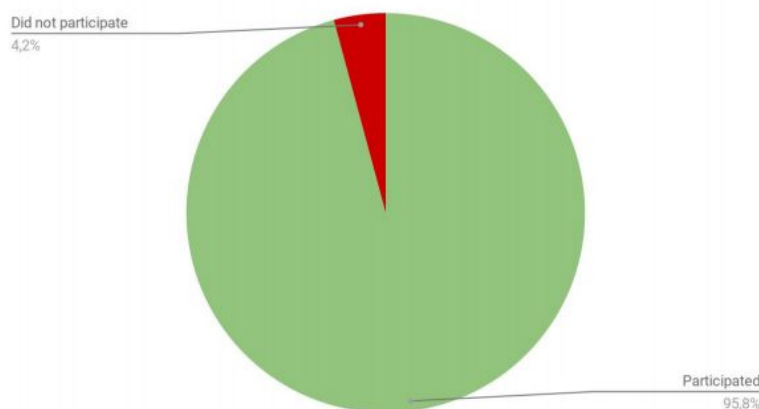


Figure 6: Test Completion in 1st of Bachillerato

VII. CONCLUSION AND FURTHER RESEARCH

The present study attempts to provide some evidence that demonstrates the effectiveness of using Flipped Classroom in the Spanish EFL learning and teaching context. Results showed that both groups managed to score satisfying results. Moreover, in order to obtain some qualitative data, both groups were asked for their opinions about the aforementioned instructional strategy and they were all overwhelmingly positive. Some of the reasons towards this digital preference were the ability to watch the videos wherever, whenever and as many times as they wanted. Moreover, they considered the video format to be effective in terms of content delivery, as well as being a motivating and refreshing experience for them.

Regarding the conclusions on Age and Learning Autonomy, the study proved that there might be a significant difference in relation to the students' ability to manage the lessons autonomously. Students of Bachillerato, who were at least four years older than the other group, remembered to watch the video and participated without any irregularities. However, students of 1st of ESO showed more disconnection from their learning process by forgetting to watch the videos.

Finally, this work intends to be the starting point for further research. For this reason and considering the previous assumptions, further research should focus on analysing the students' motivation and digital literacies, which seem to have an impact on the effectiveness of Digital Instruction. To do so, this work suggests the elaboration of new virtual lessons' strategies which overcome the limitations of the present study (e.g. time and number of students). The gradual incorporation of improvements into the Flipped Classroom technique and the obtaining of further empirical and qualitative insights will contribute to pave the way for modern pedagogical methods, which may find their place as the standard educational practice in the future.

REFERENCES

- [1]. Bergmann, J., Overmyer, J. & Wilie, B. (2012). The Flipped Class: What it is and What it is Not. The Daily Riff.
- [2]. Caraker, R. (2018). Spain and the Context of English Language Education. Nihon University.
- [3]. Education First (2018). "English Proficiency Index Report". <https://www.ef.com/wwen/epi/> [retrieved: 16.2.2021]
- [4]. Deslauriers, L., Schelew, E. & Wieman, C. (2011). Improved Learning in a Large-Enrollment Physics Class. *Science* 332(6031), 862-864.
- [5]. He, W., Holton, A., Farkas, G. & Warschauer, M. (2016). The effects of flipped instruction on out-of-class study time, exam performance, and student perceptions. *Learning and Instruction* 45, 61-71.
- [6]. Herreid, C., Schiller, N. (2013). Case Studies and the Flipped Classroom. *Journal of College Science Teaching*, 42(5), 62-66.
- [7]. Lage, M., Platt, L. & Treglia, M. (2010). Inverting the Classroom: A Gateway to Creating an Inclusive Learning Environment. *The Journal of Economic Education*, 31(1), 30-43.
- [8]. Lai, C., & Gu, M. (2011). Self-regulated out-of-class language learning with technology. *Computer Assisted Language Learning* 24(4), 317-335.
- [9]. Little, D. (1991). *Learner autonomy 1: Definitions, issues and problems*. Dublin: Authentik Language Learning Resources Ltd.
- [10]. Marlowe, C. (2012). *The effect of the flipped classroom on student achievement and stress*. Montana State University.
- [11]. Pariona, A. (2017). "Countries That Are Most And Least Proficient In English. World Atlas". <https://www.worldatlas.com/articles/countries-that-are-most-and-least-proficient-in-english.html> [retrieved: 16.2.2021]
- [12]. Reichelt, M. (2006). English in a multilingual Spain. *Cambridge University Press* 22(3), 3-9.
- [13]. Richards, J. C. (2006). *Communicative Language Teaching Today*. New York: Cambridge University Press.
- [14]. Robbins, Molly M. (2015). "What is the 'Economic Value' of learning English in Spain?", *Scripps Senior Theses*, 691. http://scholarship.claremont.edu/scripps_theses/691 [retrieved: 16.2.2021]
- [15]. Sadaghiani, H. (2011). Using multimedia learning modules in a hybrid-online course in electricity and magnetism. *Physical Review Physics Education Research*, 7(1).
- [16]. Schunk, D. (2005). Self-regulated learning: The educational legacy of Paul R. Pintrich. *Educational Psychologist* 40(2), 85-94.
- [17]. Szparagowski, R. (2014). "The Effectiveness of the Flipped Classroom". *Honors Projects*, 127.
- [18]. Torres, A. (2017). "The traditional method of teaching English isn't working". *El País in English*, https://elpais.com/elpais/2017/05/10/inenglish/1494403365_000558.html [retrieved: 16.2.2021]

- [19]. Tourón, J. & Santiago, R. (2014). "The Flipped Classroom". <http://www.digital-text.com/wp-content/uploads/2015/03/FlippedClassroom.pdf> [retrieved: 16.2.2021]
- [20]. Tragant, E. & Victori, M. (2012). Language learning strategies, course grades, and age in EFL secondary school learners. *Language Awareness* 21(3), 293-308.

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