



FLIPPED CLASSROOM AND CREATIVE LEARNING RESOURCES FOR TEACHING HISTORY

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Abstract. The study aims to analyse the perceptions and pedagogical skills of university students in the implementation of the flipped classroom in the degree of primary education. The sample consists of 209 students following the bilingual English programme at the University of Córdoba, Spain. The study is described as a non-experimental quantitative research, which means that it focuses on the collection and analysis of data without intervention or manipulation of variables. A fifteen-item Likert-type questionnaire was used to collect the data. The questionnaire appears to be on a scale of 1 to 5, where participants rate their answers according to the options given. The findings suggest that new electronic learning strategies need to be incorporated into teaching methodology. There is an emphasis on the importance of providing practical approaches to digital teaching and didactic resources. Students have shown a positive attitude towards their training needs, particularly in consolidating historical thinking and integrating active learning methods with good teaching practice.

Keywords: creativity, educational skills, flipped learning, historical thinking, motivation.

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1. Introduction

The classroom is a dynamic research laboratory where work by educational skills allows us to express the creativity, concerns, and interests of university students. Changes in university teaching and research have become more pronounced due to the COVID-19 pandemic. In this methodological scenario, the integration of active learning methods and digitized teaching has been adjusted to meet the challenges which both teachers and students face. A collaborative and interdisciplinary approach combines digital resources adapted to real learning problems. In a context of both initial and continuous training, teachers must change their concept of teaching–learning in order to face any methodological change undertaken in an educational space. In this way, skills acquisition must be significantly reinforced, and the role of university students in their training process needs to be reimagined. Therefore, teachers have to enter into the university study processes, the success of which is determined by personal creative expression (Šliogerienė & Valūnaitė-Oleškevičienė, 2017).

The flipped classroom is a teaching method where students learn the basics of the subject before the masterclass session. They then go into the classroom to engage in active learning. Firstly, studies have shown that this model motivates students to become involved in active learning and improves their thinking and collaborative learning skills. Secondly, this method

helps to improve problem-solving skills and promotes an interactive working environment, which in turn improves communication and collaboration between students. Then, students feel responsible for their learning as they control their learning pace and master the learning content and can come to the session better prepared than in traditional approaches (Long et al., 2017). In this way, learning outcomes and motivation to learn are conducive to changing attitudes towards civic participation, creativity, and student–teacher interaction.

The key issue is to provide students with didactic tools that will prevent them from having to learn theoretical content by heart both in Spanish and in English, as well as to strengthen the management of digital resources. Hence, the teaching method known as flipped classroom requires university teachers to have specific training in digital competences. In this regard, in order to change the methodological approach in the university context, Molina-Torres (2022b) proposes introducing digital tools which enrich both the didactic strategies and the work on skills for bilingual teaching. This evidence represents a challenge to integrate digital learning as an active teaching method in primary education bilingual plans, as well as to introduce new teaching and research techniques (Loizou & Lee, 2020).

We must also add the development of digital teaching resources in English and Spanish, these tools enable bilingual learning and content reinforcement in both languages (Turan & Akdag-Cimen, 2020). It is substantial that university teacher education programs incorporate student-centered teaching skills and strategies that encourage active learning and class participation, and that adapt to the individual needs and learning styles of students. In fact, by working on the contents either in a collaborative way, comprehension difficulties are solved, and students are motivated to combine language learning with an online and/or face-to-face method (Fatani, 2020).

To this end, an essential element facilitating the development of the flipped classroom is the coordination of the teaching team to work on projects and challenges. In this regard, some authors (Chou et al., 2020) underline that including digital resources reinforces learning with an interdisciplinary perspective, based upon an initial learning environment. Here the teaching role focuses on guiding the teaching process and supporting learning practices which lead to a greater autonomy on the part of the learners. As students are responsible for their own learning, they are receptive to more active methodologies encouraging both creativity and reflective thinking (Espada et al., 2020).

2. Research context

This study focuses on a training environment for new teachers, which has favoured the response to the plethora of methodological changes in different learning contexts in recent years due to COVID-19 pandemic (Karalis & Raikou, 2020). A hybrid learning space, alternating face-to-face and virtuality, turned university students into social researchers of their history, giving meaning to the curriculum content through creativity (Cooper, 2013). In this sense, it is necessary for teachers to be aware of all the changes in the student body and to adapt their methodology so that the youngest students feel comfortable in class. For this, Gnatyshina and Salamatov (2017) propose a series of methods for the correct development of the class: training, interactive methods, and digital resources. All these factors and modernizations

have to be taken into account by teachers. It is unthinkable that in a society that is in continuous change, a field as decisive as education remains stuck in outdated methodologies that do not work the skills that are increasingly demanded today. In fact, this proposal has led us to rethink training in competences for digital didactic learning, as well as to promote the professional development of teachers (Forte-Celaya et al., 2021).

From this perspective, both teacher and learner assume that their roles are reversed when interacting and communicating through digital information technologies (Estes et al., 2014). This reality transforms the teachers' views by confirming that transmissive practices make it difficult to include digital resources in teaching plans. However, as Kim (2017) states, depending on the demands of the students, access to curricular content is possible both in the classroom and outside the school. With this model, the impact of digital media in these spaces promotes virtual inclusion, which is a major challenge for accessing technological platforms and devices (Altemueller & Lindquist, 2017). The teacher works in a creative way, applying new methods, technologies, and tools (Csikszentmihalyi, 2013).

Thus, trial and error, together with teacher/student feedback, are essential in order to correct poorly elaborated ideas and to delve into the particular subject matter. In this context, inclusion, autonomy, and critical thinking build a more creative school culture. The development of these good teaching practices benefits work both in and out the traditional classroom. In addition, motivating and involving students with an investigative learning method favors decision making, doubt solving, and knowledge construction without having to learn content by heart. Therefore, new teachers' perceptions about the development of digital literacy are positive during their university education. Personalization of learning contributes to developing both digital and communication skills (Chou et al., 2020).

On the other hand, flipped learning in higher education has been studied both nationally and internationally over the last two decades, generating many publications that provide significant research related to cooperative learning, educational motivation, and teacher education (Bergmann & Sams, 2012; Demski, 2013; Flumerfelt & Green, 2013; Good & Lavigne, 2017; He et al., 2016; Mills & Gay, 2018; O'Flaherty & Phillips, 2015; Yilmaz, 2017). As in all active methodologies, the flipped classroom combines collaborative learning with two forms of teaching: face-to-face and online. In fact, this educational mix has brought about a change in skill-based training in universities. This digital didactic learning offers different options, as it articulates a hybrid proposal based upon the student's practical activity, along with a methodological approach which is both face-to-face and online (López López et al., 2018). Applying digital learning in university studies is an opportunity to develop creativity, teaching and learning methods and approaches (Cropley, 2008).

According to other studies, university faculty training must be continuous, updated, and student-centered in order to provide quality higher education and a meaningful learning experience for students (Gibbs & Coffey, 2004; Molina-Torres, 2021). Nevertheless, in university classrooms, the flipped classroom is not common, even though it provides answers to a number of questions and encourages inquiry-based learning. In this situation, initial teacher training is not the most appropriate option for acquiring professional skills and using information and communications technology (ICT) resources in teaching (Hao & Lee, 2016). For this purpose, educational institutions must promote the implementation of methodologies

such as the flipped classroom in order to internalize the contents about history which are taught in primary education (Gaughan, 2014). It is also essential to focus on improving the learners' abilities to analyze, understand, manage, reflect, and assess the most innovative learning practices which help them when having direct contact with online materials (Chen et al., 2014). Thus, the flipped classroom also helps to design innovative proposals and to stimulate creativity and historical thinking. In this way, educational resources use multiple ways of thinking, associate different concepts and seek solutions to problems.

It should be noted that this method helps students consolidate their previous experiences and knowledge by promoting feedback and collaborative work (Thi Thai et al., 2017). Hence, one factor influencing their performance is the teacher's creativity in the learning process to make it dynamic, flexible, and practical (Freeman Herreid & Schiller, 2013). Moreover, the didactic possibilities of the flipped classroom in relation to including more creative tasks allow for richer interactive activities, virtual educational workshops, and videos created in the classroom blog (Herrera Pavo & Casado Rodrigo, 2015). Indeed, the research carried out by Girmen and Kaya (2019) reports the advantage of this model is the support of student-centered education, through the various resources used to adapt to any need presented by the student, as well as the integration of the student in the teaching-learning process. Thereby, this new digital model redesigns the use of traditional learning as an opportunity to solve real problems, thereby strengthening the use of flipped classroom as an active learning strategy with a constructivist approach (Durak, 2018).

3. Method

3.1. Aims

This research focused on analysing what university students think about training in historical thinking skills and the use of creative resources in the implementation of flipped classroom. In order to achieve this overall aim, the specific aims are to:

- (SO1) Provide participants with digital tools to implement flipped classroom;
- (SO2) Analyse students' bilingual skills in a virtual workspace;
- (SO3) Identify the relationship between digital literacy and creativity in educational resources;
- (SO4) Explain the benefits and/or difficulties of this innovative methodology for teaching history.

3.2. Participants

The sample consisted of 209 students in the third year of the bilingual degree in primary education at the University of Córdoba (UCO), 93 males (44.5%) and 116 females (55.5%). The selection procedure was non-probabilistic because student groups were assigned to the teachers who participated in the research. The mean age of the selected participants was 22 years. In addition, students had access to a classroom blog and the *Moodle* platform so as to develop the flipped classroom to complement the traditional methodology. In this way, the students were able to work in a learning environment based on digital skills away from learning concepts by heart, which is common in didactics of history.

3.3. Design of the research

A non-experimental survey questionnaire has been designed it draws on the work of Creswell (2014), and Tashakkori et al. (2020). This quantitative instrument consisted of fifteen items presented on a Likert-type scale of 5 values from 1 (strongly disagree) to 5 (strongly agree). It allowed us to respond to different variables and to rigorously analyze the data obtained in the proposal. Before implementing this questionnaire, the methodological design focused on working with a classroom blog, in order to have an overview of how the flipped classroom works, as well as the didactic resources that can be created during the didactic proposal (Raimundo around the World, 2022). This implementation via a digital tool they had used on the *Moodle* platform allowed them to recreate a learning environment which is both collaborative and customized at the same time.

3.4. Data collection and analysis instrument

The data analyzed are part of a questionnaire entitled “New teachers’ views on the Flipped Classroom and History Teaching”. It examines the beliefs of bilingual students about historical education, and the digital competences they acquire by means of an active methodology such as the flipped classroom (Table 1). For its elaboration and validation, we relied upon the recommendations of four experts from two Spanish universities, who are experienced in training in active methodologies and didactics of history. This tool was used before the start of the project (pre-test) and at the end of the project (post-test). At the beginning of the proposal, a pre-test with these fifteen questions was completed to find out the students’ prior ideas about the use of the flipped classroom and continuous training in professional skills for undergraduates. Later, a post-test was carried out to determine the extent to which the objectives set out in the proposal had been achieved.

Table 1. Scale for evaluation (source: created by authors)

NEW TEACHERS’ VIEWS ON THE FLIPPED CLASSROOM AND HISTORY TEACHING
1. My digital skills training has improved my bilingual education.
2. The flipped classroom influences information and communications technology training and creative thinking.
3. The use of the classroom blog enhances knowledge about the flipped classroom.
4. <i>Moodle</i> platform makes learning bilingual content easier.
5. Online sessions should be implemented in all courses for the degree in primary education.
6. This way of working encourages both cooperative work and student–teacher interaction.
7. I am more involved and likely to participate in the active learning process through digital resources.
8. The flipped classroom promotes best teaching practices in didactics of history.
9. Methodological innovation is necessary in the professional development of teachers.
10. Combining face-to-face and online sessions facilitates problem solving in history teaching.
11. The flipped classroom improves my curricular training and, in turn, my teaching skills.
12. Virtual training has not been enough during my teaching–learning process at the university.
13. The contents I learn via the flipped classroom model encourage creativity and avoid learning by heart.
14. The flipped classroom allows for self-assessment during my own teaching–learning process.
15. Assessment via the flipped classroom has a research focus.

The students answered some questions about the methodologies they would use in their classrooms, the didactic resources they would develop in master classes and practical sessions, their thoughts on collaborative work (Mayordomo & Onrubia, 2015), and the advantages of the flipped classroom for teaching social science and history. Finally, to complete this analysis instrument, a virtual space was created, setting different learning rhythms for the students using the *Moodle* blog. In this way, we provided guidance for the development of certain themes related to historical time and its didactics (Thorp & Persson, 2020). Regarding data interpretation, an *Microsoft Excel* spreadsheet was used to analyze the percentages and graphs, as well as to respond to the objectives set out in the research.

4. Results

In order to respond to the first objective, focused on the use of digital resources to implement the flipped classroom, items 3 and 7 have been selected. As shown in Figure 1, item 3 shows that 82% of students agree that using the blog improves their knowledge of the flipped classroom (pre-test), while the post-test is discreetly higher at 88%. Regarding item 7, the pre-test indicates that 91% of the students think that digital tools favor their active learning, while the post-test result was similar (93%).

Regarding the second objective, related to the acquisition of digital and bilingual competences in an online environment, items 1 and 4 have been chosen. The results of item 1 show in Figure 1 that, in the pre-test, 74% of the participants agree that their training in digital skills has improved their bilingual training, compared to the post-test, where 83% of the respondents acknowledge the improvement. For item 4, the pre-test shows a significant 90% of students agreeing that the *Moodle* platform facilitated the teaching of bilingual content, while the post-test shows that 92% of students maintain their view (Table 2).



Figure 1. Pre-test and post-test percentages for the research objectives 1 and 2 (source: created by authors)

Table 2. Percentages of pre-test and post-test (objectives 1 and 2) (source: created by authors)

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Totally agree
3. The use of the classroom blog enhances knowledge about the flipped classroom.					
Pre-test	3	0	5	10	82
Post-test	1	1	2	8	88
7. I am more involved and likely to participate in the active learning process through digital resources.					
Pre-test	1	1	1	6	91
Post-test	2	0	1	4	93
1. My digital skills training has improved my bilingual education.					
Pre-test	4	2	9	11	74
Post-test	2	3	5	7	83
4. Moodle platform makes learning bilingual content easier.					
Pre-test	1	2	4	3	90
Post-test	0	1	2	5	92

For the third objective, related to digital literacy skills and teaching resources creativity, items 2 and 13 were selected. As can be seen in Figure 2, item 2 shows high percentages both in the pre-test and the post-test, 84% and 87%, respectively. Students agreed that the flipped classroom influences their training on the use of ICT and creative thinking. Similarly, for item 13, it was found that 78% (pre-test) of the students think that the contents acquired via the flipped classroom are creative and motivating, leaving aside the need for learning concepts by heart, while the post-test shows a higher percentage (81%). In this sense, universities, as institutions often support ICT and teachers provide environments for creativity. Participants show how creativity can be fostered through active learning methods such as flipped classroom and they can solve problems creatively (Table 3).

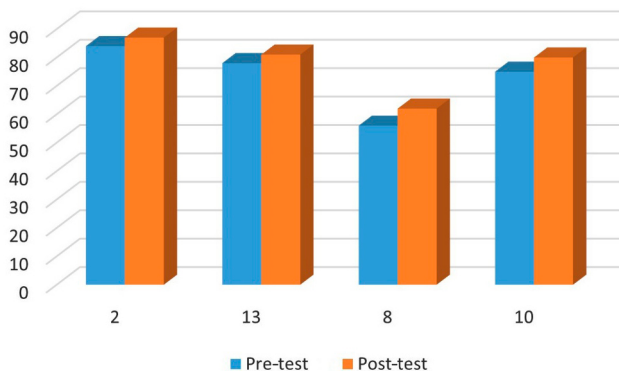


Figure 2. Pre-test and post-test percentages for the research objectives 3 and 4 (source: created by authors)

Table 3. Percentages of pre-test and post-test (objectives 3 and 4) (source: created by authors)

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Totally agree
2. The flipped classroom influences information and communications technology training and creative thinking.					
Pre-test	1	5	7	3	84
Post-test	1	3	2	7	87
13. The contents I learn via the flipped classroom model encourage creativity and avoid learning by heart.					
Pre-test	4	6	8	4	78
Post-test	2	1	6	10	81
8. The flipped classroom promotes best teaching practices in didactics of history.					
Pre-test	2	9	21	12	56
Post-test	6	11	13	8	62
10. Combining face-to-face and online sessions facilitates problem solving in history teaching.					
Pre-test	3	5	8	9	75
Post-test	0	0	7	13	80

In relation to the fourth objective, which focuses on reflecting on the difficulties and benefits of the flipped classroom for history teaching, items 8 and 10 have been selected. A discreet 56% of the students agree with the statement in item 8 in the pre-test, which increases in the post-test up to a 62%. Regarding item 10, in the pre-test, 75% of the participants agreed with the combination of face-to-face and online sessions to solve problems in the teaching–learning of history, while Figure 2 shows an 80% for the post-test. By way of conclusions, the data do not show a significant difference between the pre-test and the post-test results, which makes us think that students had a background in ICT. Finally, it has been possible to confirm how active methodologies and their contribution to knowledge about historical thinking is positively accepted by university students.

5. Discussion

The flipped classroom has a positive impact both on ICT training and the university students' needs (Tomas et al., 2019). From this innovative, educational perspective, it is presented as an active methodology, halfway between face-to-face and online proposals. To this end, the continuous improvement of the use of digital tools must be considered with an experiential approach. In fact, according to some authors (Hinojo-Lucena et al., 2018), including digital resources in the university enables both interaction and collective learning. In practice, this situation facilitates the students' involvement through new group learning dynamics (Lo & Hwang, 2018). In this light, by implementing this proposal, we were able to confirm that the knowledge acquired through personal experiences is expressed in practical activities in the classroom blog. Resources shared by participants, such as interactive maps, tutorials, digital dossiers, and quizzes, are intended to be used both in and out the classroom (Sáez-López et al., 2020). In every session, in order to practice those contents related to the didactics of history, the tasks were collaborative and carried out online (Levstik, 2017).

The general response was positive, as the main benefit that the participants perceived from using the flipped classroom is that the students liked it, because they found the pre-class learning materials useful and enjoyed the independence and liberty that the flipped classroom model provides. In addition, they also have time in class for active learning, having more practice and being able to apply their knowledge. But it is very important to take into account that the students have learned the knowledge in the pre-class learning, since if this were not the case, this factor would become an obstacle, because it implies a possible lack of preparation of the students before the class. Moreover, to this obstacle that we might face if we want to use the inverted classroom, we must also keep in mind that the time and effort that must be dedicated to the preparation of the flipped classroom instruction is an additional challenge. Thus, it is vitally significant to ensure that students have prepared for the classroom session before class and to have well-organized instruction with appropriate timing and other factors in order to avoid chaos in the classroom (Sergis et al., 2018).

The results of the research show a considerable progression in the use of the flipped classroom of initial teacher training for new teachers. Therefore, this improvement in continuous learning processes leads to creative and motivated professionals (Martínez-Jiménez & Ruiz-Jiménez, 2020). Also, the results obtained by some authors (Jovanović et al., 2017) were similar and relate to the productivity of this method in a university setting. This method transforms the teaching–learning process from traditional methodology, creating a flexible and cooperative classroom environment (Kocabas & Gokce Erbil 2017). Its constructivist approach calls for the adequate incorporation of ICT and the achievement of digital competences. The virtual environments were rated positively by the students, with almost 95% of them agreeing to use the blog to improve their practical knowledge of flipped classroom in both the pre-test and post-test. Furthermore, as the data analysis shows, it is noteworthy that by incorporating this method before, during, and after class, the transversal skills in the curriculum favor bilingual learning (Molina-Torres, 2022a). It should be recalled that around 90% of students consider digital skills and the use of *Moodle* to facilitate their bilingual education.

Similarly, between 80–90% of students confirm that the creativity of teaching resources and their digital culture is enriched by implementing the flipped classroom. This shows that new students perceive their practical training in a context of best teaching practices (Wilcox Brooks, 2014). However, when analyzing the data related to the educational possibilities of the flipped classroom in teaching history, the participants show a discreet degree of satisfaction (pre-test 56% and post-test 62%). These percentages improve slightly, between 75–80%, when online and face-to-face sessions help them to tackle the problems of both understanding and explaining historical concepts in a more motivating and less linear way. Therefore, it is necessary to identify students' interests in order to incorporate the pedagogical advantages that will allow them to learn in a personalised way, focused on the interpretation of the past. Good intentions notwithstanding, students naturally respond to history lessons as long as the teacher combines face-to-face and online sessions. In this way we can facilitate problem solving in history lessons and create an environment of creativity with didactic resources.

6. Conclusions

This educational experience has provided useful didactics for teachers by exploring the possibilities of electronic learning and the flipped classroom at the university. Its development and results have brought to light both the strengths and limitations of the study. The following conclusions have been reached:

- Third-year students of the bilingual degree in primary education at the UCO showed a positive, receptive, and participating attitude towards implementing the flipped classroom in their training as teachers. Hence the need to train university teaching staff in active learning methodologies, as well as to strengthen their curricular progress;
- Despite the lack of knowledge about the teaching strategies used in developing practical activities both in and out the classroom, students tried to use cooperative learning in order to adapt to different teaching methods according to their educational demands;
- The need to keep training students in teaching methodologies is crucial to delve into the contents of the subject *Didactics of Social Science* and bilingual teaching in English. To this end, student–teacher interaction allowed for continuous feedback in an online learning space;
- When using the flipped classroom, different educational competences are acquired, which implies a challenge for problem-solving in the students' digital education. Moreover, thanks to the use of online resources, they can share doubts, hypotheses, and research results. In this sense, the improvement of professional skills is also an opportunity to learn how to learn in a more autonomous way;
- The teaching of creative thinking through the inverted classroom is positively valued by university students as a learning strategy based on meaningful learning, especially in terms of flexibility and fluidity of teaching. Therefore, students should be provided with various creative thinking tools in order to benefit from the development of creative thinking habits;
- In short, we can conclude that good teaching practices and the training of future primary education teachers are an essential element to inculcate in university students the creativity and motivation to face real classroom situations in different contexts pedagogical. In addition, this active learning method allowed participants to get a clearer perspective on the concepts and situations which appear during their learning, something that does not usually come to light in a master class.

In conclusion, the flipped classroom methodology can be very beneficial, since, as we have seen, it provides students with opportunities to participate in active learning experiences, motivates them to learn and encourages thinking and problem-solving skills (Fulton, 2012). Notwithstanding, we have to know it well, to know which are the points or factors that we have to take into account for its good development, as well as to know that certain problems may arise and that we as teachers have to be able to solve them in the best possible way, always benefiting the students. Now, knowing this, we can consider that the inverted classroom model is beneficial since more time can be dedicated in class to active learning and the teacher can provide immediate feedback during the educational session.

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