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Use of Educational Technologies and the Possibility of Integrating the Flipped Classroom in the Teaching of the French Language in Moroccan Schools

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Annotation. This study explored the integration of ICTE in the Moroccan education system, focusing on the potential adoption of flipped classrooms for teaching French. 106 teachers participated, showcasing strong technological skills. However, most of them were not familiar with the pedagogy of flipped classrooms. Nevertheless, they expressed eagerness for training, indicating the potential for successful adoption and bridging the gap between technology and effective teaching in Moroccan schools.

Keywords: *learning French, education, teaching strategies, educational innovation, ICT, Moroccan education system, flipped classroom.*

Introduction

For several decades, the Moroccan education system has been grappling with an ongoing crisis that numerous reforms have failed to address. Mohammed VI, King of

Morocco, has consequently devoted many speeches to this issue, including one in August 2013. In that speech, he stated, "The current situation of the education and training sector requires a pause for an objective examination of conscience to assess the achievements made and identify the existing weaknesses and dysfunctions" (King of Morocco Mohammed VI, 2013). The issue of the language of instruction and the language taught is all the more critical as the PIRLS reports (from 2001, 2006, 2011, and 2016) and the TIMSS assert a crucial decline in student learning in languages, reading, and science subjects. Moreover, students are struggling not only in French as a first foreign and second language but also in Arabic (their first language).

Indeed, the teaching of the French language and instruction through the French language in Morocco has always had an important place in the reforms implemented in the Moroccan educational system since independence. As stated by Mgharfaoui (2016), "It is a language that is increasingly present, increasingly important, but also less and less mastered, as if its extension in time and space were to be paid for by an insufficiency in its mastery" (Mgharfaoui, 2016).

In recent years, during the digital age, Information and Communication Technologies (ICT), have been increasingly used globally. To offer quality teaching and therefore promote effective learning, teachers are being encouraged to immerse themselves in this technological world that is developing at an accelerated pace. Thus, teachers are tasked with the responsibility of making class sessions more motivating through innovative teaching aids. Additionally, they are expected to encourage their students to use these resources outside the classroom for research preparation, solve problem-solving, and acquiring new knowledge.

With the development witnessed in the field of education, the Moroccan educational system has undergone several reforms to align with global developments. One of the most important reforms took place in the year 2000, which was the result of the national charter of education and training. Through the tenth lever of this charter, the Ministry of Education encourages the actors in the educational sector to embrace these new information and communication technologies in their practices.

Due to the ongoing evolution of digital resources in education, the concept of the flipped classroom is beginning to gain momentum in the teaching and learning process. This approach has turned traditional teaching methods upside down. Fundamentally, the Flipped Classroom concept revolves around the idea that "what is traditionally done in the classroom is done at home, and what is traditionally done at home in the form of homework is done in the classroom" (Bergmann et al., 2014). This pedagogy redeploys the conventional dimensions of teaching/learning. It represents "a continuum, one dimension of which is linked to the presence/distance relationship and another to the relationship between 'teaching' and 'learning'" (Lebrun & Lecoq, 2016). Recently, the health crisis due to COVID-19 has forced Morocco to adopt distance learning as a solution to reduce the spread of the pandemic and ensure continuity of schooling for learners. However,

it should be acknowledged that distance learning can never totally replace face-to-face teaching. With its hybrid aspect, the flipped classroom approach allows for the integration of both distance and face-to-face learning, thereby harnessing the advantages offered by each mode of instruction.

In the context of the crisis in French language teaching in Morocco and the increasing popularity of the flipped classroom approach, which has gained traction in recent years and is striving to become more democratic, we present this research, which holds the potential to be groundbreaking. Through this study, we aim to address several questions that could contribute to the advancement and enhancement of the Moroccan educational system, with a specific focus on French language instruction in junior and senior high schools. This is a significant challenge that calls for a change in traditional teaching practices.

Our research tackles an educational issue related to the teaching and learning of French within the Moroccan education system. We propose that introducing the flipped classroom as a pedagogical innovation can effectively address the existing challenges in this subject. The primary objectives of our study are to explore the integration of technology in the Moroccan education system, identify the specific difficulties faced in teaching and learning the French language in Morocco, and explore the potential of the flipped classroom to transform the teacher-student relationship and foster interdisciplinary skills. To ensure the relevance of our research, we will involve Moroccan French teachers who will participate in the study.

In light of this, we propose the following research hypotheses:

- ICTE tools are integrated into the teaching practices of Moroccan French teachers.
- Moroccan French teachers are inclined to adopt the flipped classroom pedagogy.

To verify these hypotheses, our research questions revolve around the following: Do Moroccan French teachers possess the necessary skills and knowledge to effectively utilize ICTE? How are they currently incorporating these tools into their teaching practices? Furthermore, we intend to ascertain their familiarity with the flipped classroom pedagogy and assess their willingness to explore and integrate this innovative approach.

By addressing these research questions, our objective is to acquire a deeper understanding of the current status of ICTE integration within the Moroccan education system and the particular obstacles encountered by French language instructors. Additionally, we aspire to investigate the prospective advantages of the flipped classroom model in enhancing the instruction and acquisition of French in Morocco, ultimately enhancing the professional growth and efficacy of Moroccan French educators.

Conceptual Background and Theoretical Framework

Moroccan Educational System and ICT

Morocco has always considered its educational system as one of its priorities. However, after the 1990s, the conditions imposed by the context of globalization and the rapid development of society have forced Morocco to fully invest in appropriating new technologies. In this regard, the most profound reform of Moroccan educational system has been undertaken since the early 2000s. "This reform is the result of the National Charter of Education and Training, elaborated in a comprehensive participatory and consultative framework and adopted by all the components of the Moroccan society at the end of the nineties. The period from 2000 to 2009 was declared the national decade of education and training, during which the objective of reforming the education system should be achieved" (Ministry of National Education of Higher Education and Scientific Research [MEN], 2004).

In the continuity of the reform included in the national decade of education and training, the Ministry launched the program GÉNIE (Generalization of information and communication technologies in education in Morocco) in 2006. This program represents a large-scale project aimed at integrating ICT in Moroccan schools. It is based on three fundamental components. Firstly, there is an emphasis on training of pedagogical staff, teachers, principals, and inspectors as they are the primary users of ICT. Secondly, the program focuses on equipping educational institutions with multimedia rooms that contain essential technological tools. Lastly, the GÉNIE program aims to provide teachers with appropriate digital resources to support their instructional practices.

In response to this program and following a national dynamic for the integration of ICTE in schools, several structures have emerged. Among these structures, there are those dedicated to creating digital resources, such as the national laboratory of digital resources. As well as structures whose objective is to promote these resources, such as the National ICTE Portal, which provides information on ICTE, facilitates the dissemination of digital resources and offers collaborative space. In addition, the National Laboratory of Digital Resources at the National Center for Educational Innovation and Experimentation. Moreover, the Ministry of Education has established an educational platform called ComPracTICE, which provides distance learning opportunities for teachers interested in enhancing their use of ICTE in their teaching practices. Launched on November 1, 2015, the ComPracTICE project aims to "Capitalize on all initiatives related to the integration of ICTE. From the growth of needs to professional development among pedagogical actors, The ComPracTICE project offers a distance learning device that meets the needs and satisfies expectations" (MEN, 2015).

To complete this vital project called GENIE, the Ministry of National Education has signed strategic cooperations agreements to consolidate its strategy of generalization of

ICT in Moroccan schools. Two significant collaborations stand out, namely those with Microsoft Morocco and the Korea International Cooperation Agency (KOICA).

The partnership with Microsoft Morocco, established in 2004, aims to modernize teaching methods through the integration of ICT (MEN, 2016). This cooperation focuses on leveraging Microsoft's expertise and technology to support the transformation of educational practices.

In 2010, the collaboration with KOICA resulted in the establishment of the Moroccan-Korean ICTE training center. This center serves as a hub for fostering a new culture centered around ICTE, equipping teachers and inspectors with the necessary tools and knowledge to effectively incorporate ICTE in the classroom (Akhchichine, 2010).

These strategic partnerships signify the commitment of the Ministry of National Education to leverage external expertise and resources to advance the use of ICTE in Moroccan schools. By leveraging these collaborations, the Ministry aims to accelerate the integration of technology and innovative teaching methods to enhance the overall educational experience for students and educators alike.

French in Morocco

The integration of French into the Moroccan educational system has a history spanning over a century. Although this language has been officially present in Morocco "since the beginning of the French protectorate in 1912, its status has evolved: from being an official language under the protectorate, it became the first compulsory foreign language in the school system" (Tarnaoui, 2017).

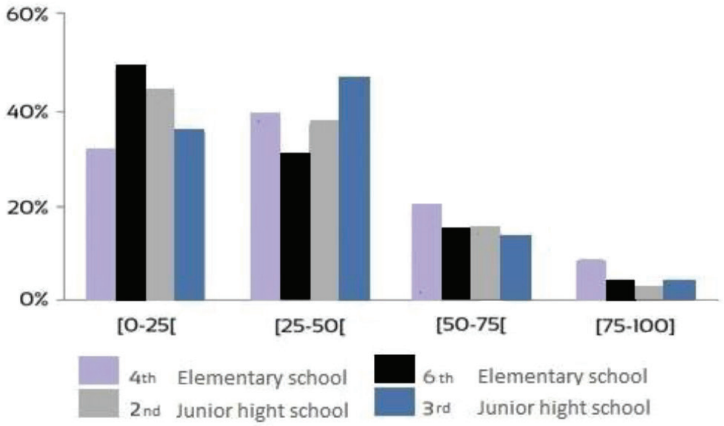
Currently, the French language is omnipresent in the Moroccan education system. It is reinstated from the academic year 2015–2016 "as the language of instruction for science subjects in high school. The Ministry of National Education is also considering introducing it in primary school from the first year instead of the second year and even in preschool" (Mgharfaoui, 2016). The weekly volume of French instruction varies across different levels of education. In primary school, students receive 8 hours of French instruction per week. In middle school, the weekly volume ranges from 4 to 5 hours, depending on the level. In high school, the number of hours devoted to French instruction depends on the field of study, with a range of 2 to 5 hours per week. These allocations reflect the importance placed on the French language within the Moroccan education system, aiming to develop students' proficiency and fluency in French as a key language of instruction and communication.

In recent years, much has been written about the deficits in student learning of the French language. All of the analytical reports indicate serious shortcomings in the mastery of the French language. The Higher Council of Education, Training, and Scientific Research (HCETSR), in its analytical report titled "The Implementation of the National Charter of Education and Training 2000–2013", published in December 2014, presents alarming findings that warrant a pause for reflection.

According to the 2008 National Assessment of Learning Outcomes survey, more than 70% of students in the fourth and sixth grades of primary school, as well as those in the second and third years of junior high school, scored below average in French proficiency (Figure 1). These results indicate a clear need for critical examination and assessment of the current state of French language education in Morocco. This data highlights the urgency of addressing the challenges faced in teaching and learning the French language, emphasizing the importance of implementing effective strategies and reforms to improve student outcomes and enhance their linguistic competencies in French.

Figure 1

Distribution of Students in French According to Their Performance Levels in 2008 (From 0 to 100 Points) (Higher Council of Education, Training, and Scientific Research [HCETSR], 2014)



In another analytical report based on the 2016 National Assessment of Educational Progress survey, the Higher Council of Education, Training, and Scientific Research sheds light on the alarming deficiencies in student achievement in French during the first year of senior high school. The report reveals catastrophic results that indicate significant challenges in student performance.

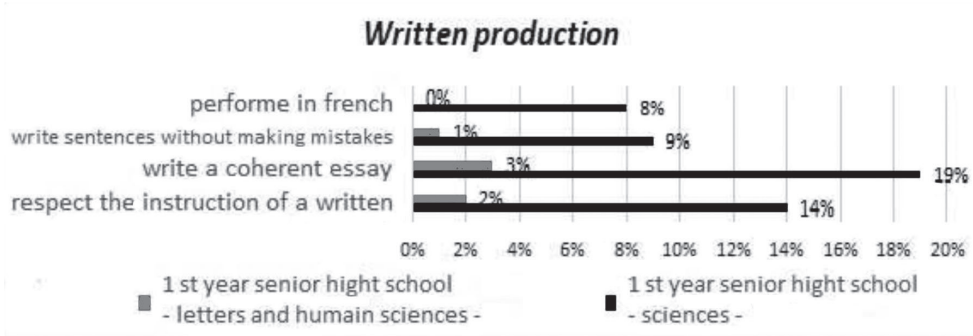
One striking finding, as depicted in Figure 2, is that only 9% of science students are able to write sentences without grammatical and lexical errors. In contrast, the figure drops to a mere 1% for literary students. These statistics underscore the critical gaps in linguistic proficiency among students and highlight the need for targeted interventions and improvements in the teaching and learning of the French language.

The report's findings emphasize the urgent need to address these deficiencies and implement effective strategies to enhance students' writing skills, grammar, and lexical knowledge in French. It calls for a comprehensive approach to language education that

prioritizes linguistic competence and ensures that students across different academic disciplines have the necessary skills to communicate effectively in French.

Figure 2

Distribution of Students in French According to Their Performance Levels in Written Production (HCETSR, 2016)



The results in Figures 1 and 2 highlight, draw attention to a notable disparity between the extensive amount of time dedicated to teaching the French language in all three educational cycles and the relatively low level of mastery exhibited by learners. This discrepancy between these two factors is significant due to several variables. According to Gormati Y., Project Manager for the Reference Centers for French Teaching (PREF), this situation is linked to "the content and programs (too dense with very few teaching resources, apart from the manual), teaching methods (with rigid and non-innovative pedagogical approaches and untimely changes in method), and human resources (deficit and gaps in teacher training)" (Mgharfaoui, 2016). No one can deny the considerable decline in French among Moroccan learners. A reality that calls for several questions "We believe that in Morocco, the integration of information and communication technologies in education (ICTE) will play a prominent role in the development of education in general and that of French in particular, provided that the decision-makers of the political-educational system will give ICTE the place it deserves" (Louiz, 2014).

The quote by Louiz (2014) suggests that the success of ICTE implementation in Morocco hinges on granting it the rightful place and attention within the education system. This acknowledgment implies that policymakers need to allocate resources, provide training opportunities, and establish a supportive environment for the effective integration of ICTE in classrooms. By doing so, there is a potential for ICTE to positively impact the teaching and learning of French, addressing the existing challenges and fostering language proficiency among Moroccan learners.

In essence, recognizing the significance of ICTE and ensuring its adequate implementation can pave the way for advancements in education, specifically in the domain

of French language education, thereby contributing to the improvement of learners' proficiency and overall educational outcomes.

The Flipped Classroom

The flipped classroom, serious games, interactive whiteboards, digital workspaces, Massive Open Online Courses (MOOC), interactive videos, and podcasts are all technological renovations that have contributed to improving the quality of teaching.

We can count a considerable number of methods and situations for the use of ICT in teaching. "Certainly, at a time when ICT is evolving extremely fast, an exhaustive census of its uses by teachers for pedagogical purposes would be difficult" (Mastafi, 2013). However, in this study, our focus will be on flipped pedagogy, which is a teaching model gaining popularity and enabling the integration of ICT in the classroom.

The concept of the flipped classroom emerged in the United States in 2007, thanks to the experiments conducted by Jonathan Bergmann and Aaron Sams. These two chemistry professors introduced a transformative teaching approach by uploading their lessons online in the form of video capsules. This innovative method enabled students who were unable to attend the physical classes to access and review the recorded lessons, ensuring they remained updated with the course content.

In recent years, this pedagogy has spread remarkably throughout the world. It is seen as an evolution of pedagogical approaches to allow teachers to align their practices with the digital era. Today's students have grown up surrounded by a wealth of online resources and technological devices, and the flipped pedagogy aims to leverage these resources effectively.

Unlike traditional teaching methods, the flipped classroom is a hybrid approach that involves two distinct teaching times. The first phase takes place remotely, where students engage with instructional materials and resources independently. The second phase occurs in the physical classroom, where students and teachers come together for face-to-face interaction and collaborative activities. Moreover, the flipped classroom is commonly supported by an educational platform that integrates a range of digital teaching and assessment resources. This platform serves as a centralized hub where teachers can provide learning materials, interactive content, and assignments, while also monitoring students' progress and facilitating communication. Overall, the flipped classroom combines online and in-person learning, leveraging digital tools and platforms to enhance the learning experience and promote active student engagement.

The flipped classroom is a hybrid approach whose slogan is "reading at home and homework in class". There are several ways to implement this approach. According to Lecoq and Lebrun, "any teacher can experiment with it, on a small or large scale" (Lecocq & Lebrun, 2019), according to the time of the activity, the materials available, the level of the students, and the degree of creativity of the teacher.

As ambitious as it may seem, this set of new practices based on ICT has significantly impacted the field of education. In this respect, we can underline the evolution of research that this pedagogy has undergone in recent years. The two pillars of this approach, Jonathan Bergmann and Aaron Sams talk about flipped learning, which represents an advanced model of the flipped classroom. According to these two researchers, "In the traditional flipped classroom model (it sounds strange to call it a 'traditional' model), all students watch the same video on the same night. Then all students complete the same activity or lab in class" (Bergmann et al., 2014). However, it is important to acknowledge that student levels and abilities are often heterogeneous within a classroom. This means that some students excel in their learning, while others may struggle or require more time to grasp the concepts. The flipped learning model allows students to go through "the material at their own pace. As a result, not all students watch the same video on the same night. Students watch and learn in an asynchronous and differentiated system, which aims to have them assimilate and master the material at their own pace" (Bergmann et al., 2014).

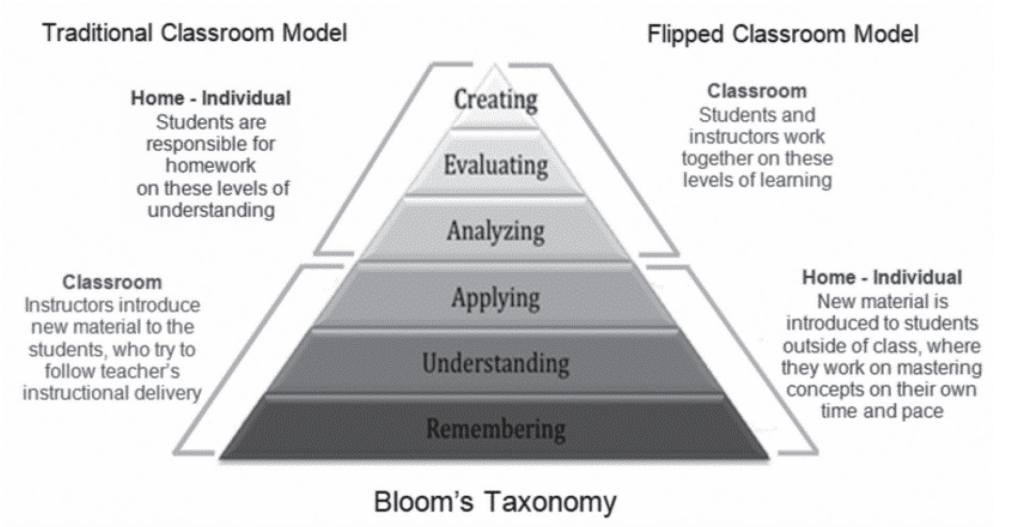
In this sense, it is worth noting the research of Marcel Lebrun and Jule Lecoq, where they propose a three-level classification of the flipped classroom. The first level constitutes the initial stage of the flipped classroom, where the teacher puts the course materials online for students to access outside of class time. During class, the focus is primarily on discussions and exercises, allowing for interactive and collaborative learning experiences. The second level is more complex, since, at time 1, at a distance, the student is called upon to carry out research and readings to constitute part of the course himself. At time 2, in the classroom, in addition to structured debates and exercises, the student contributes to the co-construction of the course through oral presentations or the use of ICT tools. The third and last level represents a combination of the previous two levels, "In the form of a cycle, it would go beyond the deterministic linearity of "before class/during class" to become a spiral made of successive contextualization (the meaning of knowledge, practices, contexts), decontextualization (invariants, principles, models, theories), and recontextualization (applications, situations, transfer), alternating face-to-face and distance activities, or individual and group work" (Lebrun & Lecoq, 2016).

The hybrid nature of the flipped classroom, "between theory and practice, between presence and distance, between knowledge and skills" (Lebrun & Lecoq, 2016), this approach can be a good device for arranging several teaching methods belonging to the different pedagogical currents (behaviourism, cognitivism, constructivism, socio-constructivism, connectivism). It is "a fertile mix of direct transmission (I teach) with a constructivist or socioconstructivist approach to learning (it is up to the learners to learn)" (Lebrun & Lecoq, 2016), which aims to develop in the student the ability to learn, that is, the acquisition of the knowledge, know-how, and interpersonal skills necessary to specify what, when, and how to learn. Thus, thanks to this coupling between presence and distance, all the theoretical parts are transmitted remotely, via the Digital Workspace

of the institution or an educational platform adopted by the teacher, before a session in presence, mainly in the form of a video capsule or a commented lecture, information research, readings. Classroom time is reserved for activities that require teacher guidance and peer interaction. In terms of Bloom's taxonomy, the hybrid nature of the flipped classroom allows for the exploration of different levels of the cognitive domain. As shown in figure 3, time outside the classroom, at a distance, is reserved for the low-level skills of "recognizing and understanding", representing the first two levels of the pyramid. In contrast, the higher-level skills of "applying, analyzing, evaluating, and creating", which make up the four levels at the top of the pyramid, can be done in the class sessions.

Figure 3

Bloom's Taxonomy Adapted to the Flipped Classroom by B. Williams (Dufour, 2014)



The advent of this approach has imposed on each of the actors in the teaching/learning action the adaptation with a new mode and embody new roles. which implies a modification in the teacher/learner roles and their relationship to knowledge. One of the key benefits of the flipped classroom is the promotion of more intense interactions between the teacher and the students, as well as among students themselves the teacher is no longer seen as the "expert on the stage" but a "guide on the side" (Lecoq & Lebrun, 2019). For his part, the learner becomes an active actor responsible for his learning. The following table highlights the advantages of the flipped classroom, which enable teachers to enhance the quality of their instructional practices and students to better structure their learning.

Table 1
The Flipped Classroom Allows

The flipped classroom allows	
To the teachers	**To the students**
Utilize in-class and out-of-class time effectively.	Increase opportunities for face-to-face interaction with the teacher.
Employ a variety of resources to personalize and enhance lessons.	Encourage active interaction and participation among students.
Maximize face-to-face interaction with students.	Foster increased communication and contact with the teacher.
Foster increased interaction and engagement with students.	Promote student ownership and responsibility for their own learning.
Provide guidance and support to students in their learning.	Provide opportunities for students to catch up on missed lessons or gaps in understanding.
Implement differentiated teaching strategies within class groups.	Ensure access to class materials for revision or remedial purposes.
	Facilitate learning at individualized paces.

Study

Methodology

The work that we have carried out with 106 French teachers in the FES-MEKNES region has the main objective of verifying their level of competence and usage of ICT for the potential implementation of a hybrid teaching pedagogy known as "the flipped classroom" in Moroccan schools. In this research, we will adopt the positivist paradigm using a hypothetical-deductive reasoning. A research methodology where new knowledge is derived through experimentation, testing, and empirical methods. These methods enable the researcher to grasp empirical data, allowing them to deduce new knowledge based on existing theoretical knowledge. This model proves to be the most suitable for comprehending and interpreting the relationship between the various variables and consequently refuting or validating the initial hypotheses.

For this purpose, data were collected through a self-report developed with Google Forms which was administered either online or during a face-to-face meeting with our sample group consisting of junior and senior high school French teachers from the FES-MEKNES academy. This self-report serves as the foundation for the quantitative analysis in our research and is divided into three parts, each containing different items:

- The first part: focuses on presenting the sample group, including teaching cycle, work environment, age, gender, and years of experience.

- The second part examines the use of ICT in education, covering the level of mastery of ICT tools, the degree of integration of ICT in pedagogical practices, and the teachers' motivations for integrating ICT.
- The third part delves into the flipped classroom pedagogy, assessing the teachers' knowledge of this approach, its implementation in French teaching sessions, the level with which we can experiment with the flipped classroom, and the participation in training related to the flipped classroom.

The analysis of the collected data will serve two purposes. Firstly, it will enable us to highlight the degree of proficiency and various applications of ICT by French language teachers. Secondly, it will help us to identify the rate of knowledge in the flipped classroom and the teachers' ambition to employ this approach in their teaching practices.

Results

Presentation of the Sample

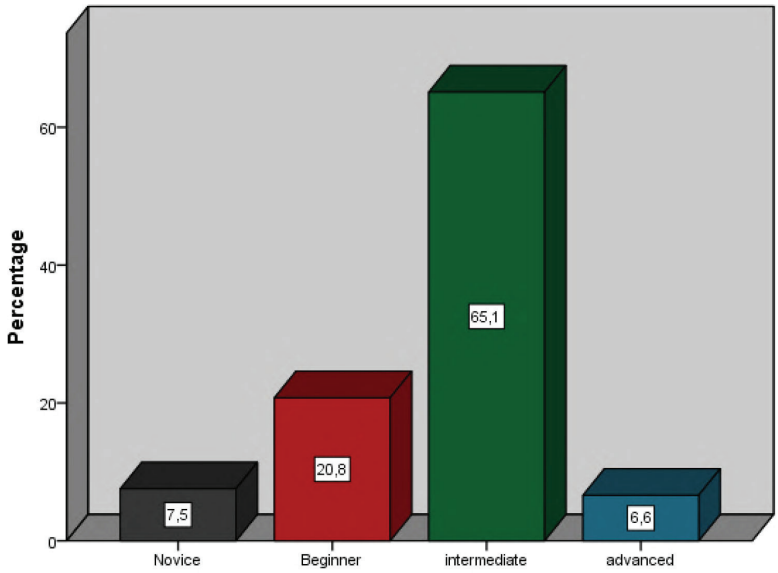
Our sample consisted of 106 French language teachers, involving 51 male teachers and 55 female teachers). They were selected from the FES-MEKNES region and represented two secondary cycles: 49.1% from the senior high school and 50.9% from the junior high school. Teachers came from diverse working environments with 62.3% working in urban areas, 25.5% in rural areas, and 12.3% in peri-urban areas. The age range of the participants varied from 20 to 60 years, and their work experience spanned from 1 to more than 21 years.

Table 2
Presentation of the Quantitative Exploratory Study Sample

			Number	Percentage
FES-MEKNES Academy	Teaching level	Senior high school	54	50.9
		Junior high school	52	49.1
	Teaching environment	Urban	66	62.3
		Rural	27	25.5
		Peri-urban	13	12.3
	Age group	20 to 30 years	31	29.2
		31 to 40 years	34	32.1
		41 to 50 years	32	30.2
		Over 50 years	9	8.5
	Professional experience	1 to 5 years	39	36.8
		6 to 10 years	20	18.9
		11 to 15 years	14	13.2
		16 to 20 years	12	11.3
		Over 21 years	21	19.8

The use of ICTE

Figure 4
Level of Mastery of ICT Tools

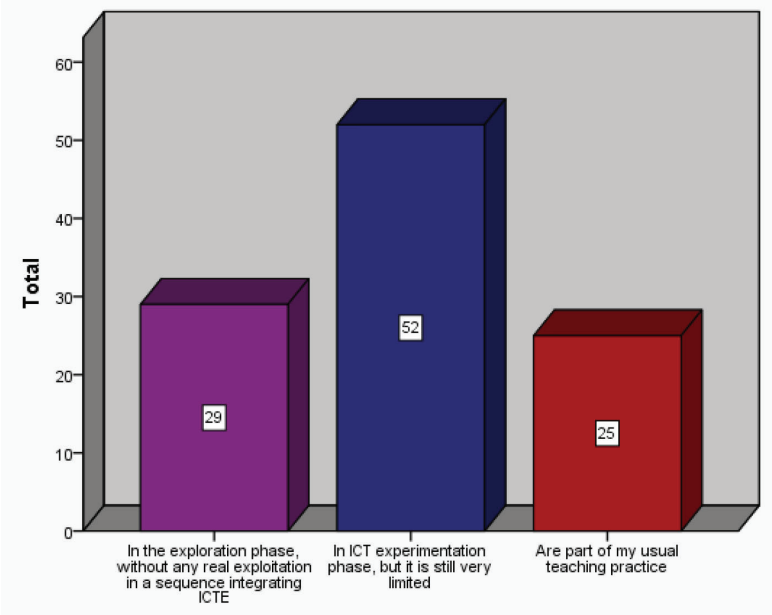


The analysis reveals that the majority of teachers (65.1%) have an intermediate level of mastery of essential technological tools, indicating their comfort and competence in their usage. Additionally, a notable percentage (6.6%) demonstrates an advanced level of proficiency. However, around one-fifth of teachers (20.8%) are beginners, requiring additional support and training to improve their mastery. A small portion (7.5%) of the sample consists of novices who have little to no experience with technology. The findings highlight the need for continuous teacher training and development in technological skills, with a focus on strengthening intermediate competencies. Specific support should be provided to beginners and novices to enhance their digital skills.

Out of the total teachers surveyed, 24% are already using ICTE during class sessions, while 49% are experimenting with ICTE tools to a limited extent. Another 27% are in the exploration phase and have yet to fully utilize ICT in their classrooms. These findings align with the teachers' self-reported good ICT skills, indicating readiness for flipped classroom integration. It is encouraging that some teachers have already integrated ICTE into their teaching practices, demonstrating openness to technology and willingness to explore new approaches.

Figure 5

The Degree of Integration of ICTE in Teaching Practices

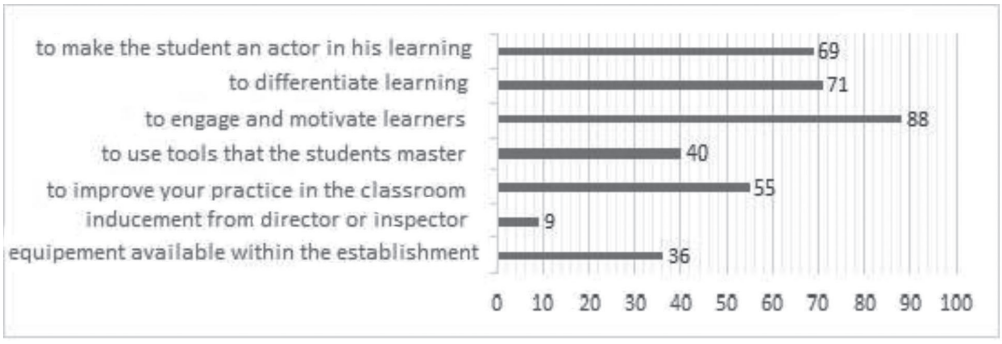


However, a significant portion of teachers still need support and encouragement to fully leverage ICTE. Additional resources and training can help promote a wider and more effective use of technology in classrooms. Overall, the results show that teachers have the necessary skills for flipped classroom adoption, but further efforts are needed to ensure widespread implementation.

From Figure 6, it is evident that teachers use ICTE in the classroom for three main reasons: to engage and motivate learners (88%), to differentiate learning (71%), and to empower students as active participants in their learning (69%).

Figure 6

Teachers' Motivations for Integrating ICTE



This correlation between ICT use and a focus on learning processes is significant. Integrating educational technology helps teachers center their teaching around the students, aligning with the purpose of pedagogical innovation, which aims to enhance student learning.

Furthermore, over half of the teachers recognize the link between ICT integration and the improvement of their teaching practice. They understand that the new generation of students is technologically adept, and they strive to leverage this to their advantage. Only 9% mentioned that their engagement is stimulated by their supervisors, and 36% are motivated by the availability of equipment.

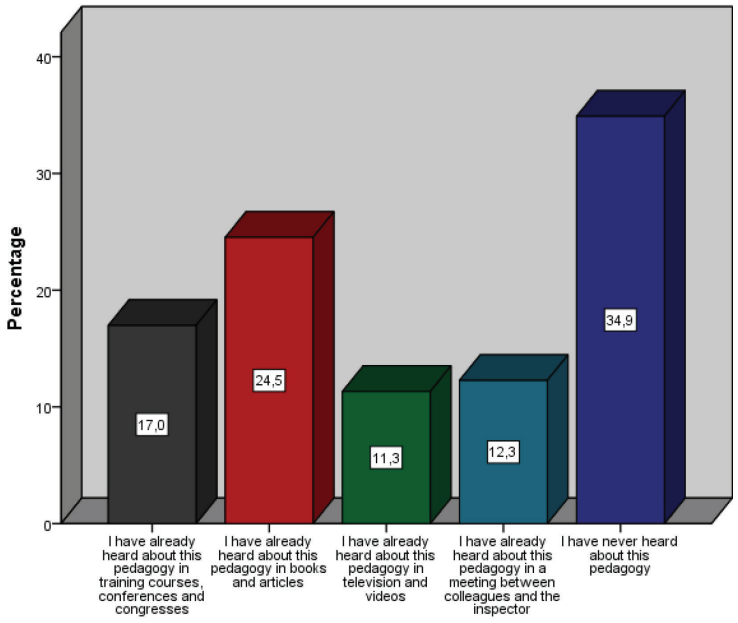
These findings indicate that teachers are independent and innovative, with the majority not being limited by the lack of equipment. However, this may also highlight a lack of knowledge or prioritization of ICT by supervisors, as they may not actively encourage its use. It also raises concerns about the availability and adequacy of equipment in Moroccan schools.

Overall, these results emphasize the importance of integrating ICTE in classrooms to engage and empower students. They also underscore the need for further support and investment in educational technology, both in terms of training teachers and ensuring access to appropriate equipment.

The Flipped Classroom

Figure 7

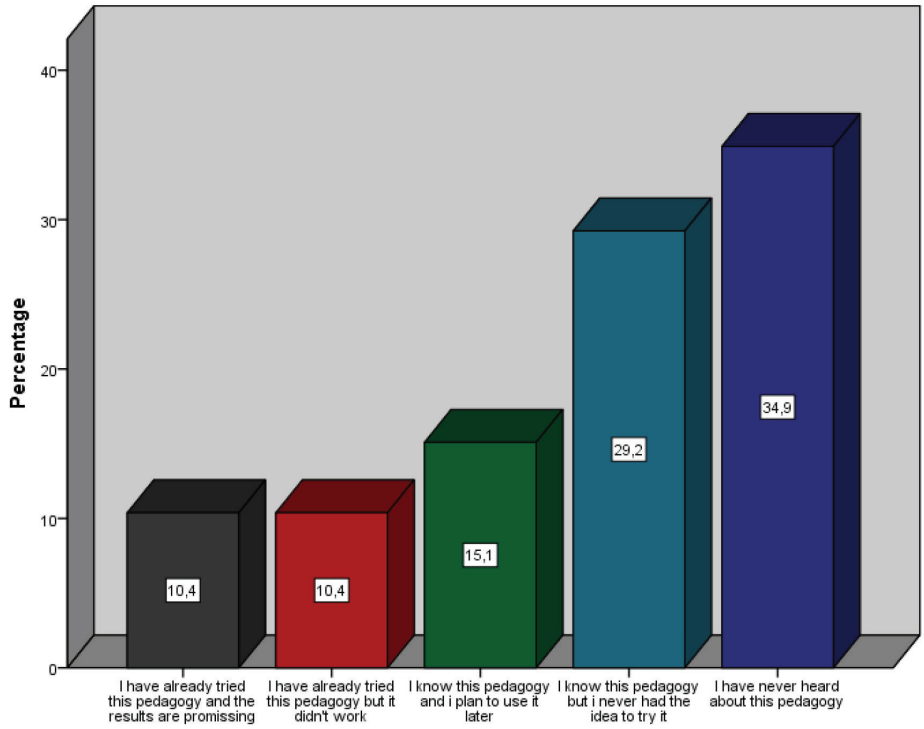
Knowledge of the Flipped Classroom Pedagogy by the Teachers Interviewed



The majority of teachers (65.1%) are familiar with the flipped classroom approach, having learned about it through various sources such as books, articles, and training sessions. However, 34.9% of teachers have never heard of this pedagogy. This highlights a need for further dissemination of information about the flipped classroom among teachers. It is important to provide comprehensive professional development opportunities to ensure all teachers have access to information on innovative pedagogical approaches. Increasing awareness and understanding of the flipped classroom can lead to its effective implementation in teaching practices.

Figure 8

Use of the Flipped Classroom in French Teaching Sessions



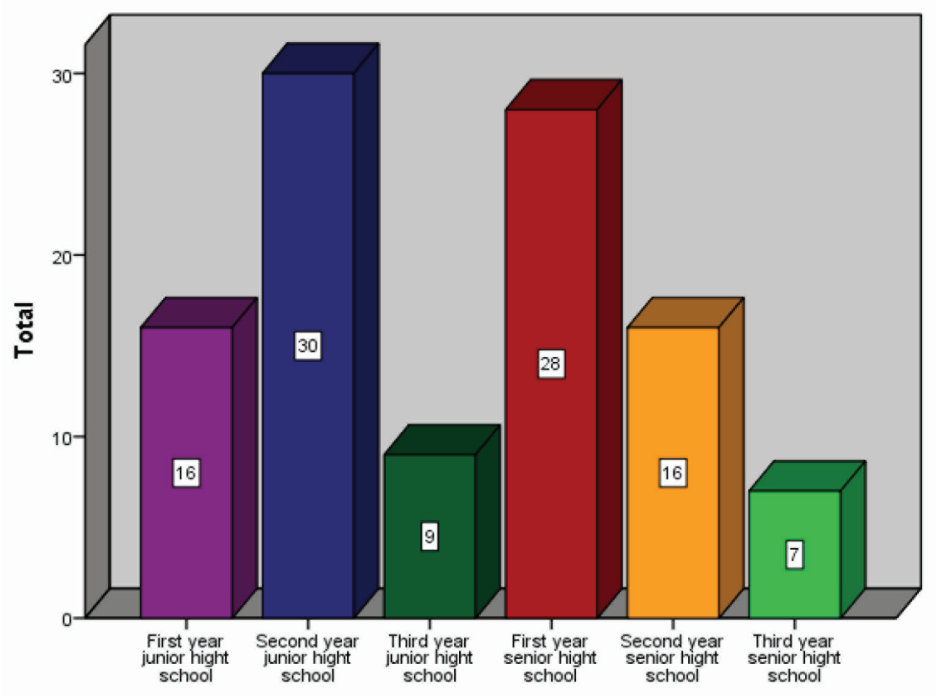
In Figure 8, it is observed that 29.2% of teachers familiar with the flipped classroom approach have not considered trying it. However, 15.1% have future plans to implement it. Among those who have tried it, 10.4% faced challenges, while another 10.4% reported positive outcomes.

These findings highlight the varied responses and experiences of teachers regarding the flipped classroom. Factors such as reluctance, lack of awareness, organizational difficulties, and subject suitability may influence their decisions. However, a significant

portion of teachers confirm promising results from implementing the flipped classroom, showcasing increased engagement, understanding, and learner autonomy.

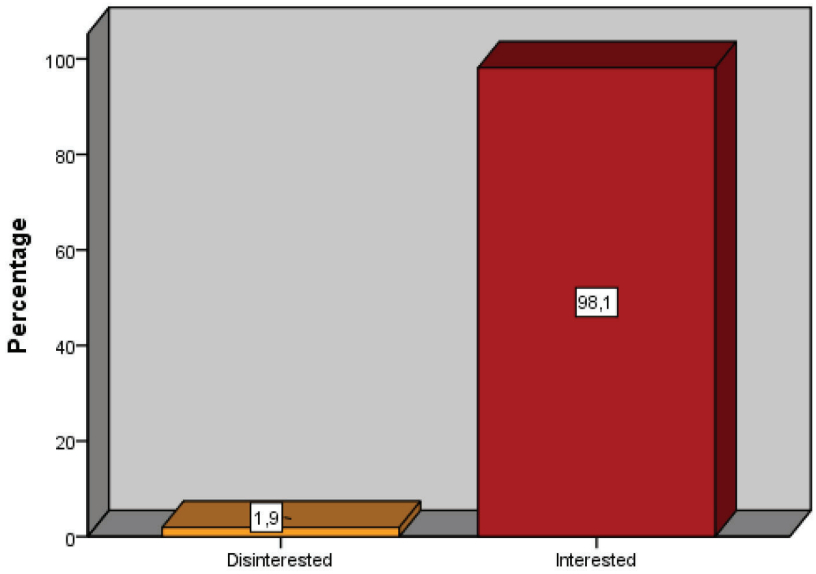
Figure 9

The Level With Which We Can Experiment With the Flipped Classroom



Given that our sample includes both high school and junior high school French teachers in almost equal proportions, we have the opportunity to explore six different levels for implementing the flipped classroom. According to Figure 9, the teachers' perspective suggests that the most suitable level for this experiment is the second year of junior high school, accounting for 28.4% (30 out of 106) of the participants. This this insight indicates that teachers see the second year of junior high school as the ideal stage to introduce the flipped classroom pedagogy and leverage its potential benefits. Further analysis and investigation can be conducted to understand the reasons behind this preference and to explore the specific implications and outcomes of implementing the flipped classroom at this particular level. one thing's for sure, this level doesn't have an end-of-year exam.

Figure 10
Participation in Flipped Classroom Training



The analysis of Figure 11 reveals a strong interest among teachers to participate in training in the flipped classroom, with a rate of 98%. This finding demonstrates their willingness to develop the necessary skills to implement this innovative pedagogical approach. Teachers recognize the growing importance of information and communication technologies in education and are aware of the potential benefits of the flipped classroom for students. Participating in training would allow them to acquire skills, familiarize themselves with flipped classroom practices and tools, and share their experiences with other teachers.

Analysis of the Results

After the 1990s, "globalization and the development of a knowledge society were the contexts that forced Morocco to effectively participate in appropriation and adaptation with new technologies" (Chekour et al., 2014). This commitment is evident in the initiatives undertaken by the Ministry of National Education, including teacher training programs and the provision of school equipment.

The research results have provided insights into the following key research questions:

- The level of proficiency and utilization of ICTE among teachers.
- Awareness and understanding of the flipped classroom.
- Teachers' inclination and motivation to implement this pedagogical approach.

The survey results indicating that a majority of French language teachers have a solid command of technological tools in their schools have significant implications. This positive outcome can be attributed to the concerted efforts made by the government through various projects and state reforms aimed at generalizing and democratizing the use of ICT in educational institutions. These initiatives have not only increased teachers' exposure to technology but have also encouraged them to proactively engage in self-training to enhance their digital skills.

With 71.7% of teachers demonstrating an above-average mastery of ICT, it is evident that a significant portion of the teaching workforce in Morocco has the necessary competence to effectively leverage technological tools. This proficiency empowers teachers to explore innovative approaches in lesson preparation and presentation, which are rooted in new technologies. The availability of specialized tools allows them to capture learners' attention (as indicated by 88% of respondents), differentiate instruction to meet diverse learning needs (as reported by 71% of respondents), and shift the role of students from passive recipients to active participants in constructing their knowledge (as noted by 69% of respondents).

These characteristics align remarkably well with the principles of a flipped classroom pedagogy. The flipped classroom model encourages the use of technology to deliver instructional content outside the traditional classroom setting, often through online resources such as video lectures or interactive learning materials. The survey findings suggest that the majority of French language teachers in Morocco already have the necessary technological skills and resources to implement such an approach successfully.

By embracing the flipped classroom pedagogy, teachers can leverage their proficiency in ICT to provide students with engaging and interactive learning experiences. The ability to capture learners' attention through digital tools can enhance their motivation and participation in the educational process. Additionally, differentiated instruction facilitated by technology allows teachers to cater to individual student needs, promoting a more personalized learning experience. Moreover, empowering students to take an active role in constructing their knowledge aligns with the learner-centered approach of the flipped classroom, fostering critical thinking, collaboration, and problem-solving skills.

Overall, the survey results not only highlight the positive impact of ICT integration in Moroccan schools but also indicate that teachers are well-positioned to embrace the flipped classroom as a pedagogical approach. The combination of teachers' proficiency in ICT, their awareness of innovative teaching methods, and the availability of specialized tools sets the stage for the successful implementation of the flipped classroom model, leading to enhanced learning outcomes and student engagement in French language education.

Despite the numerous advantages of the flipped classroom approach for both teachers and learners, there are several constraints to its implementation in Morocco. On the teachers' side, it is notable that 34.9% of the sampled teachers have never heard of the flipped classroom, and 44.3% are aware of the approach but have not yet used it or plan

to use it in the future. Among the entire sample, only 20.8% have actually implemented the flipped classroom with their students. Half of those who have used it report that it is a promising approach that yields positive results, while the other half have faced challenges in experimenting with this pedagogy.

These findings emphasize the need for initiation and familiarization sessions in the flipped classroom specifically tailored for teachers if we aim to integrate this pedagogical approach into French language instruction in Morocco. Moreover, the results from the survey indicate that 98% of teachers express their interest in participating in training sessions focused on the flipped classroom.

Therefore, providing professional development opportunities and training programs that introduce and familiarize teachers with the flipped classroom methodology would be crucial in promoting its wider adoption. By addressing the lack of awareness and offering support to teachers, the barriers to implementing the flipped classroom can be overcome, allowing for its effective integration into the Moroccan educational system.

Based on this research, we have been able to indeed address the initial questions and confirm our hypotheses. The first hypothesis, which states that ICT tools are integrated into the teaching practices of Moroccan French teachers, is supported by the findings. The majority of teachers demonstrate a strong command of ICT and utilize these tools in various ways with their students.

The second hypothesis, which suggests that teachers are inclined to adopt the flipped classroom pedagogy, is also validated. Despite the initial lack of awareness or knowledge about this pedagogical approach, the research results indicate that teachers are motivated and interested in receiving training in the flipped classroom. This indicates their willingness to explore and benefit from this teaching methodology.

These findings highlight the potential for the integration of the flipped classroom approach in Moroccan French language education. With teachers already proficient in ICT and expressing a positive attitude towards adopting innovative pedagogies, there is a promising foundation for introducing and implementing the flipped classroom model. Providing training and support to enhance teachers' understanding and implementation of this approach could further promote its adoption and effectiveness in Moroccan classrooms.

Conclusion

The main objective of this work has been to demonstrate the strengths of the flipped classroom, which can serve as a motivating factor for teachers to adopt the flipped classroom pedagogy. It is assumed that in Morocco, there is still a slow progress in utilizing ICT for teaching, whereas today, we should be embracing these new tools that can provide a better learning environment. In fact, Cynthia, in her article published by UNESCO, states, "The shift to information societies worldwide has profound implications for

education systems. They are being asked to expand, become more flexible and improve their relevance and quality at all educational levels. ICT has the potential to address these challenges. Some observers argue that ICTs will allow developing countries to bridge the gap with more affluent nations" (Guttman, 2003).

Innovation in teaching and learning is undoubtedly one of the most important determinants of school performance. In this perspective, the flipped classroom can serve as a convincing device, enabling teachers to combine both direct transmission approaches (behaviourism, cognitivism) where they act as information providers (I teach) and active approaches (constructivism, socio-constructivism, connectivism) where students are at the center of their learning (learners take responsibility for their own learning). This ability to combine several pedagogies and leverage ICT is an advantage for fostering innovative teaching practices. However, implementing the flipped classroom in the classroom and its appropriation by educational practitioners still seem to be a significant challenge in our country.

In conclusion, this article has outlined the commitment of the Moroccan Ministry of Education to leverage new technologies. We have also discussed the challenges faced in French language teaching in Morocco and their negative influence on student performance. Additionally, we have explored the transformations in the roles of the teachers and learners, as well as the different types of flipped classrooms, emphasizing the benefits of this pedagogy for the teaching and learning activities.

Furthermore, through a quantitative analysis of collected data, we have presented the perspectives of French teachers on Information and Communication Technology in Education and the flipped classroom. This analysis has provided valuable insights into teachers' technological competencies and the diverse applications of ICTE in educational contexts. It also examines their level of awareness and interest in the innovative flipped classroom approach.

These findings can serve as a foundation for future research, particularly in evaluating the impact of training on teachers' motivation to adopt the flipped classroom. It would be worthwhile to conduct experiments with the flipped classroom in selected classes and assess the viewpoints of learners, who play a vital role in this pedagogy as active participants in teaching and learning activities. This holistic approach will contribute to further enriching our understanding of the flipped classroom and its potential benefits.

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Švietimo technologijų naudojimas ir galimybė integruoti „atvirkštinę klasę“ į prancūzų kalbos mokymą Maroko mokyklose

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Santrauka

Šiuo tyrimu buvo siekiama ištirti ryšį tarp informacijos ir komunikacijos technologijų (angl. ICTE) naudojimo Maroko švietimo sistemos procese ir galimybės integruoti „atvirkštinę klasę“, kaip mokymo metodą, mokant prancūzų kalbos mokyklose. Tyrime buvo taikytas kiekybinis metodas, klausimynus užpildė 106 vidurinės ir aukštosios mokyklos iš Fes-Meknes regiono prancūzų kalbos mokytojai. Rezultatų analizė atskleidė, kad prancūzų kalbos mokytojai Maroke puikiai valdo naujas technologijas ne tik klasėje, bet ir asmeniniais ir profesiniais tikslais. Vis dėlto dauguma šių mokytojų arba niekada neįgyvendino „atvirkštinės klasės“ metodo, arba nežino apie jo, kaip pedagoginio metodo, egzistavimą, nors visi rodo norą mokytis šioje srityje. Ši išvada yra labai svarbi tolesnio tyrimo eigai, nes ji suponuoja pagrindinius būsimus tyrimo etapus, apimančius „atvirkštinės klasės“ metodo įgyvendinimą mokykloje ir šio pedagoginio metodo pritaikymą specifiniam Maroko kontekstui.

Esminiai žodžiai: *prancūzų kalbos mokymasis, švietimas, mokymo strategijos, švietimo naujovės, IKT, Maroko švietimo sistema, „atvirkštinė klasė“.*

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