

# MOBILE LEARNING SCENARIOS IN LANGUAGE TEACHING: PERCEPTIONS OF VOCATIONAL AND PROFESSIONAL EDUCATION STUDENTS

*Ana Nobre,<sup>1</sup> PhD*

Open University, Laboratório de Ensino a Distância e eLearning (LE@D), Lisboa, Portugal

*Adelina Moura, PhD*

University of Coimbra, LabTE, Portugal

## ABSTRACT

Mobile devices play a significant role in society, in general, and a very limited one at the different levels of education. Smartphones, tablets, and other mobile devices allow learning to occur anywhere, (and at) anytime. These powerful technological devices can enhance the teaching and learning processes by helping to promote collaborative and individual learning and broadening the boundaries of the classroom to different contexts of learning. Many students have mobile devices and their applications can provide access to learning outside the classroom, for greater flexibility and more dynamic learning. In this sense, the articulation of technological and methodological efforts allowed us to create learning scenarios supported by the devices that students take to the classroom (BYOD), and use them to motivate and involve students in meaningful learning. These devices offer the advantage of integrating various technologies in the curricular contents, such as in foreign and mother language courses, representing a set of possibilities of ubiquity that can have great impact on the learning process. Thus, we developed strategies with vocational and educational students' methodologies, such as augmented reality, project-based learning, game-based learning, collaborative learning and gamification. In this text, we present the results of two mobile learning studies in teaching French as a foreign language (to 18-23 year-old-students) and Portuguese language, as a mother tongue (to 15-19 year-old-students), in vocational education, implemented as a mediation tool in education to promote the construction of learning and development of significant skills of collaborative work. From the data collection, through a questionnaire, with open and closed questions, we highlight the favorable perception of the students to the integration of mobile devices in learning, and the recognition of the benefits of the teaching strategies used throughout the year, in the increase of curricular learning.

**Keywords:** mobile learning, gamification, foreign languages, microlearning

## 1. INTRODUCTION

The development of mobile technologies in recent years has made possible changes in the way we work, buy, live and learn. This evolution has also been reflected in education, with some examples of the integration of mobile devices of learners or of schools / training institutions into educational practices. More and more students are using their mobile devices to support their studies, but most of the time they are banned from using them in the classroom. For this reason, schools should rethink their prohibitionist policies and adapt to the use of these technologies, accepting the new social, cultural and formative paradigm.

In the digital world everything changes rapidly and a constant update on the global state of the Internet is needed. According to recent data<sup>2</sup>, more people are using the Internet than those who do not use it and the trend is for this number to rise. Regarding the use of mobile devices it already

---

<sup>1</sup> Corresponding author: Ana.Nobre@uab.pt; adelina8@gmail.com

<sup>2</sup> [https://thenextweb.com/marketing-seo/2017/04/11/current-global-state-internet/#.tnw\\_CxzZ3TkA](https://thenextweb.com/marketing-seo/2017/04/11/current-global-state-internet/#.tnw_CxzZ3TkA)

reaches more than 66% of the world population, and the rapid spread of smartphones has led to a significant growth of mobile Internet users globally. The same source, reveals that in Portugal 70% of the population uses the Internet, 59% use social networks, with mobile subscriptions exceeding (148%) of the country's total population and more than half of the population is active in some mobile device.

This evolution has had repercussions in the educational world, with an increase in pedagogical experiments using mobile devices (Han & Shin, 2016, Kukulska-Hulme et al., 2015, Moura, 2015a, Rikala, 2015, Sung et al., 2016). These experiments are helping the school to adapt to the needs of students, as they increasingly use mobile devices to support their studies, either by accessing learning content or as a working tool.

Mobile learning is a trend that is becoming more and more integrated into educational and training practices, a little bit everywhere, taking advantage of technological advances and social changes. Although there is no definitive definition of m-learning, several definitions have been proposed over the last decade showing the interest of the academic community in the subject. From the first definition suggested by Clark Quinn (2000)<sup>3</sup>, very focused on technology, to the definition presented by Crompton (2013:4), in which she defines m-learning as "learning across multiple contexts, through social and content interactions, using personal Electronic devices", it is noted that the definitions have evolved over time, following the evolution of the technology itself and of its potential in the educational field. People are recognizing the benefits of mobile learning, in the educational field, enabling it to become, more like a standard approach and not an exception. For UNESCO (2013:5) "mobile technologies can expand and enrich educational opportunities for learners in diverse settings".

Since the first Mobile Learning Week in Paris, organized by UNESCO (2011)<sup>4</sup>, in partnership with Nokia, which discussed how mobile technologies can be used to help achieve all educational goals. This year<sup>5</sup>, the theme was "Education in emergencies and crises" and the participants discussed how existing technologies can strengthen inclusion in education, preserve continuity of learning in conflict and disaster contexts, catalyze innovation in the education sector and improve the impact of humanitarian interventions. Other events on mobile learning took place this year, showing the importance of this concept in education, such as The 4th International Mobile Learning Festival<sup>6</sup>, where participants explored concepts, practices and issues that provide avenues for effective integration of mobile technologies and emerging learning technologies into education at all levels and in all environments.

The growing interest of academic research in integrating mobile technologies into education, in different educational contexts (Han & Shin, 2016, Kukulska-Hulme et al., 2015, Moura, 2015a, Sung et al., 2016), also reveals positive and interesting results, from the pedagogical point of view, and shows how much this area of knowledge still needs to be studied. As regards language learning different studies integrating mobile technologies have been developed in the past few years. Kukulska-Hulme et al. (2015) present a guide based on the research they have carried out, with experiments of teaching and learning the English language in different contexts, presenting the pedagogical framework for mobile assisted language teaching and learning<sup>7</sup>.

M-learning experiments have been developed in formal and informal contexts and in collaborative learning environments (Crompton 2013). The practices that we share in this text were developed in formal contexts of learning in mother tongue (Portuguese) and foreign language (French) classes with students of vocational education.

## **2. MOBILE LEARNING: THE IMPORTANCE OF TECHNOLOGY IN SCHOOLS**

---

<sup>3</sup> <http://www.linezine.com/2.1/features/cqmmwiyp.htm>

<sup>4</sup> <http://www.unesco.org/fileadmin/MULTIMEDIA/HQ/ED/ICT/pdf/UNESCO%20MLW%20report%20final%2019jan.pdf>

<sup>5</sup> <http://en.unesco.org/events/mobile-learning-week-2017>

<sup>6</sup> <http://imlf.mobi/>

<sup>7</sup> Mobile Assisted Language Learning (MALL).

What is the real importance of technology in schools? What is its role and how can it effectively add value to the teaching and learning process? These are essential questions to better understand the transformative power of technology in education. We live in the age of knowledge and the skills and abilities needed today and in the future require collaboration, communication, creativity and critical sense. In the digital age in which we live, it is crucial to know what to do with content (which will always be important), how to produce, disseminate and share it, because the world is witnessing a massive production of information, such as never before in human history. How can digital mobile technology help us to stay connected at all times, to benefit from all the information? If we have mobile devices at hand, then it is necessary to strengthen and use these tools as best as possible to achieve the desired educational objectives, which are always the teachers priority and the school must always adapt to the new times.

A good pedagogical use of technology allows harmonizing pedagogy and technology in a good way, through practices and experiments typical of the times in which we live that require more flexible ways of thinking. But there are several factors that influence the inclusion of mobile learning experiments in formal education. Some of them are related to the integration of ICT in education, because mobile learning is part of educational technology (Rikala, 2015). Educational technology has evolved and spread rapidly but there is still no successful recipe. The truth is that there is not one recipe that fits all contexts. Therefore, it is best for each institution to look locally and discover the needs of its school community and adapt the technology integration plan to its own context.

The first step in creating a thriving technology ecosystem is students to have access to technology. This is already happening, when we adopt BYOD (Bring your own device) programs in our schools, because students come to school each time with more technologies, we just have to take advantage of them. But after having the technology, the teacher must create his or her own educational scenario, where students can explore, create and grow personally and intellectually, because we know that learning is much more than technology. It is about enabling students to develop the skills needed to meet the challenges they will encounter in future work.

Mobile learning is about creating the conditions for the students to create deep reflections and share them with others, for example using the class blog. Students can use the tablets or smartphones to search the places mentioned in the handbook or in a novel they are studying in class and share them in podcasts or in digital notes. Students from different classes can collaboratively develop a project that can help them solve a real problem. Students can create work groups and use online presentations to expound their ideas and search results. They can create short videos about the books they are reading, and QR codes with the links, and share them at school. They can share their work with classmates through Google Docs and get feedback from them. They can use Twitter to publish relevant information about a curricular topic and to comment on the publications of classmates, promoting social learning (Moura & Carvalho, 2013). Finally, mobile learning is about using Edmodo to work in groups and solve homework and generate discussion about a topic of the class. Technology must be at the service of learning, not vice versa. Therefore, it is necessary to start using it to learn how to enhance it and to benefit students' learning.

In a global and connected world, finding fixed and stable identities begins to be rare. The means and forms of online communication are constantly changing, requiring participants to develop new skills. Our young people also participate in this technological revolution, but often without the critical knowledge of research, the evaluation and information utilization skills. It is imperative that the school helps students develop digital literacy skills (Dudeney et al., 2013) to meet the challenges of today and the future. Digital competencies must be understood from multiple perspectives (Guikema & Williams, 2014) and can be developed in all disciplines and at all ages, because they are central to students' personal, social, educational and professional lives.

### **3. STRATEGIES FOR INTEGRATING MOBILE DEVICES IN LEARNING**

To transform education with technology they are two ways, the pedagogical model and using tools to mediate the teaching and learning process. But how can we motivate students to learn? The students' lack of motivation towards curricular content is an obstacle to school success. The students of vocational education, coming from different contexts (social, family and school failure) become a very specific school population, requiring a constant readjustment of teaching strategies and curriculum plans from teachers. Therefore, there are many strategies that we use several times to make students become interested in the class subjects. For example, digital games, competition and rewards are strategies that have proved to be very positive at this level of education (Moura, 2015b).

Taking advantage of the mobile devices that students bring to the classroom, we have been able to implement a 1: 1 model in our educational practices. Each student has their own mobile device (smartphone) and uses it individually. When the student does not have a device of his own, he can request one of the tablets from the school. Mobile devices are available and used whenever necessary. This situation helps to improve the management and organization of the class.

#### **3.1 Participatory culture: learning collectively**

"Any reflection on the future of education and training systems in cyberculture must be based on a prior analysis of the contemporary mutation of the relationship with knowledge" (Lévy 1999: 157). The speed with which knowledge emerges and is renewed in all areas of knowledge is increasing and today, teachers and students, are constantly sharing, learning together, exchanging knowledge and producing knowledge.

This is evidently due to the advance of digital information and communication technologies, which have significantly changed the way we interact and understand the world. By changing the forms of entertainment, education, leisure, information dissemination and others, we are potentially changing all spheres of society and also, the way in which culture is understood today. A new culture is formed like this, the digital culture. According to Rüdiger (2013), cyberculture was historically explained "by the convergence of cybernetic thinking and communication computing".

Potentialized by digital resources, the school space has been updated. Now it is necessary to operationalize the changes that are taking place and to organize the new way of working with these innovations. Resources and pedagogical strategies are in full adaptation to this new context. Interaction and sharing become, increasingly, key words in the process of knowledge production. The studies of digital culture encompass all actions of production, application and expansion of data in cyberspace and also outside. In other words, cyberspace should not be seen as a parallel universe, not as an extension, but as part of our reality.

The student of today does not only want to consume information, he does not want to receive content passively, quite the contrary, he wants to produce knowledge. We are in participatory culture! For Jenkins (2008) there is content creation and sharing. Students are motivated because their contributions matter to others.

The characteristics of collaborative learning emphasize the autonomy of the student, and at the same time, value the collective construction of knowledge. That is, each one in his singularity can contribute to the growth of all by promoting reflections.

The highlight of the process is the common interest in the theme, the desire to make connections, establish relationships, contribute, be part of the group, and contribute to the collective, through the sharing of new knowledge. It is this that Gee and Hayes (2011) call the "space of passionate

affinities" that people organize in the real world and / or via the internet (or a virtual world) to learn something about an enterprise , a shared passion or interest.

### **3.2 Learning: Student and Teacher (co-authors)**

When dealing with the learning process in the school context, it is necessary to consider two extremely important actors: the student, as an active and participatory agent of the learning process, and the teacher as an agent in mediating between the student and the search for new knowledge.

Many teachers understand that the amount of classes is directly linked to learning, that is, "the more classes are given, the more the student will learn" (Demo, 2000). Knowing that the learning phenomenon of the students depends a lot on the teacher. A well-managed school with all the pedagogical resources is not viable if the school community, especially the teacher, does not leave aside the "traditional" classes and begins to consider learning to learn. The learning process must occur concomitantly in the student and the teacher, according to Demo (2007) "If we want to improve student learning, we must promote teacher learning". Regarding this statement, it is important that the teacher transmits to the students mechanisms of autonomy that they can develop in order to learn. In this context, the teacher needs to reconstruct his role in the teaching and learning process, to stop being the content transmitter and act as mediator, creating significant situations that allow students to assimilate knowledge. Demo (2007) points out that for the student to learn well, it is imperative that the teacher continues to learn well, that is, he is capable of provoking changes in the pedagogical procedures in the classroom, reflecting on the students' learning process, that is, he views himself as an eternal apprentice. Like Bourdieu (2000), we are convinced that ... building a scientific object is first and foremost a break with common sense.

### **3.3 Audience response systems and real-time polling**

The web-based clicker tools are very popular with teachers and students. Research has been describing the benefits of using active learning approaches. Clickers or rapid audience response systems are a technology used to promote active learning. Martyn (2007) conducted a study comparing learning outcomes resulting from the use of clickers compared to active learning approaches to know concretely the cause of increased learning. Although without statistically significant results, both the use of clickers and the active methodologies help to improve students' learning.

Currently there are tools such as Kahoot, Socrative, Plickers, Quizlet, Quizizz, GoSoapBox that have replaced old clickers by taking advantage of the potential of smartphones or tablets with Internet access and that we integrate into our practices very often to learn, strengthen or consolidate vocabulary, grammar or literary content. One of the free online gaming-based learning platforms that can be used for any content area and easily integrates technology into your classroom is the Kahoot app<sup>8</sup>. Although this app only allows multiple choice answers and matching exercises, it is a good tool for reviewing and consolidating the subjects studied in class. Students love this game tool and it is a great way to integrate technology into the classroom and have students engage with curriculum content, while assessing knowledge in the digital age. We have seen using this app in our practices since 2014, possessing more than a hundred quizzes on the most diverse subjects of the program<sup>9</sup>.

#### **3.3.1 Assessment in the Digital Era**

With the widespread use of smartphones among students and access to the Internet at any time, it was possible to provide students with learning and assessment of knowledge inside and outside the

---

<sup>8</sup> <https://kahoot.com/>

<sup>9</sup> <https://create.kahoot.it/profile/linade>

classroom. Using tools to create quizzes such as Kahoot, GoSoapBox, Socrative, Quizlet and Google Forms, students had the opportunity to solve quizzes and do tests in their spare time and in the classroom. These tools allow immediate feedback from students about their learning. Students use their smartphones to respond to real-time quizzes and polling. During this school year, we have integrated these tools into our practices, in order to involve and motivate students with their curricular content and to evaluate their knowledge. The data collected show that students have a positive opinion on using these tools for the success of their learning.

Since we have integrated digital technologies into more than ninety per cent of our classes, we have also changed student assessment tools, moving from paper-based tests to computer-based testing and rubric as assessment tools. Vis-à-vis rubrics, they allow the teacher to develop and systematize evaluation criteria and indicators, reducing the subjectivity of the assessment process. The use of rubrics makes possible to construct more transparent and coherent evaluation criteria in relation to the delimited learning objectives. The teacher can evaluate the students or groups of students with rubrics and the students can co-evaluate between them as well. The rubrics serve as formative assessment tools and allow students to be involved in the learning and evaluation process. Students can also make suggestions for the preparation of the rubrics through which the work and projects will be evaluated. For online-based testing we used Google Forms<sup>10</sup>, and for rubric evaluation we used the public CoRubrics Google Drive templates<sup>11</sup>. We consider that these are useful and appropriate assessment tools to evaluate knowledge and skills in the mobile digital era in which we live.

### **3.4 *Diminuto* app: to improve reading and writing skills**

Writing is one of the skills developed in the mother tongue class, but often the students are not motivated to write. So how can we improve writing skills in the mother tongue? One of the ways to improve writing skills in any language is to read actively in that language. Although there are different methods for improving writing, you need to have a broad knowledge of grammar and spelling. As the best writers are also good readers it is necessary to read regularly as it helps to gain confidence in reading and writing. Finding writing partners could be a good idea to engage students who do not normally like to write.

Based on these ideas, we presented to the students the App *Diminuto*<sup>12</sup>. *Diminuto* is a micro story app, up to 750 characters, in Portuguese language. It is possible to read the stories of other authors and start writing our own short stories. This app can be downloaded to iOS and Android devices. It's a productive hobby tool and a way to read a micro story in a minute. Some authors are also writers, others are just readers. We can create an account and write a short story that does not exceed 750 characters and send it for app author's approval. Then just wait for the app team evaluation result to see if it has been accepted or rejected. If it's published, it's available to read, to anyone accessing the app's website or on the mobile device. The creators of the app recognize their potential as a cultural hobby tool by enabling people to read short stories through mobile devices that fit perfectly into the routines of users and particularly our young generation.

As a motivation strategy for reading and writing, we present this app to students. After being installed on the students' devices, they had a week to read the published micro stories and share the stories preferred with classmates. This app has a simple and practical interface, which facilitates its use by the students and allows taking advantage of the free moments to read. In the second week students were challenged to create their own micro narratives outside the classroom individually. In

---

<sup>10</sup> <https://goo.gl/forms/2t3MLnEWF7u57RM03>

<sup>11</sup> <https://sites.google.com/site/corubricseng/>

<sup>12</sup> <http://diminuto.me/home/landing>

one of the classes the proposal was the creation of texts in collaboration with another mate. This class was very dynamic and productive, because the students who had more difficulties were very committed to the writing of the collaborative stories. Some students expressed some difficulty in synthesizing the text to only 750-character and asked the teacher for help. This strategy proved to be very effective because it forced students to reduce the text to the essentials, which is not always an easy task. The imperative of brevity is an excellent exercise in writing and this app is situated for that.

Some students became enthusiastic and created several narratives. The students who wanted submitted their stories and some were approved, circulating now in the app. This possibility for students to see their published stories increased students' enthusiasm and motivation for reading and writing micro stories. This practice was also a great learning experiment for the teacher who also saw his micro narratives published.

### **3.5 Gamification: to promote students' motivation**

The concept of gamification was proposed in 2011, to designate "the use of game design elements in nongame contexts" (Deterding et al., p:29). It has at its origin the idea of motivating, increasing the adhesion and levels of activity of users in tasks that are presented in an apparently playful format or with characteristics that resemble games or challenges.

The Foursquare location service, launched in 2009, was the application that gave the big boost to the idea of using game components where it would not be expected. The user, as he used the system, received points, medals, reached levels, etc., which made the service a huge success. The introduction of these game ingredients in a wide variety of fields, such as finance, health, education, among others, was quickly observed. At the same time, it began to be studied in the areas of man-machine interaction and game research (Deterding et al, 2011). Gamification relates to game, that is, presents elements that are characteristic of games. According to Deterding et al. (2011), what distinguishes the gamification of from games of entertainment or serious games, is that it is a system that includes some elements of games, but it is not totally a game.

According to Muntean (2011), gamification means introducing game mechanisms characterized by three attributes:

- Types of game mechanisms: Progression, feedback and behavioral;
- Benefits: *engagement*, loyalty, time, influence, fun;
- Personality types: exploiters, successful, social and murderous.

Thus, gamification is a learning strategy that takes advantage of the motivational elements of games in non-game contexts, such as educational and professional levels through the exploration of mechanical techniques (challenges, points, rewards, ...) or dynamics (achievement, competition, incentive, ...) in order to achieve better results. Why apply gamification in the classroom? Because it can improve students' learning outcomes and competencies at school. It allows rewarding the learning actions of the students and helps in the assimilation of knowledge.

There are more and more tools to gamifying the classes at different levels. Perhaps the best known are Kahoot, Socrative or Plickers. In addition to the use of these instant audience response systems we have also created the project "Magos da Sabedoria"<sup>13</sup> (Wisdom Magicians) to gamify the process of teaching and learning, available on the website shown on figure 1. We intended to generate curiosity, expectation, overcoming obstacles, companionship and true emotions in our

---

<sup>13</sup> <https://sites.google.com/view/magosabedoria>

students. Besides that, we wanted to take advantage of the pedagogical potential of gamification to increase students' motivation and involvement in their own learning process.

**Figure 1 – Gamification project Website**



It is a Web environment in which a scenario of learning based on gamification is presented, motivating students to the study of two classic books of Portuguese literature, and working in pairs. This virtual learning environment is enriched with digital technologies. Students use their computer, tablet or smartphone, as being convenient for resolving different activities. This adventure is full of missions, challenges and rewards. Through videos, exercises, games, quizzes, challenges, evaluations and rewards students approach the study of two books that present some degree of complexity for young people. With this approach, it is a more fun and effective way to study curricular contents, considered difficult, while fulfilling the program of the Portuguese course and maintaining high levels of learning.

With gamification students are able to assimilate the most theoretical concepts at their pace and in a collaborative way. It creates a dynamic and interactive learning environment that helps to assimilate and creatively develop literary content. The students work teams discover the different missions and activities proposed according to their pace of learning. We believe that this strategy allows students to be responsible for their own learning and attends to the diversity of students' learning styles and increases the degree of motivation. The classes become more dynamic and fun. It was evident how the students' attitude evolved over the project, as they realized that the lesson evolved around their work, and not around a lecture by the teacher. This makes them responsible for the actions developed in each class, because they knew that the attitude, the effort and the interest in the class was rewarded in Leaderboard. In each class, the first reaction of the students was to see their position in the Leaderboard, reflected in the satisfaction of the great majority of the students for verifying that they were evolving and gaining points.

#### **4. METHODOLOGY**

The classroom experiments integrating the students' mobile devices were developed in the 2016/17 school year, at a public secondary school in the north of Portugal and at a Training Center in Lisbon. For the development of the different experiments that we presented above, we started from the idea that technology is increasingly present in society and in the educational world, so it is important to be present in classes too. This is a qualitative descriptive research.

To know the possession of the students' mobile devices and their use, we designed a questionnaire with multiple choice questions, in the Likert scale type, with three sections: personal information, possession of mobile devices, most used social networks and most used applications. The questionnaire was created with the Google Forms application. The first group was inserted into the class blog for students to respond, and the second was sent to the class by email. This questionnaire was introduced at the beginning of the school year, in September, to provide us with information about the possession of mobile devices by students and to help us consider the possibilities of integrating them into classes.

The first study comprises 66 students of the 10th grade, and 38 students of 11th grade, both from vocational courses, aged between 15 and 19 years old. The answers showed the prevalence of male students (86.5%)<sup>14</sup>.

In the second study, 23 trainees took part in the professional course of the French- language class of a Professional Training Center, aged between 18 and 23 years old. These students, for the most part, had already dropped out of school some years before and did not have predefined curricular "paths", because "it is the students' abilities and needs that determine the curriculum to be considered" (Serra, 2005: 42), and the contents were presented in a more meaningful and motivating way. In order to stimulate a more personalized teaching approach, and more directed to the difficulties of each student/ trainee, in the professional training courses, the classes have a smaller dimension than in the regular school, being constituted by 25 students at the most .

**Table 1 - Students mobile devices ownership (N=127)**

| Items           | Vocational Courses |      |                 |      | Professional Course<br>N=23 |
|-----------------|--------------------|------|-----------------|------|-----------------------------|
|                 | 10 Grade (N=66)    |      | 11 Grade (N=38) |      |                             |
|                 | f                  | %    | f               | %    | %                           |
| Mobile phone    | 18                 | 30,5 | 16              | 42,1 | 15%                         |
| Smartphone      | 47                 | 79,7 | 31              | 81,6 | 90%                         |
| Tablet          | 24                 | 40,7 | 19              | 50   | 82%                         |
| MP3/MP4 players | 7                  | 11,9 | 8               | 21,1 | 21%                         |
| Laptop          | 35                 | 59,3 | 32              | 84,2 | 87%                         |
| Other           | 2                  | 3,4  | 3               | 7,9  | ----                        |

As we can see in the above data (Table I) the smartphone is the most widespread mobile device among the students of the three groups, followed by the laptop. But, the habits of using multiple mobile devices, namely laptops and mobile phones are different. Another piece of data shows that most students in the 10th grade (78%) and 11th grade (80%) have their own mobile data on their mobile devices. This data is important because it allows us to think about the integration of 1:1 student mobile devices in our practices, since the school has purchased tablets and can lend them to students who do not have a mobile device available.

The social network most used by all groups is Facebook, followed by Instagram and Snapchat. Most students access social networks on a daily basis. The mobile device most used by students in their private life is the smartphone, to access social networks, play games, send SMS, listen to music, communicate and search information on the Web. Most students in both groups (10th Grade 72.4% ; 11th Grade 84.2%) consider that the students' mobile devices should be used in class as a tool to support learning.

Regarding students' perceptions of the potential of mobile devices to support learning activities, the vast majority of students in both groups (more than 80%) considered that the smartphone is an appropriate tool for reading PDF documents, access the Internet, take photos to illustrate work, make

<sup>14</sup> <https://goo.gl/Nrdkhg>

small videos, save notes, perform online tests, clarify questions with the teacher or classmates, organize field trips, and schedule events.

#### 4.1 Student's perceptions about using mobile devices in classroom

The data presented below were collected through an online questionnaire at the end of the school year, after the intervention plan was executed. We asked students in both groups about their perceptions of the mobile learning strategies used by the teacher during the year using their mobile devices (Table II).

In the first group, for the vast majority of 10<sup>th</sup> grade (90%) and all 11<sup>th</sup> grade students using mobile devices helped them to understand lesson activities. For all students of both groups using mobile devices facilitated collaboration with other classmates and they enjoyed using the mobile devices to carry out the class activities. For 92% of 10th grade and 97% of 11th grade the use of mobile devices allowed them to be more participative in the development of tasks. Concerning class concentration using mobile devices, the vast majority of students in the 10<sup>th</sup> grade (89%) and 11<sup>th</sup> grade (95%) reported focusing more on learning when using mobile devices to accomplish the tasks of the lesson. This is relevant because mobile devices are often presented as distracting students (Rikala, 2015). All 10<sup>th</sup> grade students and 98% of 11<sup>th</sup> grade students reported that using mobile devices helped them with learning. All students in both groups considered mobile devices as learning tools. Finally, for 91% of the 10<sup>th</sup> grade students and 95% of the 11<sup>th</sup> grade using the mobile devices helped to understand the contents of the class.

In the second group, most of the trainees learned with mobile technologies because most trainees improved their French-speaking skills. All students in the 3 groups liked to use the mobile devices for class activities. Most trainees have come to view mobile technologies not only as tools that help them in managing their school activities but also as valid pedagogical elements that are important to explore.

**Table 2 - Students perceptions about using their mobile devices in the classroom (N=127)**

| Items  | Scale             | Vocational Courses |    |                 |    | Professional Course |
|--|-------------------|--------------------|----|-----------------|----|---------------------|
|  |                   | 10 Grade (N=66)    |    | 11 Grade (N=38) |    | N=23                |
|  |                   | f                  | %  | f               | %  | %                   |
| Using mobile devices helped me understand lesson activities.                                   | Strongly agree    | 19                 | 61 | 26              | 32 | 2                   |
|  | Agree             | 40                 | 29 | 12              | 68 | 98                  |
|  | Disagree          | 7                  | 10 | 0               | 0  | 0                   |
|  | Strongly disagree | 0                  | 0  | 0               | 0  | 0                   |
| The use of mobile devices in the classroom facilitated my collaboration with other colleagues. | Strongly agree    | 50                 | 76 | 20              | 53 | 0                   |
|  | Agree             | 12                 | 18 | 18              | 47 | 100                 |
|  | Disagree          | 4                  | 6  | 0               | 0  | 0                   |
|  | Strongly disagree | 0                  | 0  | 0               | 0  | 0                   |
| I enjoy using the mobile devices to carry out class activities.                                | Strongly agree    | 40                 | 67 | 23              | 60 | 100                 |
|  | Agree             | 20                 | 33 | 15              | 40 | 0                   |
|  | Disagree          | 0                  | 0  | 0               | 0  | 0                   |
|  | Strongly disagree | 0                  | 0  | 0               | 0  | 0                   |
| The use of mobile devices allowed me to be more participative in the development of tasks.     | Strongly agree    | 51                 | 77 | 23              | 60 | 2                   |
|  | Agree             | 10                 | 15 | 14              | 37 | 98                  |
|  | Disagree          | 5                  | 8  | 1               | 3  | 0                   |
|  | Strongly disagree | 0                  | 0  | 0               | 0  | 0                   |
| I focus more on my learning when I use mobile devices to accomplish class tasks.               | Strongly agree    | 30                 | 45 | 19              | 50 | --                  |
|  | Agree             | 29                 | 44 | 17              | 45 | --                  |
|  | Disagree          | 7                  | 11 | 2               | 5  | --                  |
|  | Strongly disagree | 0                  | 0  | 0               | 0  | --                  |
| The use of mobile devices helped me in learning.   | Strongly agree    | 36                 | 55 | 20              | 52 | 2                   |
|  | Agree             | 30                 | 45 | 17              | 45 | 98                  |
|  | Disagree          | 0                  | 0  | 1               | 3  | 0                   |
|  | Strongly disagree | 0                  | 0  | 0               | 0  | 0                   |
| Mobile devices as learning tools help me in tasks.   | Strongly agree    | 33                 | 50 | 23              | 60 | --                  |
|  | Agree             | 33                 | 50 | 15              | 40 | --                  |
|  | Disagree          | 0                  | 0  | 0               | 0  | --                  |
|  | Strongly disagree | 0                  | 0  | 0               | 0  | --                  |
| Using mobile devices helped me to understand the contents of the lesson.                       | Strongly agree    | 31                 | 47 | 21              | 55 | 2                   |
|  | Agree             | 29                 | 44 | 15              | 40 | 98                  |
|  | Disagree          | 6                  | 9  | 2               | 5  | 0                   |
|  | Strongly disagree | 0                  | 0  | 0               | 0  | 0                   |

The totality of students from vocational courses enjoyed learning the lesson materials through Kahoot, Socrative, Plickers, GosoapBox and Quizlet, because they are more active and motivated in class, as pointed out in the open answers. As we can see the perceptions of the students of both studies are very positive regarding all items, and about the potential of the mobile learning strategies developed throughout the year, supported by the students' mobile devices. This reveals that when properly used mobile devices and learning strategies can be very positive in students' motivation and interest in curricular learning.

## **5. CONCLUSION**

As new tools and online services become available new opportunities emerge either for learning a foreign language or for improving one's mother tongue. The results show that using active strategies and mobile digital tools helps students to better understand the lesson materials and to increase levels of participation and involvement.

Despite the students' perceptions about these experiences, there are constraints and challenges that the teacher has to solve during the learning process. In the past few years, we have been combining active methodologies and mobile technologies, and we have faced some obstacles that challenge the use of mobile devices, namely the Internet connection of the school that is sometimes slow and breaks the dynamics of the class, and this disappoints students. Also, performing some more complex tasks on a small screen is difficult for some students. Charging the students device batteries is another problem that arises, but this easily solved.

According to the results obtained, students of the two studies find more advantages than disadvantages in the integration of mobile devices and apps in the school activities and they complain that the integration of mobile technologies (devices and apps) in school should be greater. It is therefore important that teachers reflect on the possibility of implementing these tools in teaching practices in a natural way, for a better adaptation to the technological context in which we live, to enhance the functionalities that these tools bring to the teaching and learning process and to respond to students' needs.

We recognize the limitations of the data presented, collected and analyzed from a descriptive perspective, but we believe we can present strategies and ideas for a more efficient use of mobile technologies as tools of learning mediation in mother tongue and foreign language classes. It is necessary to continue to study the use of mobile devices in the practices of different school subjects, to obtain data that allow us to confirm trends or differences in this field. It might be interesting to compare these data with others obtained in other fields or levels of education and to analyze the use of mobile devices and applications in different educational contexts. By developing these experiments and integrating students' mobile devices into curricular practices, we are trying to make students more motivated in class, cause them to enjoy learning and to experience different technology-enriched learning practices.

## **6. REFERENCES**

Bourdieu, P., (2001). *Langage et Pouvoir Symbolique*, Seuil. [BOURDIEU, P., (2001). *Language and Symbolic Power*, Seuil. ].

Crompton, H. (2013). A historical overview of mobile learning: Toward learner-centered education. In Z. L. Berge & L. Y. Muilenburg (Eds.), *Handbook of mobile learning* (pp. 3–14). Florence, KY: Routledge.

Demo, P., (2000). *Conhecer e aprender: sabedoria dos limites e desafios*. Porto Alegre: Artes Médicas Sul. [Demo, P., (2000) .Knowing and learning: limits wisdom and challenges. Porto Alegre: Artes Médicas Sul. ]

Demo, P., (2007). *Equívocos da educação*. Available from:<http://pedrodemo.blog.uol.com.br/>. [Demo, P., (2000). Misconceptions about education].

Deterding, S., Dixon, D., Khaled, R. & Nacke, L., (2011). *From game design elements to gamefulness: Defining "Gamification"*. Proceedings from MindTrek '11. Tampere, Finland: ACM.

Dudney, G., Hockly, N. & Pegrum, M. (2013). *Digital Literacies: Research and Resources in Language Teaching*. United Kingdom: Pearson Education Limited.

Guikema, J. & Williams, L. (Eds.) (2014). *Digital Literacies in Foreign and Second Language Education*. San Marcos, TX: Calico.

Han, I. & Shin, W.S. (2016). The use of mobile learning management system and academic achievement of online students. *Computers and Education*, 102: 79-89.

Kukulska-Hulme, A., Norris, L. & Donohue, J. (2015). Mobile pedagogy for English language teaching: a guide for teachers. Available from: <http://oro.open.ac.uk/43605/>

Gee, J. P. & Hayes, E. (2011). *Language and Learning in the Digital Age*. London&New York: Routledge.

Lévy, P. (1999). *Cibercultura*. São Paulo: Editora 34. [Lévy, P. (1999). *Cyberculture*. São Paulo: Editora 34.]

Martyn, M. (2007). Clickers in the classroom: An active learning approach. *Educause Quarterly*, 2, 71-74. Available from: <https://goo.gl/8s6qGN>

Moura, A. (2015a). iPad Program in K-12 Education: The Pilot Year. In: ZHANG, Y. (ed.) *Handbook of Mobile Teaching and Learning*. Australia: Springer, pp. 601-616.

Moura, A. (2015b). Using arcade games to engage students in the learning of foreign and mother languages. In Giovanni Vincenti & James Braman (Eds.), *EAI Endorsed Transactions on e-Learning*, vol.2, n.5, pp. 1-14.

Moura, A. & Carvalho, A. (2013). Framework For Mobile Learning Integration Into Educational Contexts. In Zane L. Berge, Lin Muilenburg (eds.), *Handbook of Mobile Learning*. London: Routledge, pp. 58-69.

Muntean, C.I. (2011). *Raising engagement in e-learning through gamification*. Paper presented at the 6th International Conference on Virtual Learning ICVL.

Rikala, J. (2015). *Designing a Mobile Learning Framework for a Formal Educational Context*. (Tesis doctoral). University of Jyväskylä, Finland. Available from: [https://jyx.jyu.fi/dspace/bitstream/handle/123456789/47324/978-951-39-6311-8\\_vaitos06112015.pdf;sequence=1/](https://jyx.jyu.fi/dspace/bitstream/handle/123456789/47324/978-951-39-6311-8_vaitos06112015.pdf;sequence=1/)

Rüdiger, F. (2013). *As teorias da cibercultura: perspectivas, questões e autores*. Porto Alegre: Sulina.

[Rüdiger, F. (2013). *The theories of cyberculture: perspectives, questions and authors*. Porto Alegre: Sulina. ]

Serra, H.(2005). *Paradigmas da inclusão no contexto mundial*. Available from: <http://repositorio.esepf.pt/handle/10000/27> . [Serra, H.(2005). *Inclusion paradigms in the global context*.]

Sung, Y.T., Chang, K.E. & Liu, T.C. (2016). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis. *Computers & Education*, 94: 252-275.

UNESCO (2013). *Policy guidelines for mobile learning*. Available from: <http://unesdoc.unesco.org/images/0021/002196/219641e.pdf>