

# Teaching History during Covid-19: Report on mobile- and computer-learning path for 21<sup>ST</sup> century skills

## Enseñanza de la Historia durante Covid-19: Informe sobre una ruta de aprendizaje asistida por computadoras y dispositivos móviles para las habilidades del siglo XXI

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### Abstract

We present a report regarding the experience of a first-year classroom in an Italian Liceo during the semi-lockdown (students in weekly rotation), then full lockdown at school. The aim was to create a participatory environment, to give all students the opportunity to promote concrete knowledge and develop 21<sup>st</sup> century skills, starting from the learning ones. For this purpose, cooperative peers in flipped classroom were invited to: read and see teacher's selected sources (also for 3D visors); write an online document (Word), answering peers' questions; create a digital storytelling of the topic to present orally online, collaborating through social media (WhatsApp) and collaborative online tools; and finally, complete a quiz (Quizziz). The obtained results concern: the engagement of the classroom, which fosters all students' essential understanding and knowledge; inclusion of weaknesses through their active role in cooperation; inclusion of mobile-phones as a democratic tool; ubiquity of learning, which reduces the distance between online and in-presence schooling; and, above all, fostering the achievement of the 21<sup>st</sup> century skills, particularly learning-to-learn. For all these reasons, what lockdown teaches will always remain as an important pedagogical lesson.

### Keywords

Mobile-Assisted Learning, 21<sup>st</sup> Century Skills, Flipped Classroom

### Resumen

Este informe resume la experiencia de un Liceo Italiano, más exactamente un primer curso, durante la pandemia, razón por la que los alumnos participaron en las clases turnándose semanalmente, o todos en confinamiento. Para promover conocimientos concretos y las habilidades del siglo XXI, desde las de Aprendizaje, en un entorno participativo, se adoptó la clase invertida, en la cual los alumnos tuvieron que: revisar fuentes, también en 3D; escribir un documento en línea (Word), respondiendo a preguntas de compañeros; elaborar una narrativa digital del tema para exponerla oralmente, colaborando a través de redes sociales (WhatsApp) y herramientas colaborativas en línea; finalmente, responder a un cuestionario (Quizziz). Los resultados se refieren a: el compromiso de la clase, para la comprensión y los conocimientos esenciales de los estudiantes; inclusión de debilidades, por su papel activo cooperando; inclusión de los móviles como herramienta democrática; ubicuidad del aprendizaje, que minimiza la distancia entre la educación en línea y presencial; especialmente, fomentar el alcance de las competencias del siglo XXI, principalmente el aprendizaje-para-aprender. Por eso, lo que enseñó el confinamiento siempre será importante didácticamente.

### Palabras clave

Aprendizaje asistido por móviles, Habilidades del siglo XXI, Aula invertida

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## 1. Introduction

All over the world, the situation determined by Covid-19 encouraged researchers and teachers to find new environments and tools for education, or to apply what was only in the experimental phase of implementation in schools (such as online educational platforms, 3D environments, integrated methodologies, new kinds of evaluation and self-assessment) (Mahmood, 2021). On the one hand, there was an urgent need to keep students and teachers in an educational relationship (Buzzi et al., 2020), even if there was partially or semi-lockdown, for which the Internet and the Web offered a great solution, but whose effective potential was still largely unknown by many actors in education (Giovannella et al., 2020). On the other hand, it was precisely the introduction of the Internet and the Web that dramatically increased the risks of digital divide and school dropout (Pragholapati, 2020).

Consequently, the choice of integrated methodologies and tools has been challenging, especially when it comes to the topic of History, which is the focus of this report. Indeed, the teaching of History tends to be challenging in two ways: negatively, because students often consider it as content to be memorized without understanding it in its complexity, and for their understanding of current events as far removed from their concrete reality. As it results from countless empirical studies (see Barton, 2008), even when they are dealing with different sources, this attitude leads some of them to “think of the process as similar to assembling a jigsaw puzzle” (Barton, 2008, p. 239). Nevertheless, there is also a positive challenge for the teaching of History, because students need new approaches and new modern tools to study it (Krutka & Carpenter, 2016). It also inherently offers cultural, transdisciplinary topics that can be critically explored in depth, as an opportunity to develop complex thinking skills for students, like those indicated as a must for the 21<sup>st</sup> century (Figure 1).

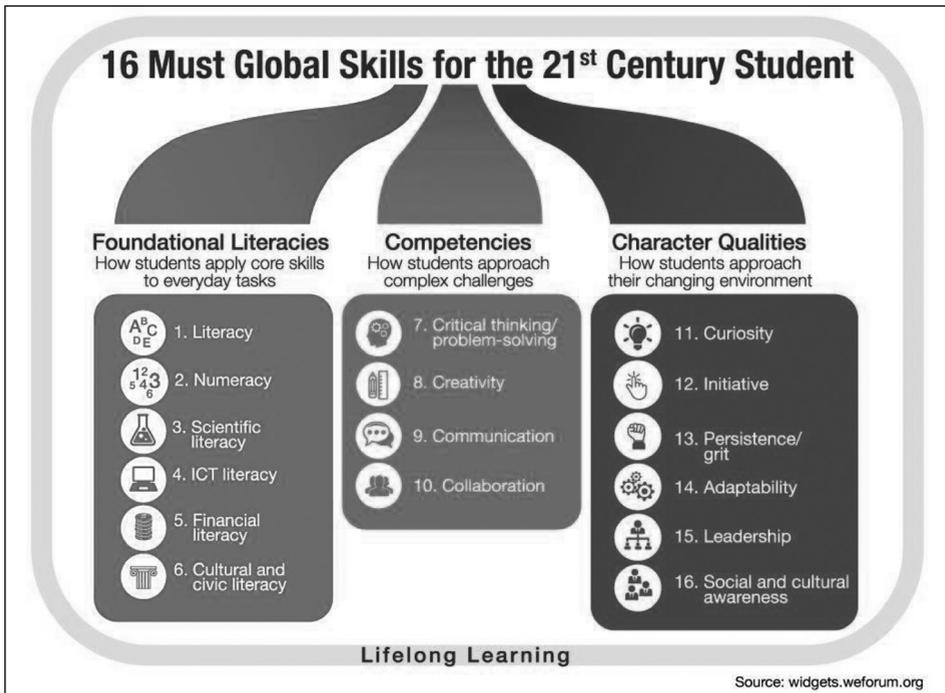


Figure 1. 21<sup>st</sup> century skills for students

Note: Reprinted from "New Vision for Education: Fostering Social and Emotional Learning through Technology", by World Economic Forum, 2016, p. 4. Retrieved from: <https://ischool.startupitalia.eu/education-main/education/57348-20160929-scuola-del-futuro-apprendimento-digitale>

With this awareness, there was searched for adequate solutions to engage students in learning History during covid-lockdown, and, at the same time, take advantage of integrated methodologies to foster their acquisition of 21<sup>st</sup> century skills, starting with learning-to-learn.

## 2. Suggestions from the literature

Undoubtedly, the literature offers some methods and strategies that have already proved their worth, even if not in situations as dramatic as covid-19, or, as far as part of them is concerned, have been tried in fields other than History teaching. This is the case of Mobile-Assisted Learning (MAL), whose very positive results in the literature concern almost exclusively the learning of foreign languages (FL), as previously the Computer-Assisted (respectively, MALL and CALL) (e.g., Cinganotto & Cuccurullo, 2016). However, it is precisely this link between mobile-phones and communicative learning power that may be the key to adopt this strategy. Indeed, "mobile learning is characterized by its

potential for spontaneous, informal, personalized, and ubiquitous” (Miangah, 2012, p. 309) and its features of “social interactivity: exchanging data and collaboration with other learners is possible through mobile device” and “connectivity: mobile devices can be connected to other devices, data collection devices, or a common network by creating a shared network” (p. 310), form the basis for online student workgroups for any subject. Moreover, where the communicative aspect is concerned, CAL (for students in lockdown at home) and MAL (for those at school alternatively) can provide the same extended, meaningful learning environments for blended and/or online tasks in History as for FLs (Coyle, 2015). Indeed, they support active learner engagement and the achievement of collaborative products among students at distance, as of communicative academic skills (Warnich & Gordon, 2015). Concerning the subject of History, technological devices have been involved in basic activities, like building geo-historical maps (Jo, 2016) in many cutting-edge research, from game-based learning (e.g., Neville & Shelton, 2010), to Augmented or Immersive Reality (Kysela & Štorková, 2015; Warnich & Gordon, 2015), other than in fostering participatory learning through social media (Krutka & Carpenter, 2016), or simply adopting the *Bring Your Own Design* model (Parsons, 2014).

Concerning integrated methodologies, face-to-face classes primarily use:

- Flipped Classroom (FC), as in the *Holistic Flipped Classroom Model* (Ozdamli & Asiksoy, 2016), where online platforms support synchronous and asynchronous activities of participatory teaching and learning through interaction with teachers/instructors and peer work. As for the subject of History, there is very little research on FC linked to this subject (Lo, 2017), focusing on higher education and scientific subjects (Siti et al., 2017).
- Digital Storytelling, which includes narrative forms at different levels (picture albums, written or oral narratives, podcasts, multimedia stories in 3D virtual environments) through which students can develop critical thinking in collaboration with classmates, both in school and online through collaborative platforms and tools, enhancing their management of holistic learning and creativity (Gutiérrez et al., 2012). History as a subject has also embraced the transmedia approach of Digital Storytelling in various projects (Koehler & Mishra, 2006; Maloy et al., 2017; Mason et al., 2000).
- Gamification, to increase student motivation and engagement, and also to promote positive attitudes by supporting positive self-assessment of their learning process (Al-Azawi et al., 2016).

They all offer the possibility of incorporating technological devices into blended and online teaching and learning, so they were considered in the context of an educational experience, whose description, together with the results and their discussion, is the aim of this paper.

### 3. Context

Italy, where the reported experience happened, after a general lockdown last scholastic year, has introduced mild or harsher closures in the different regions, depending on the parameters of the spread of the virus and the performance of hospitals, whose data are collected weekly so far to introduce different alert measures included for schools (Cellini, Di Giorgio, Mioni, & Di Riso, 2021). Thus, Secondary students were often taught entirely online, or alternately half in the classroom and half online. The most obvious consequence for the initial classrooms was the impossibility of having students meet each other, and also the relationship between teachers and students was often based on speeches, videos and writings, without taking into account the emotional factors of interaction, which certainly does not reflect well by means of distance learning (Giovannella et al., 2020).

The involved first classroom of an Italian Liceo of Human Sciences, was in the capital of the island of Sardinia, Cagliari, with 23 14-year-old female students, all coming from Low Secondary Schools of many towns in the district (only 2 live in the city). This means that they arrived at the Liceo in September and after 5 months had not all met together, but only half a class at a time. Their digital competences were diverse but generally not high: for instance, in a short presentation in January 2021, they said that they were not used to 3D environments or games, and that they used their mobile-phones massively for social media (in order of preference: Instagram, WhatsApp, Tik Tok, YouTube, Telegram). Platforms, like Google Classroom, and emails had become common during the lockdowns for Covid-19, but only for lessons and contact with teachers. Almost all of them were also familiar with simple PowerPoint presentations, and 3 of them knew Prezi presentations, although no other online pedagogical tool or website was ever tried.

There was no digital divide, partly because the Italian government provided students with borrowed devices (laptops or tablets) or funded their connection if they came from low-income families, as was the case for 2 of the participants. A support teacher participated in one of the curricular three hours a week of History, due to the presence of a student with some learning difficulties, who worked with two other classmates of her choice.

### 4. Aims of the intervention at school.

During covid-lockdowns, the approaches proposed in the literature with the use of computers, mobile phones and in 3 cases tablets were all applied in an initial classroom of a Secondary school considering the positive results in terms of knowledge and skills acquisition obtained in previous similar implementations for a critical action research in other in-presence contexts, always with the involvement of History, but in the last classes of the Italian Licei (Porcedda, 2021). It is worth noting that there are no other published studies,

at least not in English or Spanish, reporting on the contemporary use of these methods, supported by MAL and CAL. Hence, this intervention can be considered as pioneering.

As far as the curriculum is concerned, the annual timetable of a class of the biennium of the Liceo of Human Science includes 891 hours of teaching, divided into two quarters, with three hours of Geo-History per week. Each teacher should take into account the ministerial guidelines on content, which concerns the period from the Paleolithic to the end of the Greek civilisation and the Hellenistic Reigns. This intervention was planned by their History teacher, who reports on it here, to help students achieve the curriculum competencies and skills listed below:

1. Production of oral and written texts related to activities on a variety of topics;
2. Research, collection and critical evaluation of sources, including digital;
3. Critical use of technologies to study and explore topics in depth, research, and communicate, especially those related to the Social Sciences and Humanities;
4. Conscious and critical use of collaborative and communicative methods;
5. Development of learning to learn, i.e., personal and collaborative strategies for learning;
6. Cross-curricular development of 21<sup>st</sup> century skills.

They were listed in the objectives of the intervention below:

- To engage all students, often discouraged by distance learning, in student-centered approaches proposed in the literature for the study of history, namely: holistic flipped classroom, digital storytelling and gamification;
- To link and vary the approaches considered during the intervention to create engaging task-based activities;
- To create participatory blended or online tasks, primarily to develop MAL for students who are present and CAL for students who study at home on a weekly basis;
- To promote the cross-cutting acquisition of 21<sup>st</sup> century skills through cognitively challenging and collaborative workgroups;
- To evaluate results in a participatory manner so that students' metacognition and self-assessment gain importance through their participatory, narrative evaluation.

## 5. Description of the activities

According to Holistic Flipped Classroom (Ozdamli & Asiksoy, 2016), all students were simultaneously provided with three sources on the topic of pre-classical Greece on the Google Classroom platform to watch and read in presence and online: 2 short videos and 3 pages from their history textbook. They then had to individually write down two questions about the topic on a sheet of paper to activate their meaning-making. Those who participated online then took a 15-minute break (which was mandatory after 45 minutes online), while those present were given 3D visors to take an online journey through the reconstructed ancient Athens on YouTube, making the lesson an exciting experience and reducing the distance from the past. The lesson lasted one hour.

In the second lesson, participants were asked to form groups of peers (one online and one on-site), many of which were students who had never met each other before. They were free to choose who they preferred, to facilitate encounters between unfamiliar classmates and to encourage their mutual feedback, as positive as possible, during their work together. They had to share their questions on the topic of the previous lesson via WhatsApp (WA), choosing between instant messages or videos for communication, and answer them independently. In the last 20 minutes, they corrected each other's answers based on the sources provided, while the teacher listened to them, gave them positive feedback, confirmed and sometimes expanded their answers. This allowed for an assessment of the students' understanding of the content, their self-assessment of knowledge, a collaborative environment among classmates and between them and the teacher.

After the previous phases of personalised work in which they acquired basic knowledge about the content, and after the other students had the opportunity to watch the 3D video with visors, the same peers were asked in the third lesson to plan their digital stories about the historical period in question. They could choose between different tools for different digital storytelling end products:

- *Wakelet* or *Sutori* to create mindmaps, with visuals (from free repositories such as those associated with these tools) and text (summarised and personalised as much as possible from the sources provided);
- *Powtoon*, to create short cartoons that might make a connection between the subject of History and the Iliad, which the teacher had just introduced in another subject.

Although *Wakelet* was presented by the teacher as easier, as it is also an extension of their browsers (Chrome or Safari), only a couple of peers whose products consisted mainly of written parts chose it. *Sutori* was most commonly used for mindmaps, with most images briefly labelled. *Powtoon* was more complex than the other tools, due to the

choice of characters and their movements, times, settings eventual insertion of music or commentary. Therefore, it was chosen by the more creative and knowledgeable students, who, however, worked with a colleague who was not at the same level and was more concerned with the planning of their product than with the actual digital implementation. Nevertheless, all these tools enabled ubiquitous work among peers both during the next lessons (2 hours) and at home through their collaborative apps for mobile phones and tablets, as well as the web apps for computers.

The peers at school communicated with each other via WA to select images, elaborate their content and deal with difficulties regarding their online creations, while one of the peers (the one at home with a computer or, if they preferred, with a laptop at school) dealt concretely with the management of the tools. According to the Holistic Flipped Classroom Model, all activities at school were synchronously monitored and supported by the teacher, who did not make direct corrections but asking students questions to reflect on their work.

Finally, they presented their digital stories to the class (2 hours) after uploading them to a dedicated task of Google Classroom, and were invited to highlight the strengths and weaknesses of all presentations. This should be considered as participatory narrative evaluation, namely the collaborative assessment of their products that promoted their metacognition of the results primarily through peer feedback to which students could turn for their learning. In particular, they considered the following common parameters: a) completeness of information; b) appropriateness of visual representations linked to the content; c) personalisation of sources; d) complexity of the digital story. They, also remotely, evaluated the collaboration and explained why it seemed or did not seem positive to them.

They ended the experience with a 20-question quiz (on Quizziz) to gamify the assessment and self-assessment of their knowledge and vocabulary.

Throughout the activities, the teacher had the role of a guide and prompter for the initial sources and tools. She answered their doubts about the content, encouraged their collaboration when they were not perfectly balanced during the work, and supported them when they had difficulties managing the online tools, especially with *Powtoon*.

## 6. Results

The first goal achieved, according to the students, as determined by their narrative oral evaluation, was their pleasure in collaborating with classmates, at point that they kept on building their products outside school through WA, which they clearly preferred to *Telegram*, suggested by another teacher.

They also emphasised the positive attitude of their peer. For example, “She is not very good at learning, but she had great ideas for the story”, or “She is really able to manage the online tool and encouraged me to keep going on!” This shows that positive communication took place through their mobile phones, which enabled them to create excellent multimedia and transmedia products, that promoted and enhanced their critical thinking skills. Only one of them did not actively participate, because she was absent during these two weeks, while even the students who normally have difficulty in studying not by heart History, have been highly involved, always due to their collaboration via WA and to their pride in their peer-tasks.

Five of these works were created in *Powtoon*: one developed a cartoon on the farewell of Hector to Andromache and their crying son, in the real environment of an image of the ruins of Scee Doors; another cartoon was based on the initial situation of the Iliad, for which the walls of Troy were designed and digitised, whilst the heroes were chosen among those of the tool. The other cartoons, instead, made use of available environments, but all of them adapted, modernising, the characters to the digital story, also personalised in their dialogues. Only one group chose *Wakelet* and wrote a historical digital story focused on the relationship between Themistocles and Alcibiades. Everyone else chose *Sutori* and focused on finding and evaluating images, and then writing short labels so as to create their mind-maps. The final content knowledge quiz did not produce any insufficient result for anyone (19 did it); on the contrary, most scored highly (13/19).

Table 1 summarises the positive results, related to the objectives:

Table 1

*Positive results of the intervention, related to its objectives and the skills of 21<sup>st</sup> century. Author's own work*

<b>Educational adoption of technological devices</b>	
<i>Effective support for blended and online History learning</i>	<ul style="list-style-type: none"> <li>• research of materials</li> <li>• management of tools</li> <li>• wherever and whenever instantly available content</li> <li>• connection amid classmates for common works</li> <li>• sharing of sources, also modifiable</li> <li>• visualisation of content</li> <li>• deepening of specific vocabulary</li> </ul>

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### 21<sup>st</sup> century students' skills

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<b>Collaboration</b>	<ul style="list-style-type: none"><li>• opportunity for knowing each other at work</li><li>• instantly sharing of ideas, materials, concrete collaborative works</li><li>• opportunity of groupworks at distance</li></ul>
<b>Critical thinking</b>	<ul style="list-style-type: none"><li>• learning to learn</li><li>• analysis of sources: common and supportive meaning-making of topics</li><li>• decision making: deciding how to carry out their final products; choosing tools and proper materials</li><li>• problem solving: overcoming difficulties in the management of unknown online tools and in the construction of their products</li><li>• metacognition and formative evaluation: on learning paths and consequent results, fostered by peer feedback and participatory narrative evaluation</li></ul>
<b>Communication</b>	<ul style="list-style-type: none"><li>• fostered communication <i>inter pares</i></li><li>• online communicative multimedia and transmedia environments, available to be personalised by students as prosumers</li><li>• <i>Holistic Flipped Classroom</i> leads to a serene environment, where the teacher scaffolds students' work (low level of anxiety)</li><li>• Digital Storytelling leads to personalised, but collaborative, historical narratives in all dimensions (visual, written, listened, spoken, so especially linguistic)</li><li>• Gamified quizzes lead to a contemporary competition, which fosters better knowledge of topics</li></ul>
<b>Creativity</b>	<ul style="list-style-type: none"><li>• Learning by doing</li><li>• Creation of multimedia, and transmedia as well, online products</li><li>• Elaboration of new online content</li></ul>
<b>Literacies</b>	<ul style="list-style-type: none"><li>• ICTs literacy: management of online content and tools as prosumers</li><li>• Cultural and civic literacy: management of History materials</li></ul>

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Where weaknesses are concerned, according to students' opinions, the first thing to underline is that this implementation was possible thanks to the fact that the school gave a password for the wifi to all students who did not have a strong internet connection. Indeed, it would have been difficult for at least 3 of them to collaborate outside the school. Another weakness concerns the work tool: in fact, though they all have a mobile version, *Powtoon* seems difficult to be managed on small devices.

## 7. Discussion and conclusions

This paper reports on the experience of massively introducing technological devices for learning History, adopting as methods:

- Holistic Flipped Classroom as a concrete way to create participatory, synchronous and asynchronous teaching and learning environments through platforms (Ozdamli & Asiksoy, 2016). The use of the platform was crucial to this experience as students perceived a shorter distance during Covid lockdowns, got to know each other, and collaborated effectively in meaning-making and active learning during task-based activities and their participatory evaluation. It enabled continuous peer feedback at distance in highly communicative environments (Liu, 2019) and confirmed that it is absolutely student-centred, giving the teacher the role of scaffolding, who adopts questioning feedback, and creates the conditions for productive and inclusive classroom interaction. (Ozdamli & Asiksoy, 2016).
- Digital Storytelling, activated the learners' construction of meaning, thus leading to the acquisition of: a) critical thinking, such as decision-making, metacognition of personal paths and goals, through the concrete end products and problem solving to overcome their difficulties (Pezzot, 2016); b) creativity, which allows students to create personalised transmedia products to share with their peers on the web as learning resources, such as prosumers, as used in social media. (Rodríguez & Bidarra, 2014).
- Gamification, which not only supported students' learning in an engaging and enjoyable way and motivated them, which is central to the subject of history (Faith, Kumalija, & Sun, 2019), but also made them feel like they belonged to the same classroom by competing with each other, even though they were not together.

Reflecting on the results, the following may be a timely consideration. For decades, from European Directives (e.g., Redecker, 2009) to researchers around the world (e.g., Gee, 2014), there have been calls for a profound change in schooling that aims at achieving concrete skills and digital literacy rather than theoretical content knowledge. But, are teachers aware of this opportunity? Probably, our period of lockdown has not led most of them to this awareness, and the Internet might often still be used for teacher-centred online lessons (Giovannella et al., 2020). Therefore, aiming at the acquisition of 21<sup>st</sup> century skills for students, it might be wise to train teachers in the pedagogical use of the often banned-in-school mobile phones, but also of devices in general, as long as students make constant use of them, although not in education at school. This is why lifelong learning, which is closely related to learning to learn and learning by doing, should be intended firstly for teachers and then addressed to students.

Certainly, this experience, which maybe was not unique in the past school year, had the purpose of changing the way we spend time in school, as it brought back a certain level of sociability among students who were and are stressed by the lengthy physical distance, but who also demanded new methods and ways of learning (Kay & Greenhill, 2011). In particular, the transition from one course of study to another (i.e., lower Secondary to upper Secondary), as in the classroom of this intervention, caused anxiety, depression and difficulty among students. Indeed, some studies reported that students

had achieved lower than expected results in terms of content knowledge, engagement (crucial for active participation and meaning-making), and communication within the educational world, due to the physical distance imposed by governments (Ardan et al., 2020; Buzzi et al., 2020; Cellini et al., 2021; Smirni et al., 2020). This condition affected the development of 21<sup>st</sup> century applied skills which require high levels of communication and collaboration, apart from learning by doing (Baloran, 2020; Giovannella et al., 2020).

So, according to the results, this project can be considered largely positive as the students appreciated it, but, most importantly, the results were higher than expected. In fact, it was considered as an experiment that brought together integrated active methodologies and students' devices, in the awareness that mobile-phones particularly do not usually support classroom learning, even when it concerns FLs—the best documented area (Chen et al., 2017). However, this trial has produced important results, to the point that it would be appropriate to further consider through other applied research whether mobile-learning can support a new way of implementing History, since it is the main way for students' communication and information research.

Students did indeed recognise a democratic learning environment, though physically distanced from one another, where they participated in choosing their favourite device by engaging in non-mainstream lessons, in which they were truly the main characters in their construction of meaning. Consequently, this can be pointed out as a great result as well, which makes students prosumers of the *participatory culture* (Jenkins et al., 2006) to which this generation belongs, but which too often only takes place outside our schools. Only the recognition of classrooms as democratic teaching and learning communities can bring about real change for shared lifelong learning. Recent lockdowns have taught that communication is always possible, though through new paths, new didactics, and new tools that place more value on developing students' skills, especially learning to learn, for which they must use the ways to which they are accustomed, namely mobile-phones, their social learning assistants.

A special emphasis should be placed on assessment. The introduction of the Holistic Flipped Classroom through the use of online platforms where students upload their work and are continuously monitored and also self-assessed. Some examples are Digital Storytelling, which gives them concrete feedback on their personal learning journeys; Gamification, with competitions and personal scores, they all address students to consider the positiveness of evaluation moments. The parameters of narrative assessment were shared and well accepted from the start, as it was clear to all that they would encourage good end products, which they did. However, the greatest strength was that students demonstrated low affective filters when assessing their classmates' products, creating an effective participatory learning environment. There is also a limit to their assessment of each other related to the fact that they were in the initial stages of the class and therefore not able to progress to metacognition of their skill acquisition, which is a goal of the triennium in the curriculum.

Finally, it seems worthwhile to deepen this lesson in order to accompany the students in this century and not force them to be only an uncritical audience for the teachers. All in all, covid-lockdowns have brought teachers closer to students' ways of learning and it is a road of no return, focusing on the great goals for the entire educational community, in terms of new methodologies and new tools and strategies that teachers need to acquire, to help students develop the skills they need for living in this 21<sup>st</sup> century.

Concluding, it should be said that the positive results reported here should be further explored and related to broader studies concerning the adoption of several integrated methodologies together with technological devices for History teaching and learning, to be sustained through applied research.

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