

# IMPLEMENTING FLIPPED CLASSROOM IN HISTORY: THE REACTIONS OF EIGHTH GRADE STUDENTS IN A PORTUGUESE SCHOOL

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## ***Abstract***

*Despite the difficulties of integrating every student, every teacher and every school in the digital revolution of the 21st century, there are new tendencies in education using digital technology that are trying to change the everyday life in schools.*

*The Flipped Classroom is one of them. This is a blended learning model that reverses the traditional teaching learning model, putting the student in focus, using digital technology (or not) to learn the contents for homework, usually in small videos, and spend the class time in the application of resources, usually in motivating activities.*

*Following this path, this paper is the result of a case study that we performed in the school year of 2015/2016, with about 80 students, with average ages of 13, in the classroom of History.*

*To complete this experience, we planned an inverted History class, pursuing the main ideas of this methodology, using apps installed in the students' personal mobile phones and asking students to develop some activities during the class and after the end of class time.*

*The outcome of this case study aims to be a contribution to the idea that Flipped Classroom can be an innovative strategy that reinforces the dialogues between Historical Education and the use of ICT, as well as an original and well-succeeded methodology in History teaching.*

**Keywords:** History Education; History Teaching; Flipped Classroom; Mobile Learning; Bring your own device (BYOD); New Information and Communication Technologies (NTIC).

## **Introduction**

This work is the outcome of a case study applied in the school year of 2015/2016 in three 8<sup>th</sup> grade classes, of the 3<sup>rd</sup> cycle of Portuguese Basic Education, in

the teaching of the subject Portuguese Liberal Revolution, implementing the teaching methodology and principles of the Flipped Classroom (FC), allied to the possibilities of Mobile Learning in classroom situations.

This paper is divided in two parts. The first one defines the concept of FC, its advantages and limitations. The second part presents a flipped History class, the way it was prepared and taught in three classes using apps installed in the students' personal mobile phones and we analyze the students' opinions, gathered at the end of the experience through a survey.

Through this case study, we were able to answer some important questions, such as:

- How can we implement the FC in History learning?
- Is the FC an active and motivating methodology for History learning?
- What are the students' opinions about the Flipped History Classroom?

This paper also shows how a History teacher can explore and use a relatively recent kind of teaching and learning methodology in History that showed itself, in this case study, as a creative, vibrant and efficient way to improve History learning. It also showed how teachers could use new 21st century technologies, especially the mobile applications, to engage students in the learning of History and to pursue efficiency in the teaching of History.

### ***The Flipping Revolution***

Steven Neshyba's expression – *Flipping Revolution* – is considered one that best reflects the changes inherent in the application of flipped classroom methodology in teaching, which changes the traditional model of education (Neshyba, 2015).

Studies on flipped classroom methodology have registered an evident growth in the last years, as the work of Robert Talbert shows (Talbert, 2016). The Talbert's statistic studies based on the number of peer-reviewed articles on flipped learning research between 2000 and 2017, using the search keywords "inverted classroom", "flipped classroom" and "flipped learning", showed a progressive increase of articles about these subjects, particularly from 2011, while its biggest increase occurred after 2014.

The concept of FC was first presented in 2000 by J Wesley Baker at the 11th International Conference on College Teaching and Learning. In the same year, an article by Lage, Platt, & Treglia about an experience of an inverted class in the discipline of Microeconomics at the University of Miami was published in

the *Journal of Economic Education*. In 2006, Jonathan Bergman and Aaron Sams applied this methodology in Chemistry in the US at Woodland Park High School.

In 2012, a non-profit organization was created: the Flipped Learning Network<sup>1</sup>, which is a repository of literature and resources for those who wish to learn more about this methodology.

Although most of the studies focus on subjects such as science, technology, engineering and mathematics, some works also appeared in the areas of humanities. Some of the papers that stood out during the last few years with regards to History and the Flipped Classroom are:

- Gaughan, JE 2014. *The Flipped Classroom in World History*;
- Zhao, Yiran & Ho, Andrew 2014. *Evaluating the Flipped Classroom in an Undergraduate History Course*;
- Rolo, C 2015. *Flipped Classroom: Educating for the 21st century in Portugal's History and Geography*.

In the last years, a website<sup>2</sup> dedicated to the flipped classroom in History has also appeared.

The recent character and multiplicity of theories and practices surrounding the flipped classroom still give rise to much controversy as to its usefulness and potential. Despite this, there is a common idea: the inversion of the traditional relationship between students and learning. The flipped classroom proposes that students, instead of being passive receivers of the knowledge transmitted by teachers in theoretical and expository classes, have access to the contents before the lesson. This allows the students to adjust their study in an environment that is familiar and favorable to them.

On their own time and space, students can read written materials, view teaching videos or listen to podcasts prepared and provided previously by teachers, and the contents and knowledge acquired can be mobilized in the classroom to solve problems, discuss significant issues or develop group work. Later, again outside the classroom, students can develop projects that allow them to consolidate learning and allow the teacher to evaluate them. The great “Flipping Revolution” consists on the inversion of the central focus of learning that is no longer the teacher, the source of knowledge, and becomes the student, the builder of his own learning.

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1 Flip Learning Board, 2012. (available at <http://flippedlearning.org/>, as accessed on 15 February 2018).

2 Anon., n.d. (available at <http://www.flipped-History.com>, as accessed on 15 February 2018).

Likewise, the times and goals of a traditional class are also changed. The class becomes a moment of practical, motivating and challenging activities, once the students have prepared and acquired the necessary knowledge to carry out the proposed activities.

On the other hand, research and project work, which were traditionally understood as homework, are now transferred to the classroom space.

Bergman and Sams (2012:15) also present the differences between a traditional class and a FC in terms of time management, as can be seen in the following table:

**Table 1: Comparison of class time in traditional versus flipped classroom**

Traditional Class		Flipped Classroom	
<i>Activity</i>	<i>Time</i>	<i>Activity</i>	<i>Time</i>
Warm up activity	5 min.	Warm up activity	5 min.
Go over previous night's homework	20 min.	Question & answer time on video	10 min.
Lecture of new content	30-45 min.	Practical and independent guided and/or lab. activity	75 min.
Practical and independent guided and/or lab. activity	20-35 min.		

Source: Bergman & Sams, 2012:15.

In this comparison of a 90 minutes class, the main changes are:

- The elimination of the periods of long speech by the teacher in the flipped classroom, since this was done before in the materials prepared and made available by the teacher.
- A considerable increase in the time devoted to practical activities guided by the teacher, which goes from 20 to 35 minutes in the traditional classroom, to 75 minutes in flipped classroom. This dialectic is essential for the realization of the ideals of learning in which the student, by solving problems, is actively structuring his own knowledge.
- The reduction of the time dedicated to the clarification of the doubts, since the clarified doubts are not related to the previous class, but on the contents that are going to be worked on in the following practical activities. In Teixeira's (2013:13) point of view, the added value of the flipped classroom method is not the videos themselves, but the time in classroom space that both teachers and students will have at their disposal to build and consolidate learning.
- The use of new technologies, mainly the digital and online ones, since the cloud allows to store in any device, fixed or mobile, the knowledge and activities that can be accessed anytime and anywhere.

According to the Flipped Learning Network (2013), Flipped Learning is based on four essential pillars. The first pillar being *Flexible Environment*. In a flipped classroom teachers can adopt several types of learning, gathering the learning needs of each class and each student. Teachers can change the physical structure of the traditional classroom, which arranges the students' desks in front of the board and the teacher, and may choose a different organization that makes group work or different types of individual activities easier.

The second pillar of *Learning Culture* in a flipped classroom is a new way of understanding teaching, since the teacher is no longer the main source of information and knowledge that makes him/her the main character of the learning process. Opposed to this idea, in the flipped classroom, the student becomes the leading character, since he becomes the constructor of his learning, counting on the teacher's orientation to learn and explore the subjects under study in a deeper way.

*Intentional Content* as a third pillar in a flipped classroom refers to teachers need to think and define in a very careful and conscious way the themes and contents that will be presented and explored with the students. Lesson planning is essential to determine what should be explored in the classroom and what students should consider at the time of self-study. Teachers use intentional content to maximize time in the classroom and adopt models focused on active learning, according to the level of depth of the topics covered.

*Professional Educators* as the last pillar in a FC, emphasizes the relevant important role of the teacher. Although this teaching methodology focuses on the student, it is the teacher that determines what students learn in the classroom and how it happens, following its role as a facilitator/guide of the process. On the other hand, he/she has a key role as an observer of students' reactions, and it is up to him/her to analyze the students' constant feedback, interfering whenever necessary to clarify doubts, which confirms the idea that the teacher continues to have a key role in the effective running of FC's.

An ideal flipped classroom is divided into three great moments (Bergmann & Sams, 2012):

<b>Before class</b>
• Students watch video-lessons provided by the teacher.
• Students learn new knowledge autonomously and have questions.

<b>During class</b>
<ul style="list-style-type: none"> <li>• Students cooperatively solve activities/challenges put by the teacher.</li> <li>• The teacher clarifies questions, provides feedback and assesses learning.</li> </ul>
<b>After class</b>
<ul style="list-style-type: none"> <li>• Students perform activities/challenges to apply knowledge.</li> <li>• It implies a change in the process and in the traditional spaces of learning.</li> <li>• It is a model based on the use of Information and Communications Technology (ICT) in the process of teaching learning.</li> <li>• It changes the focus and mode of transmission of knowledge.</li> <li>• It is an active pedagogical and didactic model, centered on the student, in solving problems and promoting cooperative work.</li> <li>• The teacher assumes him/herself as a guide and facilitator of learning.</li> </ul>

Based on these principles we can conclude that in the flipped classroom methodology, students are expected to continue the home-based learning process during and before the lesson, demonstrating mastery of the goals for which they should work as hard as the teacher (Bergmann & Sams, 2012).

Therefore, the flipped classroom methodology implies a change in the process and in the traditional spaces of learning. It is a model mainly centered on the use of ICT in the process of teaching and learning that has had many consequences in the focus and process of the transmission of knowledge. FC is also an active pedagogical and didactic model, which promotes cooperative work in solving problems.

A FC offers many possibilities, but there are also many disadvantages, e.g. (Herreid & Schiller, 2013; Keene, 2013): Many teachers offer resistance to new teaching strategies, including FC, with doubt and mistrust. It is idealistic to expect that taking ICT into schools will result in transformational learning experiences without also providing teachers with the training and support necessary to apply new strategies. Some students are also not comfortable with the use of ICT. It cannot be ignored that students have different learning styles and may prefer in class lectures over videos or other digital media

Another big disadvantage happens through all stages of education and is associated to the problem that occurs when a student does not do the homework as Kachka (2012:2) remarks: “As long as there has been homework, there have been students who fail to complete homework and simply show up for class unprepared”.

Another issue concerns the student access to technology. While a majority of Portuguese public schools provide internet access to their students, the quality of that access is also low in the majority of schools, independently of their location.<sup>3</sup> The same idea is valid when we look to the home conditions of the common families: the lack of parental support and the difficult access to the internet or mobile devices cannot be overlooked.

### ***A Flipped Classroom of History***

This experience occurred during the 2015/2016 school year, in a Secondary School, within the scope of the History subject discipline, in three classes of the 8<sup>th</sup> year of the 3<sup>rd</sup> cycle teaching, with the same History teacher, and involving 83 students with an average age of 13.

It is also necessary to mention that the students involved in this case study had never participated in a flipped classroom, neither in the class of History nor in any other class. Neither had they been allowed to use their mobile phones and other mobile devices in the classroom context before this school year, in this subject.

Before applying the flipped classroom to the three classes involved in this case study, as a procedure of diagnosis, we conducted a survey with students to ask what they thought a flipped classroom was.<sup>4</sup>

The students' answers were diverse. Many stated that they did not know what it was. Some students following the logic of the word flip wondered if we were going to put the classroom upside down. Other students, curiously, asked if they were going to prepare and give the class instead of the teacher.

This flipped History classroom was developed in several steps: the lesson planning; the selection and/or the creation of the digital resources needed for the class; the application of the learning strategies defined and the analysis of the students' opinions collected at the end of the flipped classroom.

### **The Lesson Planning**

Underlying the principles of FC (Bergman & Sams, 2012: 15), Mobile Learning and BYOD (Bring your own device), the research project began with the design of a flipped History lesson planning, which is presented in Appendix 1.

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3 "Portugal: Escolas com PCs velhos e acesso à Internet lento" (available at <https://pplware.sapo.pt/informacao/escolas-pcs-velhos-acesso-internet-lento/>, 12 March 2018, as accessed on 22 May 2018).

4 We also assured that all students had mobile devices to work with (at least, one device for each pair of students) and internet access at their house (they could also use the computers in the library of the school, if necessary).

The subject selected for this class was *The Political Evolution of Portugal: From the French Invasions to the Triumph of Liberalism*. This content was chosen for two main reasons. In the first place students already had previous knowledge about the affirmation of liberalism in other countries, since they had already studied the American and the French liberal revolutions. Secondly the students had already approached this topic in the subjects of Environment Studies in the 4<sup>th</sup> year of the 1<sup>st</sup> cycle of Basic Education and in the subject of History and Geography of Portugal in the 6<sup>th</sup> year of the 2<sup>nd</sup> cycle of the Basic Education.

The planning presented the challenge of the lesson and the guiding questions; the identification of the curricular goals (contents, concepts, general ideas and descriptors); the choice of the best suitable learning strategies and the main digital resources and apps needed for its application; as well as the establishment of the assessment methods for the class.

### ***Materials given to students before class***

Four videos were selected to send to students before the class:

- The French Revolution (1:38 min.)
- Brazil's independence process (1:44 min.)
- The liberal revolution of 1820 (2:08 min.)
- The absolute monarchy returns (1:31 min.)

This selection tried to pursue some aspects such as the duration of the videos, the scientific quality of the content and the existence of the final synthesis of the contents in them.

Given the innovative character of the experience (it was the first time that they had a flipped classroom and they were not used to watch and learn by themselves from videos), we also provided a PowerPoint presentation that explicitly systematized the essential contents, as well as mentioning the adopted textbook pages where the contents of the lesson were.

### **Learning Strategies:**

For this Flipped History Classroom there were outlined learning strategies closely linked to the ICT's that implied the use of the mobile devices during the class, according to the principles of mobile learning and the ideas of the BYOD.

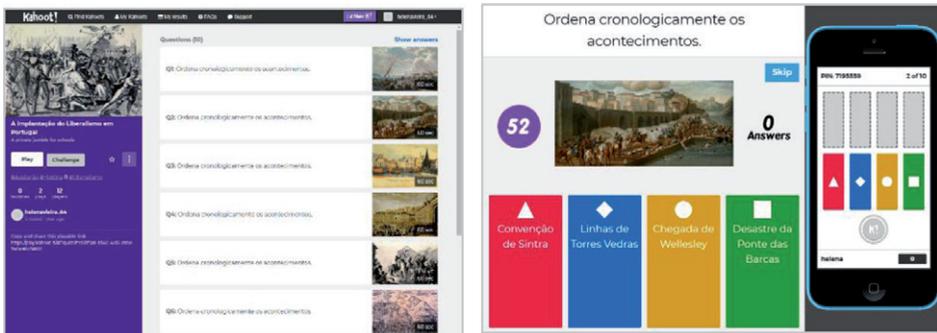
The first learning activity was an initial motivation/warm up that consisted in the observation of an animated video entitled "The incredible History of the

Lines of Torres Vedras” about the causes and consequences of the Napoleonic invasions to Portugal. After they watched that, there was a dialogue about the contents presented in the animated video and the videos sent previously.

The first practical activity proposed was the construction, in small groups, of a timeline with the remarkable events of the political History of Portugal between 1806 and 1820, using the mobile application “Timeline Rwt” on the students’ mobile devices.

The next activity was the playing in small groups of a game/quiz, using the “Kahoot” application (<https://kahoot.it/>),<sup>5</sup> about the Liberal Revolution of 1820 and the implantation of liberalism in Portugal. This strategy had several intents – it was a way of motivating the students, to make them learn and assessing their knowledge.

### Images 1 & 2: Examples of questions using Kahoot

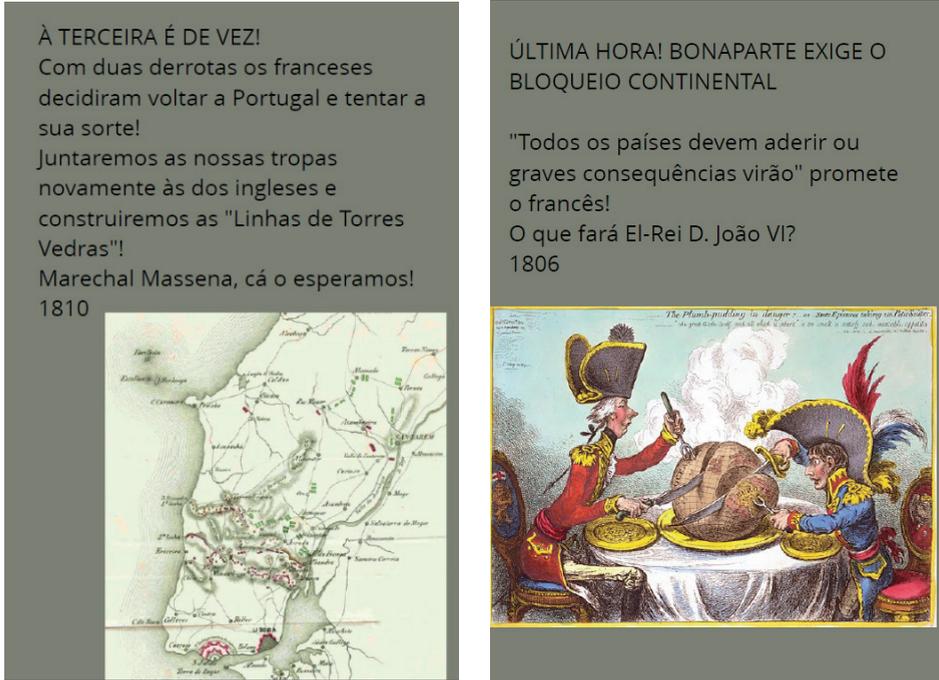


Source: <https://kahoot.it/>

After the class, the construction of a small e-book was proposed, using the “Book Creator” application (<https://bookcreator.com/>), which should include small stories referring to the main historical events addressed in the class. This e-book should be presented to the class in the following lesson.

5 “Kahoot” is a fun learning game made by a series of multiple-choice questions.

### Images 3 & 4: Examples of pages made by students using Book Creator



Source: <https://bookcreator.com/>

### Three classes, three different experiences

In this case study, the same teacher taught the same lesson to three different classes. However, the students' reactions and the results obtained were very different.

In *Class A*, constituted by 28 students, it was evident that most of the students worked individually on the materials previously provided. Throughout the class, the students were motivated and actively involved in all the planned tasks and they were able to fulfill all the challenges proposed. In this class, the planning was completely accomplished, without any type of behavior or evidence of indiscipline and the students showed themselves at ease in the performance of the proposed tasks.

The students of this class were very committed to the work after class, which was presented with enthusiasm in a very original way. Following the inverted class, the students were so motivated for the subject and the theme that they proposed to the teacher to carry out other activities. Extremely original works have emerged from the students' initiative, such as creating a video with a

guided tour of a museum created by the students, recording a dramatization and creating a PowerPoint Quiz.

In *Class B*, constituted by 28 students, only twelve students worked individually on the materials provided.

In this class, there was a technical problem since the school internet was not available, an aspect that created diversion and demotivation in some students. However, this did not make the course unfeasible, since that all activities, except the Kahoot activity, could be performed offline. Although the students carried out all activities in an energetic way, the planning was not fulfilled, because, as previously mentioned, the game/quiz Kahoot was not completed. This happened in the following class, since the wireless internet of the school was then available.

Despite the low commitment of the students of *Class B* to the after class work, ten students produced original and historically accurate works using the Book Creator. This aspect made us think that, even though they were not very interested in doing what was planned for the lesson, they considered the final activity stimulating and worthy of doing it.

In *Class C*, constituted by 27 students, 25 students did not individually work through the materials provided at home, which is why they were clearly not prepared to carry out the planned and proposed activities. On the other hand, about half of the students did not take tablets or smartphones to class due to forgetfulness and/or temporary deprivation, which clearly conditioned the lesson. Nevertheless, students were involved in the proposed tasks, although there were two cases of use of smartphones for other purposes than those of the class. Their smartphones were temporarily confiscated as a punishment for their behaviour. The students showed little investment in the work and in this class, but the planning was accomplished. The students in this class did not show any commitment to the work after class and only two students built the e-book.

### ***The reactions of students to the flipped classroom***

In order to know the students' opinions regarding the flipped classroom experience, we applied a survey using the Google Forms application at the end of the lesson.

The first question was: "Did you study at home with the materials provided?" From the answers to this question, it was concluded that of the 83 students

involved in the study, only 42 (50.6%) stated that they had previously studied the contents at home, confirming what had been evident during the lesson, highlighting here the honesty of most students' response to the question. *Class A* was the most committed and *Class C* was the least.

The second question sought to know the type of study materials preferred by students. From the responses of the students who said they had studied the materials sent (42 students), the preference for the videos and the PowerPoint presentation was emphasized, with 20 students preferring each of the materials. However, the distribution of the answers per class raises interesting aspects. The *Class A*, which showed greater commitment and enthusiasm in all the steps of the flipped classroom, chose the PowerPoint presentation as the preferred material of study, while the students of *Class B*, which presented medium results, preferred the videos.

The third question aimed to know which activities carried out in the context of the flipped classroom were more motivating. In the responses it was evident that the majority of students involved in this study preferred Kahoot, a naturally understandable option given the playful and competitive character of the game. It is also emphasized that the activity that motivated the students the least was the creation of the timeline, and it should be noted that all the students that pointed this answer belonged to *Class A*. We think that *Class A* was not very impressed with this activity because, comparing with the creation of the e-book that they had to do as a final "masterpiece", it was much more creative and inspiring than the timeline that was experienced as less stimulating.

The fourth question wanted to understand if the students considered the flipped classroom as an effective practice of learning.<sup>6</sup>

Interestingly, the results obtained show a great division between students, although there is a slight preference for the flipped classroom (51.1%).

The fifth question asked the students to express their opinion about the FC. From a content analysis of the answers obtained, it was evident that the students characterized this type of class as interesting, fun and different. Although most of the answers to this question have been succinct, using the adjectives previously mentioned, some students present more elaborated answers that allow us to draw some interesting conclusions. Some of the learner comments at the time of the research being done were:

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<sup>6</sup> We should clarify that, per usual lesson, a socio-constructive class requires active participation of students in the systematic analysis of historical sources and in the construction of historical knowledge. The teacher presents and works the contents, occasionally sending works of synthesis of knowledge for homework.

*I liked it because I think it is an interesting process, it is easier to work with the smartphone because anything I do not know I will see on the web.*

*It was cool because we had another kind of interaction. We were not so clingy to the books, we had more communication between the students.*

*I thought it was a very interesting class. I had never done and I wanted to do it again.*

*I liked it but I prefer the other classes because with the teacher, I listen to him/her and I understand the subject better. I can write what the teacher says and then it is easier to study for the test.*

*On the one hand, I liked this class because we learnt in a more fun and “easy” way and, on the other hand, it is not good because most of the groups do nothing and sometimes in the Kahoot is a matter of luck.*

*I found it interesting but I like the lessons with PowerPoint because the teacher explains better and we get better understanding. Mobile phones are useful if it is for activities or tasks, but not always.*

## **Conclusions**

From this case study and the opinions of the students gathered, we were able to draw some conclusions. We concluded that FC is a strategy that can motivate students, but it is still a pedagogical and didactic model under construction. This teaching-learning process also requires an efficient and rigorous work of the teacher in order to promote the real autonomous study of the students.

The FC implies that the teacher carefully selects the contents to be addressed; creates a set of resources to provide students and develops practical activities (preferably) using ICTs.

From this case study, we concluded that this methodology could present different results depending on the performance of the classes in which they are performed, and that larger studies is needed to be done to get conclusions that are more feasible.

However, the results of this experience confirm that FC is an innovative strategy that reinforces the dialogues between Historical Education and the use of new technologies and mobile learning principles. It showed itself as a creative and different methodology in History teaching in which the teacher can test different and creative ways to teach, in order to improve History learning.

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## Appendix 1: Planning of the Flipped History Classroom



### A Flipped History Classroom

#### Step 1 - Planning

<b>Subject:</b> History		<b>Grade:</b> 8 <sup>th</sup>	<b>Duration:</b> 90 min
Domain: 7. The start of the "Industrial Revolution" and the triumph of conservative liberal regimes			
Subdomain: 7.2. Revolutions and Conservative Liberal States			
Summary: From the French Invasions to the Liberal Revolution of 1820			
Challenge: It was urgent to establish Liberalism in Portugal!			
Guiding Questions: - Why did the French invasions take place in Portugal? - What were the consequences of the French invasions? - How was the introduction of liberalism in Portugal?			
Curricular Goals			
Contents / Concepts	General objectives/ Descriptors	Learning Strategies	Resources / Apps
<b>Contents</b> The Political Evolution of Portugal: From the French Invasions to the Triumph of Liberalism  <b>Concepts</b> - Continental Lock - Political Liberalism	General Objective 2 - To know and understand the evolution of the political system in Portugal  Descriptor 1 - To present the Portuguese political situation immediately before and during the period of the French Invasions, especially the withdrawal of the court to Rio de Janeiro and the strong British presence, relating it to the outbreak of the Revolution of 1820.  Descriptor 2 - Characterize the political system established by the Constitution of 1822.	1. Initial Motivation Observation of an animated video about the French invasions of Portugal, their causes and consequences.  2. Vertical and horizontal dialogue on the contents present in the video.  3. Construction of a timeline on the striking events of the political history of Portugal from 1806 to 1820 (group works).  4. Application of a game / Kahoot quiz about the liberal revolution of 1820 and the implantation of liberalism in Portugal (group works).	- Youtube   - App RWT Timeline   - App Kahoot 
			Assessment
			- Registration of interest, participation in the dialogues and commitment of students to the tasks proposed  - Evaluation of the Timelines built by students  - Record of the results obtained by students in the Kahoot