

## **Exploring the Potential of Game-Based Learning in History Teaching**

**Angelica Spreen  
Omaha South High Magnet School**

**Phu Vu  
University of Nebraska at Kearney**

### **Introduction**

Getting students to be excited to learn about history and actually retain historical knowledge in each lesson is always a challenge to most history teachers (De Oliveira, 2008; Marcus, Stoddard & Woodward, 2017; van Hover & Yeager, 2004). To address this challenge, researchers and educators in teaching and learning of history have advocated and experimented innovative instructional approaches that can engage students in the process of “doing history,” including scaffolding historical knowledge through the use of primary sources, conducting historical inquiry and encouraging them to think historically (Barton & Levstik, 2011). Among those approaches is game-based learning (GBL). GBL is an approach to teaching, where learners explore relevant aspects of games in a learning context designed by teachers. Learners can collaborate and/or compete with each other to add depth and perspective to the learning experience while playing the game (Shapiro, 2014). GBL implementation in classrooms have been reported to help increase students' academic performances (Burguillo, 2010; Hwang & Chen, 2012; Sung & Hwang, 2013), and raise students' motivation (Filsecker & Hickey, 2014; Hamari, Shernoff, Rowe, Collier, Asbell-Clarke & Edwards, 2016; Schaaf, 2012).

In the realm of history teaching and learning, GBL has also been adopted at different levels with many promising results. In their study examining the use of GBL to teach sophomore high school students in a rural state in America about World War II, Watson, Mong and Harris

(2011), found that the use of the GBL resulted in a shift from a traditional teacher-centered learning environment to a learner-centered environment where the learners were much more active and engaged. Taking a different research approach, Yu, Yu, Fan, and Wang (2014) conducted an experimental study to compare students' performances with and without GBL in history in a high school in China. The researchers concluded that students who learned history under GBL obtained significantly greater learning achievement than their peers without GBL. In addition, they were significantly more motivated by GBL compared without GBL. Given the evidence-based merits of GBL in classrooms in general and in history teaching in particular, GBL should have widely been adopted in classrooms by history teachers. However, as revealed by educators and researchers (Epper, Derryberry, & Jackson, 2012; Fudin, 2012; Gershenfeld, 2011; Miller, 2014; Vu & Feinstein, 2017), teachers' competences to design GBL activities, especially digital and/or video games, was one of the biggest obstacles to applying GBL into the classroom because most of the game-creating platforms and/or programs require users a certain amount of coding skills and/or knowledge to be able to create a game applicable to classroom use. Take the two studies by researchers in America and China for instance, both of them used video games. One of which was designed specifically for a particular history lesson. It would be beneficial if every history teacher could afford and/or access those GBL resources to make their lessons more engaging. The reality is, however, that not every teacher could do so. To that end, instead of creating a new digital or online game for our history lesson, we approached GBL to teach history using a more traditional paper-based non-gaming format to examine whether it could also help motivate students and improve their performances. Specifically, we adapted the game "escape rooms" to teach high school students how to find and analyze two primary source

documents for the Industrial Revolution/Imperialism, the World Wars, and the Modern World in history classes.

### **Game Description**

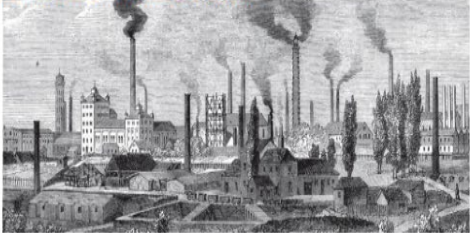
The game "Escape rooms" was originally introduced in Japan about 35 years ago, and have recently become a popular and worldwide phenomenon particularly in Asia, Europe, and North America. Essentially, "Escape rooms" is a type of live action, team-based games where a small group of players attempts to discover clues, solve puzzles and accomplish tasks to escape from an area in a limited amount of time (Nicholson, 2016). With the advance of technology, especially the virtual reality, "Escape rooms" is often adopted as a "Virtual Escape rooms" where players can see and explore the areas or regions virtually. For our GBL lesson, we created a game called "Escape the Industrial Revolution", a virtual escape room game using Microsoft OneNote. Students received a paper copy of the primary source document, a Document Analysis worksheet (created by The National Archives and Records Administration). They would work in groups of three or four to read through the information and answer the questions. The game and primary source documents used were based on the unit the students just finished, the Industrial Revolution. They were introduced to four different important and well-known locations in Victorian England. The purpose of these four locations was that each one showed at least one Human Rights issue that students could choose when they started looking for their own Primary Source documents (day 2 of this project).

In order to win the game, students would have to "travel" through four important locations that played a vital role during the Industrial Revolution in the United Kingdom. As they "traveled" through these important locations, they would be learning about the different steps and answer the questions found on their Document Analysis Worksheet and by the end of the game,

they would be an expert at Analyzing Primary Source Documents. Below is a screenshot of the game description and instruction for students.

Figure 1

*Screenshot of the Game Description and Instruction for Students.*

Rules	Rules to play the game
Workhouse	<p>Welcome to the start of your Junior year RSP. The purpose of the RSP project is to look at how Human Rights issues has changed over the last 200 years. You will use Primary Source documents from Unit 4:Industrialism/Imperialism, Unit 5: World Wars (I &amp; II), and Unit 6: Modern World as evidence to complete your final project.</p> <p>Before you can look at the evolution of human rights, you must first learn how to analyze a Primary Source documents.</p> <p>To do this you will be participating in a group activity (3-4 people/group). You will be given a Document Analysis worksheet and a print out of a Primary Source document from our first unit that covers children working in the factories during the Industrial Revolution.</p>  <p>The game you're playing is a virtual escape room called "Escape the Industrial Revolution". To win the game you will have to travel through four important locations that played a vital role during the Industrial Revolution in the United Kingdom. As your travel through these important locations, you will be learning about the different steps and answer the questions found on your Document Analysis worksheet and by the end of the game you will be an expert at Analyzing Primary Source Documents.</p>
East End	
Coal Mines	
Textile Factories	
Escape	
teacher notes	
+ Section	

In addition to the instructional hand-out, the following Open Educational Resource-based materials were included: Primary Source document, Document Analysis Worksheet, and Document Analysis Worksheet (ESL version)

### **Game Implementation Description**

As high school students taking World History, the school district requires that the students complete an inquiry-based project that shows their understanding of how human rights issues have evolved over the last 200 years. To accomplish this goal, students would select a human rights issue, find and analyze two primary source documents showing different perspectives on this issue during the last three units of this project. For the student's final, they

would use the two documents they analyzed for the Industrial Revolution/Imperialism, two from the World Wars unit and two from the Modern World unit to write a paper showing how these human rights issues have changed throughout time. After two years of trial and error, one of the researchers, who served as a co-teacher in the history classes, had discovered that although about 75-80% of the students were able to identify primary versus secondary sources, research and find primary source documents, and choose which human rights issues they wanted to research, only 35-40% of them were actually able to analyze the documents well enough to write their final paper. The idea of creating a game "Escape the Industrial Revolution", an adapted version of the "Virtual escape room" was originated from that issue to find a way to teach students while also giving them time to actually analyze their own documents.

The second step of designing an "Escape the Industrial Revolution" game was to create a storyline related to the subject. Creating and researching a storyline that was believable and accurate was the longest and hardest part of creating this game. The co-teacher in the history classes decided that the students would have to explore four different rooms because their worksheet was split into four different sections and chose four locations that were impacted by human rights issues during the Industrial Revolution. Then, she created a character, James Harris, who would be their tour guide and also someone who was believable enough to have lived through all of the horrors found during the Industrial Revolution. Finally, she found a Primary Source document that tied into the events of the game and looked at how she would analyze the document and fill out the document if she were assigned this project. She worked on this project off and on for around two months and had other teachers read it, play it and inform her of the areas where it may be difficult for the students to do. The students were allowed to choose their own groups as long as they followed the guidelines of no more than four players per

group and that all students would have to write out their answers on the document analysis worksheet. The students agreed and they spent the first day working on this. About 90% of the students were able to escape all four rooms by the end of the 40 minute class period.

### **Classroom Description**

The school has a mainly Hispanic student body with 80% Hispanic, 6% African American, 9% white, and 5% other (Asian, Native American, mixed race). Eighty six percent of the students have free and reduced lunch. The school has student immigrants from 38 different countries and those students speak over 80 different languages. Eighty five percent of the students are currently in the English Language Learner (ELL) program and the school also has 783 students taking classes in both English and Spanish as part of the school's Dual Language program. The "virtual escape rooms" game was implemented in two different class settings. The first one was four dual language World History classes with a total of 100 students. All of the students in these classes came from a Hispanic background and spoke fluent Spanish and English. Approximately half of the students were still in ESL classes and were immigrants mainly from Guatemala, Mexico, and other Central American countries. The second one was a regular World History class that had 30 students, half of whom were Hispanic, two-three African American students, one-two white students and one student who was of Native American and/or Asian background. Although this was not a dual language class, most of the students could still speak Spanish and would often converse with each other in this language. Only one or two of the students were still in ELL classes.

### **Game Evaluation**

After playing the game, day two of the lesson showed us whether the game worked or not by seeing if students were able to fill out their worksheets when doing it by themselves. This was accomplished when about 90% of the students were successfully selecting their human rights topic, finding a primary source document and analyzing the document. During the first period, one of the researchers, serving as a co-teacher, did notice that while many of the students were able to answer all of the questions they were giving short answers. After pausing the class and reminding them that the information they wrote on this worksheet would be the only information they could use to write their final paper, they were filling out the worksheet with greater detail. She remembered to remind the students about this detail at the beginning of the period, for the other classes.

Day three was simply a workday where the teacher was available to the students if they needed any one-on-one assistance. The success of the game was shown when the only students who needed constant help were the students who weren't completely fluent in English. After the teacher gave them the simpler English Second Language (ESL) version of the worksheet, they were also able to complete the first part of the project. In previous years, she would spend the three days in the class constantly walking around the room and several days down in the library working with 30-40% of the students in the class one-on-one to make sure they understood the project. This year, she only had one student come down to the library to work with her one-on-one for this part of the project. Student engagement was also heightened compared to previous years. In previous years, she would often have frustrated students who would need continuous help throughout each step of the project. This year, students were excited to work in teams and

would often turn towards their classmates for help rather than raising their hand for help. This helped promote collaboration and discussion among the students as they asked each other the best way to analyze that section of the documents and suggestions for where to find their next document.

### **Game Reflection**

Based on students' performances and engagement while playing the game, we think that GBL, if appropriately adopted in history classes, could help motivate students and improve their performances. These results echo most of the previous studies' findings of the impacts of GBL on students' achievement and excitement in history classes (Corbeil & Laveault, 2011; Watson, Mong & Harris, 2011; Yu, Yu, Fan & Wang, 2014). However, while those studies examined digital or video games and students' full access to computing devices to be able to play and learn history lessons, our project focused on a type of non-digital game that teachers and students could play and learn with very limited technology competencies. Reflecting on what could be done to improve the learning activity for other classroom teachers to replicate the activity, we think that if we had more time, we would have liked to go through the answers for each section. In addition, we would probably use this game at the beginning of the school year so that students would be more familiar with analyzing, and reading primary source documents before adding the human rights component and writing a paper to it.



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