**Round 2- Data Analysis**

**History Mystery Formative Evaluation: Round 2 Results**

For Round 2, our goal was to gauge the participants' familiarity with Augmented Reality and the usability and clarity of our prototype. We conducted usability testing with three student participants. Two usability testing sessions were conducted face to face and one was conducted through a web chat. We also had the chance to speak to a 7th/8th grade teacher and asked her what she thought of the technology.

**Methodology**

As mentioned earlier, we conducted usability testing in this round of data collection since we had a revised prototype with more interactive features. The participants were:

* Zairah, 14 years old in 8th grade
* Jeffrey, 13 years old in 7th grade
* Izzy, 13 years old in 8th grade
* Mrs. Lawver, 7th/8th grade teacher

One of the usability testing that was conducted face to face was videotaped. A camera was placed behind the participant to capture the navigation on the laptop’s screen whereas the inbuilt laptop camera captured the facial expressions of the participant. The other student was shy and did not agree to be videotaped, therefore interviewer/observer took notes of the session. The third participant was interviewed through a web chat using Skype and no video-recording took place.

The interviewers provided the participants with the background of the history game. They walked the participants through the prototype before showing it to them and provided them with the background story of the history game, and introduced them to Augmented Reality. The same process was also used with Mrs. Lawver.

**Results**

The usability testing and interviews resulted in several themes to consider for the revision of our final prototype.

**Game Instructions:** The instructions of the game were not clear to the participants. One of the students was not sure whether this is a clicking game or a moving game where he needs to move to a particular location.

**Lack of interest in reading text:** One of the participants did not read through the first page that introduces the game. He simply clicked through the start button. Another student did not click on “More info” button to read more about the game. Therefore students are more interested in beginning to play the game than reading about it.

**Terminology:** Some icons seemed unclear to one of the participants. For example, the icon “list” does not represent what the student is supposed to find if he/she clicks on it.

**Familiarity with the Tool:** It was noticed that the participants’ use f iPod touch and virtual games facilitated their understanding of the Augmented Reality game.

**Adapting the game to a virtual field trip:** Although students reported that they enjoyed going on field trips and exploring, and repeatedly from round 1 mentioned that this is an interesting activity since it is field trip-based, the interviewed teacher mentioned the impracticality of field trips because they are costly, time consuming, and need much preparation. The teacher suggested if the application could be adapted to be used virtually on campus. She also reported that students have to be supervised indoors while given an expensive device like the iPhone.

**Adding voice commands**: One of the students suggested adding voice commands which give students directions while in the game.

**Implement the game during class time:** One of the students reported that she wouldn’t be interested in playing the game outside the class time. She suggested that this should be a class activity.

**Possible Revisions for the Prototype**

After conducting our usability tests, we did not uncover any major usability issues. The following are some possible revisions to consider based on feedback received during the usability test interviews:

1. Revise abstract terms such as “locate the pass, attend the party”, by providing clearer directions to students as to whether they need to go to Richmond in person and the tasks they need to carry while there.
2. Provide an easier way for students to read the text. Replace existing text with bullet points or steps with numbers.
3. Replace the icon “list” with a clearer terminology as to what the students will find while clicking on it. For example the word “Resources” could serve as a better term.
4. Consider implementing the game as part of a field trip organized by the school instead of considering it as an activity to be conducted by students on their own time.

**Limitations**

This formative evaluation has some limitations. First the number of participants is not quite enough to make major changes to the prototype. It was hard to find more participants to participate in the usability testing. The second limitation is that we were not able to conduct the usability tests on location as the actual activity would be conducted. This limited the aspects of the activity we could test such as the GPS and augmented reality feature.