

The Future

For our project, we were determined to progress through the entire design process. We were successful at completing each design phase: brainstorming, researching existing alternatives and theory, prototyping, user testing, learner testing, and finally re-designing. Our re-design is significantly stronger and more robust than the previous design. For a subsequent re-design one aspect that merits additional research, the use of audio. In order to make the audio and text more powerful and integrated, it would be interesting to investigate the effective implementation of both in a design for learning. What are the established guidelines and conditions for using audio and text together?

There is no doubt that we could continue to address and evaluate a persistent design challenge: the integration of visual literacy and history. Additional research on the intersection of the domains could strengthen the design. More space could be included to encourage students to explore how each domain influences the other. Barron suggested we investigate Sam Wineburg's work on historical cognition. Also, a review of existing interactive historical learning resources could help inform a re-design. However, the knowledge gained from extensive research on the history domain needs to be carefully incorporated into the design so as to ensure the primary focus of building visual literacy skills is not diluted.

The narrative component of the design could be developed. One suggestion raised in our final discussion was to involve the students even more in the discovery and creation of the narrative. Presenting the narrative in a debatable or open-ended manner may involve students in a more active construction of the story of the Civil Rights Movement. In this way, students would need to defend their narratives with concrete examples and clear rationale. Not only would this re-structuring of the narrative strengthen the interaction but also enhance learning.

The next phase in the design of ARTiFACT involves building the remaining lessons on the formal features and completing the story of the Civil Rights Movement. Although, we experienced periods of frustration following an iterative design process, we realize that with each iteration our design transformed into a richer product. The next challenge is to ensure that each lesson compliments and builds on the others to strengthen students' visual literacy skills.

Given the time constraints, there are several ideas that we were not able to pursue. Refining the Share and Reflect space would add another compelling element to ARTiFACT and offer another way to use technology to redefine learning contexts. Also, we wanted to address issues of digital manipulation, helping students realize the tension between the purpose and reality of images. Part of the project component, where students take their own visual narrative, involves experimenting with digital manipulation and reflecting on how changes can alter the meaning of an image. A future task could be to build an interactive tutorial on digital manipulation. And, finally, following an expert in visual literacy or the arts would add yet another dimension to the design, creating a comprehensive learning experience.

We believe that our design provides an effective and innovative way for students to build their visual literacy foundation. In designing and testing a piece of ARTiFACT, we realized the scope of our learning problem and, consequently, realized that the

entire learning problem could not be resolved with one component. In the beginning, we planned to build all six problem-based lessons but after completing one we realized our initial intentions were too ambitious. We are curious to discover if the whole experience, including all the problem-based lessons and project, are successful at building students visual literacy skills. Indeed, in our biased opinion, we think the complete design would be.