

Enhancing the Boston Women's Heritage Trail (and other History) with AR

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Challenges in Teaching History

Teaching history poses many challenges, such as:

- Students may not see the **relevance** of history, why it is important, why they have to learn it.
- There is **so much history** in textbooks! One event, one war, one century, one historical figure can easily blend into the next. This can lead to some students having difficulties in understanding the passage of time.
- Yet there are **huge gaps** in history textbooks, and **details are missing** even in what is covered. Interacting with primary sources can help to fill the gaps and engage students in their own historical inquiry.
- Students may also have difficulties **relating the past to the present**, or parallels between the past and current events.

We are exploring how new immersive media like Augmented Reality can aid with these and other challenges in history instruction.

What is Augmented Reality?

Augmented realities (AR) use mobile, context-aware devices (e.g., smartphones, tablets) that enable participants to interact with digital experiences overlaid on a physical environment.

Vision-based AR presents digital media to learners after they point the camera in their mobile device at an object (e.g., QR code, 2-D target). The virtual experience is layered on top of the real-world scene—students are still in the real world context, but getting additional information or prompts.

How Does AR Help Learning?

AR engages students both inside and outside the classroom in the wonder of anticipation, discovery, and surprise. AR helps them to reason more deeply about the subject area at the same time it broadens their thinking beyond the text or image on the page or, in our case, the inanimate, bronze statues of the Boston Women's Heritage Trail.

Using AR for learning enables students to see the world around them in new ways and aids in understanding a local context with which the students are already connected.

Free apps are now available for mobile phones and tablets that allow users to create an AR data-layer over a physical space or object, enabling teachers to foster motivation and learning by constructing augmented learning experiences for students.



Hotspot that students can access in an augmented ecosystem.
ecomobile.gse.harvard.edu

Designing ARs for History

Our design strategies are based on the challenges of teaching history.

Enriching a Historical Context

AR can add information to a place that has historic significance. For example, overlaying images, documents, or videos of things like a painting of a historical figure giving a speech to an assembly, and/or audio and a transcript of that speech, can bring in additional information about that person, object, or event.



Also, AR can help students see the connection among events or trends at the same time in history. Overlaying information like maps, newspaper clippings, or even fashion ads from around the region, country, and/or world can help tie time periods together.

Connecting the Past with the Present

Overlaying images of the past and of the present—e.g. of how houses looked then and now—can give students a better appreciation for events that occurred within, or to wonder what stories other structures could tell.

In some cases, overlaying old images on top of current, at-the-moment locations can give a student a sense of being on the spot at the time a historical event occurred:



Also, adding interactive, reflective exercises to the AR can help students begin to make connections between their lives and the historical place, person, or event. For example, after learning more about Abigail Adams from the multiple AR hot spots, students could be asked to reflect on differences and similarities between the women's suffrage movement and women's struggles today for equal rights.



Examples: Reagan's Close Call



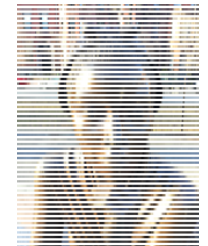
Question: how to add a history lesson to a professional conference? In 2014, Harvard students developed an AR experience around the Washington Hilton, a busy site for conferences and the site of an attempted assassination of President Reagan in 1981.

Starting the tour

A site-based AR experience led participants around the hotel, filling in the timeline of the events leading up to the assassination attempt. When participants finally turned a corner and reached the exact spot, they tapped their AR triggers and not only heard the 911 call of the shootings, but also saw an image of the chaos as the presidential limo was speeding away. It was gut wrenching and sobering. Participants said it felt eerie to be in the exact spot, to feel the magnitude of the event. History teachers saw the potential for their own students—not for such traumatic events, probably, but for letting the technology help bring to life history in their own school or town.

Try it Out!

Download the Aurasma app to your phone or mobile device, open the app, and hover over the pictures below.



Tips for Getting Started

Platforms:

- ARIS: <http://arisgames.org/>
- Aurasma: <https://www.aurasma.com/>
- FreshAiR: <http://www.playfreshair.com/>
- TaleBlazer: http://education.mit.edu/portfolio_page/taleblazer/

Design:

- Determine your learning objectives
- Select the overlays. For example, identify public domain historical images and/or videos.
- Select the triggers. For example, take pictures of the historical site, image, etc.
- Create the AR
- Consider ways to add reflection to the AR.
- Pilot
- Implement
- Evaluate outcomes
- Involve your students in creating ARs

The Team

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Boston Women's Heritage Trail

With National Women's History month now celebrated in March each year, schools are filling gaps in their history textbooks with their own women's history curricula, both in and out of classrooms. To help schools in the Boston area engage in the rich offerings just a walk or subway ride away, Harvard graduate students and we set out to enhance the Boston Women's Heritage Trail (Trail) with AR. This walking Trail passes by statues, murals and paintings, gardens, and buildings, all with a relationship to women influential to women's suffrage, the anti-slavery movement, literature, art, philosophy, philanthropy, and more.

Through mobile devices such as smartphones and tablets, the goal of the AR experience is to provide Trail visitors with information bringing additional and engaging context to the women being honored. Our purpose is to establish relevant connections between women of the past and present, with an eye to the future.

