

Mezclado: History of our Neighborhoods in Augmented Reality

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Abstract: We held two years of community meetings where we iteratively designed and prototyped a community augmented reality app. We aim to reimagine two neighbourhoods to overcome stigmatization and change the perspectives. This design objective motivates our augmented reality history app.

Introduction

Experiences outside the classroom inform what individuals believe about the past (Wineburg, 2001). Over the last two years, we engaged our communities in a process of history making through the design and testing of an augmented reality (AR) experience. Our stated mission is 1) to counteract the effects of community and racial stigmatization by demonstrating the positive assets of the communities to residents and to others from outside the neighborhoods; and 2) to build ongoing collaboration between cultural and ethnic groups that are too often separated, toward the increased mutual understanding, respect, and support that will contribute to long-term constructive social change.

Origin of the project

Nine African American and Latinx graduates of the nine-month Multicultural Leadership Academy hosted by the Latino Policy Forum conceived the project. The Academy focused on creating collaborative relationships between African Americans and Latinx to overcome significant historical divisions between the groups and create a positive force for social change. After graduating, the team conceived of this project, and obtained the support of the Field Museum, which had been a technical advisor to the Academy, and the Chicago Park District, which is sponsoring a project to engage communities in the stewardship of natural areas in urban parks.

Frames and discourse

When children make games, as in Vygotsky's (1978) depiction, they assign new meanings to common objects. For example, behind the couch becomes the robbers' den. The broomstick becomes the cowboy's horse. Through these sign manipulations, we map meanings of one social setting onto another imagined place. This remapping is the heart of creating an augmented reality, when applying the lens of figured worlds (Holland et al., 1998). New digital artifacts are placed into space to remap their meanings for audiences. The process has a dissociative element. People learn to "detach themselves" (Holland et al., 1998, p. 50) from their experienced physical surroundings and enter this imagined world. In this world, people use collectively developed signs and symbols (Vygotsky, 1978). For example, a prop as simple as a stick might launch a child into a world as a cow wrangler riding horseback. In our implementation, I argue that the community remixes digital artifacts and imaginatively uses visual primitives. In other words, we symbolically remap our spaces to create an augmented space to tell the story of our neighborhoods.

Augmented reality

Augmented reality is an emerging technology that creates an enhanced image or environment on electronic devices (smartphones, tablets, or goggles) by overlaying computer-generated images, sounds, and text on a real-world environment (New Media Consortium, 2014). The technology has been used in informal learning environments (Yoon, S., Anderson, E., Lin, J., & Elinich, K, 2017), including historical AR education (Harley, et al., 2018). We are prototyping an AR "app" that enables visitors to experience and interact with stories of history, cultural milestones, natural features, civic activism, and artistic inspiration not visible in the real landscape.

Research question

Our question is, how can an AR app allow for new kinds of historical practices that can empower communities both by creating artifacts to reshape perceptions, and by using created artifacts to reflect on community space?

Results: Design based trajectory to date

The app brought into the discussions "new narratives" around how connecting murals through the app can support deeper connections to community resources, and how AR triggers can challenge existing deficit beliefs about the community. The app contains five layers: history, art, environment, heroes, and English as a second language.



Figure 1. The launch screen, description of the five layers and map that shows where AR sites are located.

These layers interact, such that users can choose what they see at each site, while also seeing the overlapping frames that inform each other in the space. We have finished the second prototype with these layers. The user can explore the information provided in their chosen topic. When the user activates an AR trigger, shown on the right side of Figure 1, the trigger displays video and audio to discuss the history of the site.

In our second prototype, we framed our neighborhoods through semiotic remapping. When users arrive at AR sites, they hold up their phone to see the augmented elements appear on the phone screen. These elements overlay the image as seen through the camera. The elements can be video, audio, or 3D avatars of historical figures. These elements reframe the space, from one of every day to one with history built in.

In one section of the experience, we have users interact with an AR trigger that superimposes a video on the narrator's old street in Bronzeville. In a discussion of this experience one viewer changed his understanding how the place had changed. He discussed the history, but also created a new understanding. He saw that people created a place name to overcome a negative historical narrative. The connection of the video appearing in the place affected his understanding of both. This is the hope of *mezclado*, where imaginative pivots in lived space can shift our understanding of space. In this way we can mix reality in a way that reflects the lived reality of a place to more fully respect the process that brought us to our current neighborhoods.

Augmented murals for deeper connection

Mural artists contribute to the contested history of neighborhoods. AR creates deeper links between the resources in our community, the narratives that shape our understandings, and the wider audience who might just pass by these aspects that define our past. We understand the history of a place differently after inserting AR into everyday experiences. With augmented reality we seek *Mezclado*. The artist's vision of linking the art on the street to online media for history is the work of our project. The artists connect the visual elements of the mural to the information about where it came from as a way to share history. The process of bringing together multiple signs and symbols re-imagines spaces and their history.

Conclusion

We constructed two prototypes in two years and will continue to iterate our augmented reality experience. In our design based research, we see the possibility of meeting our goals to ameliorate the effects of community and racial stigma, and to increase collaboration between marginalized groups. This process contributes to how historical content is consumed and understood, deconstructed and re-imagined.

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