

Getting Places

USING MOBILE MEDIA TO AUGMENT PLACE-BASED LEARNING

by Jim Mathews and Mark Wagler

Do you want your students to bring along iPhones or similar mobile devices on your next field trip? We do. While we are aware of the many issues and challenges that confront teachers when it comes to implementing technologies in schools, our own experiences working with teachers and students suggests that mobile devices have the potential to support place-based and inquiry models of learning.

While there is often concern that new mobile media can isolate people from experiencing an authentic sense of place, we argue that they can also be used to cultivate learning communities and modes of inquiry that connect young people to their local community. For example, we have seen students pay close attention to details as they take photos, use phone calls and e-mail to collaborate in place-based investigations, conduct “just in time” Web searches while doing field research, eagerly participate in place-based augmented reality simulations (GPS-based games played on mobile devices), and use documents captured with mobile media for extended investigations and media productions.

Fifth-grade students playing an augmented reality game



Greenbush Cultural Tour

MARK WAGLER

For one-and-a-half years, my multi-aged fourth/fifth grade classroom studied The Greenbush, a historic neighborhood less than a mile from our school. During this intensive study, we took many field trips, interviewed neighborhood residents, created and analyzed maps, and distributed and analyzed an extensive community survey. To share our findings, we published student inquiry articles, hosted a community conference; created a Web site, designed an augmented reality game, and presented a resolution unanimously passed by the City Council. By engaging in authentic research tasks and producing (rather than simply consuming) knowledge, my students began to think of themselves as historians, ethnographers, and urban planners.

This complex project relied on audio and video recorders, digital cameras, and above all, notebooks to document the many dimensions of The Greenbush community. And yet, these relatively simple mobile tools helped students “get” The Greenbush. One student observed, “I never really knew how much twenty-five fifth graders could accomplish. We did masses of research.” Another student reflected, “When I visit new places I wonder what their past is and if they ever had something happen like what happened in The Greenbush.” A third wrote, “A neighborhood isn’t just a bunch of houses. It’s a place where people know each other.”

These students became passionate about The Greenbush, wishing they could have stopped the Urban Renewal that destroyed the core of the neighborhood in the early 1960s, and hoping that their part in the planning process might increase a sense of community in the future. In the end, their experience immersed the students in the past, present, and future of the neighbor-

hood, ultimately leading them to feel, as one student put it, “a part of The Bush.”

Augmented Reality (AR) Games

For five years, our Local Games Lab has been designing place-based augmented reality (AR) games and curricula, and working with elementary and middle school teachers to integrate them into their classrooms. AR games, which are played on GPS-equipped cell phones and handheld computers, allow students to navigate the real world, while tracking their location on a map that appears on their mobile device. When they reach specific real-world locations, in addition to seeing what is around them, students can also use their mobile devices to see photos, videos, and other documents that add to or augment reality.

As part of the gameplay, students take on real-life, professional roles and investigate cultural, environmental, and social issues that are relevant to the places where the games are played. In the Riverside Game, for example, teams of middle school students—role-playing as watershed ecologists and environmental historians—investigate the health of Riverside Park, an urban park along the Milwaukee River.

As they explore and make observations, the students experience the ordinary reality of the park—the wildlife, the river, the people. At the same time, on their handheld computers, they also access scientific data, view historical photos, and learn about native and invasive species. They encounter virtual characters such as birdwatchers, bikers, and researchers, who help them see the multiple ways that the park gets used. Because each player receives different information, collaboration becomes essential. In the end, students use their research to develop and present plans for improving the park and nearby neighborhoods.

AR games provide structured experiences of place that allow students to bring firsthand awareness of place back to the classroom. The games also invite students to take on new identities to solve complex, authentic challenges. A teacher described deep engagement among his seventh-grade students:

... and what was interesting is that they didn't see it as a school project. They saw it as 'we are solving a life problem.' Like this is the real thing. Like, 'we're real people now.' They didn't see it as, 'now I gotta do this and then do that and then I gotta write a paper and then I have to edit it and then I have to do a science lab.' No, this was a situation that they had to solve. . . . They were enjoying themselves. They were learning. They felt like they were real researchers, real scientists out there solving a problem. . . . They were still talking about it weeks later.



Discussing maps before heading into the field

“Contested Places” Neighborhood Game

JIM MATHEWS

As a classroom teacher and AR game designer, I commonly use the idea of “contested places” as a framework to scaffold students’ inquiries around local cultural, ecological, and social issues. The concept of “contested places” refers to the idea that the past, present, and future of particular places are fluid and negotiable. People experience and interpret places differently. They may also disagree about how a place should be used, now and in the future. This framework helps students recognize



Student with smart phone and clipboard looking for “contested places”

different perspectives and conceptualize solutions built around consensus.

The most recent manifestation of this approach, which Mark and I piloted in my high school social studies class (and then adapted for use with middle school students), combines the use of mobile devices (iPhones, cell phones, digital cameras) with a role-playing simulation. During the simulation, students role-play as consultants who have been hired by the local City Administrator to gather new information and develop strategies for improving the downtown of their small city.

The Set-Up: After introducing students to the concept of contested places via a brief class discussion, I informed them that they had been invited to a meeting at City Hall. When we arrived at City Hall, which is within walking distance of the school, the students formed teams of three and each member took on a unique role—photographer, geographer, or ethnographer.

Each team was then given an iPhone and asked to check their school email account. The email invited the students to look for contested places around the city and told them to report back to the meet-

ing room in one hour, so they could report their findings to the City Administrator. Before the students left to conduct their inquiry, they were given clipboards, maps, digital cameras, and a contested places guide sheet to help scaffold their inquiry. This sheet provided different categories that exemplified the multiple ways in which a place might be contested (e.g., related to noise, access, aesthetics, etc.) and provided mini-quests that students could use to think about how each of these categories played out locally.

Field Work: As they walked around town looking for, observing, and thinking about contested places, the students conducted informal interviews, took photos and recorded notes on their maps. While the students were given permission to explore the small downtown area on their own, without direct supervision, Mark and I kept in contact with them via text messages, face-to-face conversations and e-mails. When doing similar work with younger students, however, we recruit enough chaperones to ensure that groups are more closely supervised.

Presentations/Discussion: After spending an hour in the field, the students returned to City Hall. They compiled their observations onto a larger group map. Then, as they gave short presentations to the City Administrator, they used their phones to share photos and audio interviews that were relevant to the points they were trying to make.

The City Administrator was genuinely interested in the students’ comments and questions. Likewise, the time spent talking with the City Administrator was a highlight for the students. One student reported, “It was nice to hear what he had to say about the city after just being out and exploring it [myself].” Another said, “I thought it was amazing that he actually wanted to know our thoughts.” A third student reflected that, “It felt like we were doing something important and what we were doing had an impact on the community.” While the immediate goal of this activity was not to directly enact changes in the downtown area, the simulation encouraged the students to think of themselves as consultants. One girl said that

she should be getting paid for her work. Another added, “It doesn’t even feel like we are in school. It feels like we are actually working for the city.”

Extension: After completing this activity, each of the students was asked to think of one contested issue to conduct further research around. Students selected topics that included: parking, economic development, traffic, and historic preservation.

As part of these more in-depth investigations, the students made additional visits to the downtown area in order to conduct extended interviews, take photos, locate historic maps and documents, and create their own maps. The initial simulation involving the City Administrator provided the students with a broad introduction to the downtown area, sparked their interest, and connected them with people they later used as resources for their extended research.


As an additional follow-up event, the students visited a neighboring middle school to act as mentors for groups of sixth-grade students conducting a similar “contested places” inquiry. This mentoring experience reinforced what the students already learned about contested places and positioned them as experts and mentors. Also, observing how the high school students guided the middle school students’ analyses of contested issues gave us an opportunity to authentically assess the older students’ understanding of the concepts they were learning, as well as their ability to apply them to new contexts. These activities (which we believe can be easily adapted for use in intermediate grades) encouraged students to ask questions about their community that they would not have otherwise asked.

The “contested places” activity, the Greenbush study, and AR gaming provide examples of how mobile devices can amplify place-based learning by providing opportunities for students to see and engage with the world around them in new ways. Each of these activities uses authentic tools, contexts, and practices that encourage students to take on professional identities in order to solve challenges and conduct in-depth research. They also provide opportunities for students to explore



Students waiting to download a photo during a neighborhood investigation

the complex dynamics of places; develop fluencies with language, data, ideas, and technology; improve skills in problem solving and collaboration; and reason with evidence. As mobile devices become increasingly ubiquitous, schools will be challenged to find ways to effectively use them. Hopefully these devices will be used to support place-based learning—by challenging how learning traditionally takes place, and even more, where it takes place.

The following sites contain information and software to create AR games: Local Games Lab (<http://www.lgl.gameslearningsociety.org>), ARIS (<http://arisgames.org>), and MIT (<http://education.mit.edu/drupal/ar>). 

Jim Mathews, a doctoral student at University of Wisconsin-Madison, teaches part-time at an alternative school where his curriculum connects students with their communities through documentary filmmaking, photography, and service learning projects.

Mark Wagler wrote the Teacher’s Guide to Local Culture based on the experience of guiding his fourth- and fifth-grade students in independent inquiries, yearlong cultural tours, collaborative community projects, and in-depth ecological investigations. At the Local Games Lab at UW-Madison, Mark and Jim create Augmented Reality and other mobile games, co-design place-based game curricula with teachers, and research student learning.

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