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From Redlining to Benevolent Societies: The Emancipatory Power of Spatial Thinking

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Abstract

This study highlights the power of place, and reconceptualizes geography education as integral to the larger project of teaching for democratic citizenship. Using an interactive web platform, the researchers asked 29 seventh grade girls to research and map significant cultural and historical places associated with an ethnic group, or women, in the city of Seattle. The students worked in teams and commented frequently on each other's contributions. Adopting a participatory action research method, the researchers studied the multiple ways in which a greater understanding of spatial production, such as processes of exclusion and inclusion, or mapping and counter-mapping, can give students the knowledge and will to challenge prevailing norms about the "naturalness" of a segregated urban landscape, or the inequitable allocation of resources. This approach follows recent feminist, anti-racist, and internationalist articulations of citizenship education, which advocate a social justice or emancipatory component to teaching and learning.

Keywords

geographic; mapping; citizenship; civic engagement; collaborative; emancipatory

It was one hundred and forty-four years ago that members of the Democratic Party first met in convention to select a Presidential candidate. Since that time, Democrats have continued to convene once every four years and draft a party platform and nominate a Presidential candidate. And our meeting this week is a continuation of that tradition. But there is something different about tonight. There is something special about tonight. What is different? What is special?

I, Barbara Jordan, am a keynote speaker.

—Jordan, 1976

Jordan begins her famous speech with the invocation of history: "*one hundred and forty-four years ago ...*" then leads immediately to the present, and her physical place in that present. She draws on the power of a spatial declaration, one that involves her own female,

African American body in an unfamiliar landscape: *What is different? What is special? I ... am here.* Her “I” implicitly incorporates a “We”; we (women, black people, all of the marginalized of American society) are in this space, a key space within a key institution at a key event: the Democratic National Convention. The declaration indicates a shifting geographical imagination, and the power that accrues to it as a new common sense is born. Through this simple embodied speech act she also invokes prior exclusions, and makes history both immediate and powerful, but also non-linear. Times change ... *in and through space.*

In this article we argue that for long subjugated groups, such as people of color and women, bringing geography to life by making it personal and relevant, is critical to citizenship formation. While social studies disciplines such as government, and to a lesser extent history, are understood to be core fields for the inculcation of informed and engaged young citizens, geography is generally perceived to be outside this particular educational project. As Schmidt (2011) points out, the problem with this disciplinary balkanization is that geography can be “unburdened” by thoughts of how its “pedagogical and content learning contribute to the development of students’ citizen identities” (p. 107).

Yet learning about place, and how space is actively and socially “produced” through human agency (Lefebvre, 1992) should be an integral component of teaching for democracy. Our approach highlights the power of place, and reconceptualizes geography education as integral to the larger project of teaching for democratic citizenship (Gaudelli & Heilman, 2009; Stoltman, 1990). In particular, we emphasize the multiple ways in which a greater understanding of spatial production, such as processes of exclusion and inclusion, or mapping and counter-mapping, can give students the knowledge, technical training, and will to challenge prevailing norms about the “naturalness” of a segregated urban landscape, or the inequitable allocation of resources.

This approach ties into recent feminist, anti-racist, and internationalist articulations of citizenship education, which advocate a social justice or emancipatory component to teaching, arguing that most prevailing citizenship discourses rely on an “assimilationist view of civic identity and civic engagement.” Obenchain, Pennington, and Orr (2010) continue by noting that these recent theories openly challenge normative ideals of the common good or the autonomous rational thinker, advocating instead for democratic ideals to be forged through reconceptualizing justice by way of studying social inequity and conflict: “Given the increasing global nature of citizenship and the continuing issues of injustice locally, nationally, and globally, preparing citizens with the knowledge, skills, and dispositions to actively work toward social justice is desirable” (p. 488; see also Giroux, 2003; Ladson-Billings, 2003; Parker, 2003).

In this project we also underline the importance of collaboration and participation, beginning with the Deweyan premise outlined by Parker (2008) that “democratic citizens need both to *know* democratic things and to *do* democratic things” (p. 65). Geographic skills in the realm of geovisualization technologies are usually conceptualized as primarily based on memorization or knowing how to manipulate computer-based web platforms or mapping programs. At the middle school level these might include simple skills such as finding

locations or interpreting satellite imagery. But recent developments in geospatial technologies now also allow educators to teach skills directly associated with democratic practice. These include, for example, the use of *participatory* Geographic Information Systems (GIS) and other web-based mapping tools which enable participants to interactively explore and collectively negotiate the ramifications of specific decisions affecting their spatial surroundings (Bednarz, Acheson, & Bednarz, 2006). In the section below we discuss the many implications of this type of collaborative and participatory mapping for new forms of political awareness and civic agency, especially among historically and geographically subordinated groups.

COUNTER-MAPPING: THE POWER OF ALTERNATIVE GEOGRAPHIES

The concept of counter-mapping begins with the fundamental premise that maps are never neutral or objective but rather reflect existing and/or previous power relations in society (Harley, 1989; Wood, 1993). Their use in the historical creation and management of empire has been well documented (Driver, 2001; Edney, 1997; Rabasa, 1995), as has their ongoing importance in struggles over rights to land and resources between modern nations and indigenous groups (Chapin, Lamb, & Threlkeld, 2005; Sparke, 1998). Indeed, the famous cartographer and map historian Brian Harley (1989) noted over two decades ago that maps and mapmaking should always be viewed critically, as tools that are generally at the disposal of dominant groups in society, and whose fundamental purpose is to “codify, to legitimate, and to promote the world views which are prevalent in different periods and places” (p. 429).

Yet, as maps are often hegemonic in their orientation, so too can they be produced in alternative ways for counter-hegemonic purposes. Works such as Harris and Hazen’s (2006), for example, investigates the possibilities inherent in increasingly democratized mapping, especially with respect to the “incorporation of alternative knowledges in GIS” (p. 106). And research by Fiedler, Schuurman, and Hyndman (2006) demonstrates the usefulness of GIS when aimed toward mapping populations usually rendered invisible, for example populations such as the homeless or recent immigrants. Groups such as these can benefit from being “seen” and thus counted in assessments of vulnerability and/or the need for social services. These types of studies recognize the embeddedness of maps in histories and geographies of power, and critique the notion of objectivity and neutrality in any mapping project. But by the same token, they understand the strong political possibilities inherent in modern geospatial technologies, and actively and reflectively employ these tools in applied realms to further a critical politics of counter-mapping on the ground.

In this vein, Tate and Hoglebe (2011) offer a complex, multi-layered argument in support of the strategic uses of GIS tools in a recent study of African American male attainment. Geospatial distribution matters in multiple ways, including relationships to schools and jobs, and seeing these relationships *visually* provides important new clues about how and why. Tate and Hoglebe are especially interested in the intersection of these new types of visual computation tools, growing political awareness, and increased civic engagement:

A particular goal of this article is to examine how a visual political literacy project might inform and advance civic engagement and related capacity as part of an

opportunity expansion regime aimed to support African American males in urban America. (p. 4)

The key concept that they develop in their investigation is the notion of “collective cognition,” which they believe is enhanced with visual political literacy. The more that relevant actors can see and manipulate visual data—such as layered digital maps showing certain kinds of (inequitable) spatial patterns—the more likelihood that those actors will be able and willing to participate in an active and informed civic dialogue agitating for greater spatial equity. Drawing on a large cognitive science literature, they support their claims by showing how images and other kinds of visual representations have been shown to positively influence learning and information recall, as well as enabling spatial computations (cf. Kulhavy, Stock, & Kealy, 1993; Kulhavy, Stock, Verdi, Rittschof, & Saveyne, 1994; Schwartz & Heiser, 2006; Verdi & Kulhavy, 2002). They also argue that the computational tools used in web-based geovisualization systems, such as “inspecting, finding, zooming, rotating, and transforming representations” are directly relevant to civic engagement, as they enable the users to generate explanations and offer plans at different scales and to different audiences.

Relevant to our study here as well, is the observation that geovisualization tools such as GIS and web-based mapping can incorporate and manifest out of school factors such as the importance of neighborhood or community effects on educational achievement. While the normal focus in education is on the individual, or occasionally on the individual and the family, a wider scalar lens, such as is gained through an investigation of the spatial relationships between the individual and the resources and/or deficits of neighborhoods, can bring in critically relevant information (Elwood & Mitchell, 2012). Seeing this information in a visually accessible form, such as a map or set of maps, increases visual political literacy, and can aid in the call for targeted programs with respect to actual demographic statistics and academic advancement (see also Orfield, 2002).

While Tate and Hogreb are primarily interested in the broad “collective cognition” about African American males’ education attainment that is increased through the use of these types of visual tools, there is also a large literature on the ways that the mapped “subjects” themselves can become agents of knowledge production through the acquisition of basic mapping skills. A significant amount of contemporary research in critical cartography focuses on the possibilities of an increasing democratization of knowledge and decision-making through the use of what has become known as “participatory GIS” (PGIS) or “public participation GIS” (PPGIS). This body of work seeks to put the community at the center of community building through collaborative public participation and experiential computer mapping and analysis (Craig, Harris, & Weiner, 2002; Elwood, 2008; Ramasubramanian, 2008).

Some of the critical discussions concerning the social and political impacts of GIS include those around differential access and empowerment. Who is able to tell what stories, and to whom? Early work in PGIS in the United States sought to counter the exclusions and silences of previous eras of “expert” control, through the democratized, community-based mapping of sites such as toxic hazards, community centers and local parks, and so forth

(McMaster, Leitner, & Shepherd, 1997). This type of work emphasized bringing in a community-based perspective, and facilitating access to publicly available information, so that shared knowledge could “enable appropriate and ethical kinds of collaboration” (Aitken, 2002, p. 358).

Around the world, community organizers have adopted similar strategies of community participation to further the voice and the agenda of formerly marginalized actors. In Nepal, PPGIS was introduced into the field of community forest management, with the hope of collecting and analyzing useful data for local stakeholders, and simultaneously increasing community participation and empowerment. The establishment of village-based forest management committees, or Forest User Groups, and the participatory engagement with boundary drawing, species identification, sustainable yields, sector resources, and other information, indicates the great potential of the geovisual technology. In the pilot project this was particularly true for the interpretation of aerial photographs, which provided a kind of visual literacy and expertise to community members who might otherwise have been left out of the discussion. “Aerial photographs were an excellent facilitation tool, particularly due to their non-literate nature making them accessible to the whole community” (Jordan, 2002, p. 238; see also Bugs, Granell, Fonts, Huerta, & Painho, 2010; Kwaku Kyem 2002).

In the urban United States, Elwood (2006) has shown how marginalized community groups were similarly able to use digital spatial technologies such as GIS to further their own political agendas. Being able to monitor and document neighborhood change and present visual evidence of ongoing transformations, for example, was an important strategy for West Humboldt Park, in narrating the story of community assets, deficits, and needs to those in control of urban resources and planning. Elwood argues that both “spatial politics” and “knowledge politics” matter in situations where struggles arise over the appropriate distribution of urban resources; in situations such as these, GIS types of “expert” technologies often provide the trump card. While community groups in her study certainly could have produced an “effective and adaptable spatial narrative without the use of digital information technologies like GIS,” the rapid, flexible, effective and authoritative capacities of GIS gave the community groups both the aura of scientific expertise and also the legitimacy of widespread community participation when they presented their findings in a public forum.

Digital technologies like GIS enable a user to try out different visualizations relatively easily and quickly, an invaluable capability for overtaxed community development institutions and staff members. Also important is the greater weight sometimes given to GIS-based representations of neighborhood or the greater expertise sometimes assumed of the individuals and organizations producing these representations. (Elwood, 2006, p. 338)

CHILDREN’S MAPPING AND SOCIO-POLITICAL FORMATION

If marginalized community groups can derive legitimacy, power, and authority from participatory geovisualization technologies, what kinds of benefits can children derive from collaborative mapping? Three or four decades ago, the primary research on children’s spatial awareness focused on the questions of whether children’s mapping abilities are innate or

learned, and at what age they are able to comprehend spatial relationships and manifest them through various types of graphic representations. The geographer Jim Blaut argued strongly that mapping ability reflects an atavistic survival mechanism that is universal to all human beings, and that children have an innate and intrinsic ability to trace, navigate, and represent space, even at very young ages (Blaut, 1997; Blaut & Stea, 1974; see also Blades et al., 1998; Landau, 1986).

Following the work of Piaget (Piaget & Inhelder, 1956; Piaget, Inhelder, & Szeminska, 1960) on children's understandings of space and geometry, other scholars in psychology and education emphasized instead a notion of learned, developmental levels of competence in mapping rather than basic innate knowledge. In contrast with the earlier work in geography, these scholars argued for the importance of individual differences, and concepts of graduated learning dependent on cognitive level (Liben, 2002; Liben & Downs, 1997). Although drawing on different literatures and emphasizing quite opposing viewpoints of learning and development, however, the two approaches shared a reliance on the individual as the key locus of mapping knowledge and ability; in other words, in both the nativist and the Piagetian traditions, children's spatial cognition was researched and "understood" on the basis of profoundly individual rather than social processes.

A third strand of research on children's spatial cognition has focused on map learning and awareness as part of a broader contextual world of social relationships and cultural communication. This body of work draws from the legacy of Lev Vygotsky (1962), who promoted a view of schooling which foregrounded the social construction of knowledge, and emphasized the context in which learning occurs. For Vygotskian followers, the collaborative and communicative *process* of mapping is of critical importance, as it is through the sharing of knowledge between more and less skilled children (and adults) that spatial relationships and cartographic concepts can be best disseminated. Wiegand (2006) writes of this process:

Unlike some other domains, cartography does not consist of "natural" or "given" principles but of constructs and procedures which are shared by a cartographic community in order to make maps and advanced in order to promote the making of better ones. Thus cartographic knowledge is both symbolically and socially negotiated. Learning to make maps is not only a matter, therefore, of individual activity in an attempt to understand the appropriate concepts, but is also a socializing process by which individuals are introduced to a culture by its more skilled members. (p. 20)

Along with a few other geography educators (e.g., Leinhardt, Stainton, & Bausmith, 1998; Owen, 2003), Wiegand (2002a, 2002b) has explored the relationship between collaborative learning—specifically the quality of student talk—and computerized map making. Using analytical linguistic tracking devices, which code moves such as "Reason" moves (those that "provide explanations for mapping behavior") and "Question" moves (those that "invite an explanatory response"), Wiegand (2006) found that higher levels of student discourse were positively associated with map-based learning. He, like others investigating similar processes (Leinhardt et al., 1998; Tshibalo, 2003), believe that collaborative learning leads to improved spatial cognition involving tasks such as understanding scale and topology,

calculating gradients and distances, and locating features on grids. While this research indicates a relationship between collaborative spatial learning and improved geographical knowledge, and recent educational research has pointed toward a relationship between digital spatial learning and improved historical thinking (Lo, Chang, Tu, & Yeh, 2009), as of yet there has been relatively little investigation of the potential connections between collaborative learning, spatial cognition, and social justice.

EMANCIPATORY GOALS OF THE PROJECT

In our own participatory action research with seventh grade girls (discussed in further detail below), we pursued this thread by deliberately introducing the students to ideas of counter-hegemonic thinking involving maps, visual literacy, and general spatial awareness (see also Elwood & Mitchell, 2012; Mitchell & Elwood, in press). We began our sessions with the students by discussing how a useful vantage point on the political importance of space comes from an awareness of how much of politics is often quite literally played out through the “taking” of space. Just as Barbara Jordan “took” the podium to declare the arrival of black women in the institutional spaces of the Democratic National Convention in 1976, so too have women and people of color furthered their own political agendas through practices such as taking the streets demanding the right to vote, or taking seats in buses, classrooms, and at lunch counters demanding the right to be served.

In these types of events, the narrow framing of the liberal public sphere as necessarily divided between “appropriate” issues for public discourse (issues purportedly related to the common good) vs. “inappropriate” (supposedly private, individual) concerns, is contested in and through space. Over time, historical practices of hatred and exclusion that have been bracketed as individual and/or private have permitted a kind of silent violence to be perpetrated on many marginalized groups. In recent years, this type of violence has been successfully contested through bringing these issues quite literally into public space, and thereby forcing them to become publicly recognized and debated. These moments of challenge in the United States have included bringing issues such as domestic violence, homophobia, and racism (and their multiple material effects, such as disenfranchisement, segregation, and discrimination, among others), into public visibility and deliberation. The vaunted neutrality and inclusiveness of liberalism is thus put to the test when groups and individuals take public space to manifest the multiple and ongoing exclusions that the strict separation between public and private realms often produces and maintains (Eley, 1992; Fraser, 1989, 1990; Ryan, 1992).

While this level of abstract thinking is beyond the capabilities of most middle school students, their understanding of the *power* of space can be initiated through discussions and practices related to how communities have lost or won space through the course of political struggle, and also how they have held space in a manner affirming group identity through time. This kind of approach to geography education advances a social justice or emancipatory agenda, but it does so through the relatively simple means of calling attention to certain kinds of spatial patterns, processes, and relationships through time. Why did particular events happen at particular locations? Who controls these spaces? How are they

represented and experienced? And how have these processes and patterns changed over time and through the actions of specific individuals and groups?

These types of questions elicit larger conceptual frameworks involving rights of association, property, *habeas corpus*, and other civic and legal rights integral to citizenship in the United States. When mapped and discussed utilizing an historical framework, students are able to quite literally *see* the abrogation of key aspects of citizenship, through, for example, the internment of Japanese Americans during World War II, or spatial patterns of institutionalized racism such as redlining. At the same time, they can better visualize how subjugated communities might be enhanced or protected through spatial proximity or access to critical resources. And through discussion and further research, they also become aware of changes through time—often resulting from the actions of key figures, groups, or institutions asserting their rights to particular spaces.

In our participatory action research with the seventh graders, we were interested in whether learning about these historical processes would seem more immediate and important to the students if they could visualize how and where these things occurred (and in some cases continue to occur) in their own city. The students investigated institutions such as immigrant enclaves, benevolent societies, multicultural centers, women's centers, and community headquarters as spaces of social, political, and economic safety for historically marginalized or terrorized groups. They also found evidence of exclusion and discrimination against their groups in spatially-based processes such as redlining, steering, internment, quarantining, and incarceration. As they researched, mapped, deliberated, and collaborated with each other and with us, our social justice goal was that this project might stimulate greater awareness and greater civic engagement in their own neighborhoods and communities now or in the future.

METHODOLOGY

The term participatory action research (PAR) defines and encompasses research in which participants are involved alongside researchers, and work together with a goal of improving a problematic situation or making general societal changes for the better (Kindon, Pain, & Kresby, 2008). Although the term incorporates a number of different approaches, it generally provides for a more fluid, less hierarchical relationship between researchers and participants, incorporating research “subjects” in ways that allow for more critical dialogues about the research process and findings. Action research typically relies upon research methods, data sources, and analysis techniques that are familiar to most social scientists. But it also involves linking research to action, and theory to praxis, often through activities that are designed to serve dual purposes: working toward the project's action goals *and* generating data and analysis for its research goals. Drawing upon these principles, our project involved developing and implementing participatory technologies and learning activities, while simultaneously using qualitative social science research methods to examine the forms of learning and civic engagement that emerge from them.

In the realm of education, participatory action research blurs the boundaries between research, pedagogy, and politics, and seeks to work “with” rather than “on” youth, actively aiding in socially transformative knowledge production for everyone. Cammarota and Fine

(2008) emphasize, in particular, the ways in which youth participatory action research enables opportunities for young people to study social problems affecting their own lives (see also Cahill, 2007; Cahill, Rios-Moore, & Threatts, 2008). It provides a place and set of relationships from which youth can challenge normative practices, expose oppression, and foster a radical collective imagination, in the process creating their own set of tools for current and future social justice work.

Participatory action research has shown particular promise in achieving two outcomes that are critical to our project: enhancing students' sense of their own knowledge and agency to impact their communities, and developing research outputs that foster sustainable benefits for their communities (cf. Kindon et al., 2008). We adopted a participatory framework because we were interested in working with and guiding students toward more active and engaged civic behavior in the greater Seattle region, at the same time that we were teaching and observing their reactions to the material we were presenting. Our study did not incorporate a strong student voice in how the research was set up, but we researched and reflected together on the identification of "problems" and "absences" evident in Seattle's cultural history, and where these particular spatial problems remained and might be rectified or at least made more widely known.

Our study was rooted in the proposition that place—specifically a reflective knowledge about the places that are experienced in our daily lives—can be a central catalyst in the development of civic agency and a commitment to civic engagement. The project thus explored the link between a critical awareness of shared concerns, and the development of a collective social awareness that might enhance civic agency and commitment to social and political action. What kinds of learning factors and environments stimulate this critical link? Can new geo-visualization technologies such as interactive mapping enhance such learning experiences by allowing groups of students to explore, visualize, and collaboratively discuss the historical and cultural geographies of historically subjugated groups in society? Figure 1 indicates the connections we were interested in elucidating and furthering.

Analysis and Interpretation of Data

Adapting the Google Maps API, we developed an interactive mapping platform which enabled students to map key historical sites in Seattle and annotate them with information, icons, photographs, sketches, comments, and general reflections. Our open-source, web-mapping platform was capable of linking and storing multimedia resources to particular sites, thus functioning as a flexible digital archive where youth could compile evidence and results of their research related to particular places and events over time.

Adult participants kept field journals to record their observations of youth interactions, forms of collaboration, and evidence of civic learning and action. Because multiple people conducted participant observation and recorded field notes, we developed a simple rubric that laid out key variables around which these observations and field notes were structured. This approach promoted consistency in our evidence.

Toward the end of the two-week project, we asked the students to take us on "guided tours" of their cultural history maps, reflecting on what they included (or left out) and why, and

what they learned from exploring each other's maps. We asked them about the nature of their collaborations with peers, and what they learned from each other. In the fifth and sixth sessions, we asked them to complete a civic engagement worksheet in pairs. We also convened the entire class to discuss the different cultural history maps that they had created, and which we projected onto a screen. Each student chose a point, area or line, and then the researchers and the students discussed the information and the comments that were presented in relation to that map symbol. This discussion was written down by one of the researchers as it occurred, and then augmented by the recollections and observations of the other researchers.

Our other major source of evidence for the research was the diverse youth-generated content that emerged. The maps and the annotations and comments added by the students provided rich insights into their place-based learning, collaborative knowledge making and changing civic awareness. The platform itself thus served as a multimedia archive of student-generated qualitative data informing our research questions.

We carried out content analysis of these data using techniques drawn from grounded theory. This form of analysis examines qualitative data in an iterative recursive fashion to identify patterns and shared themes, and to evaluate the strength and consistency of the emerging findings (Glaser & Strauss, 1967). We analyzed the cultural history maps using "grounded visualization," a new technique that brings the analytical strategies of grounded theory to bear upon spatial data and maps, especially those produced through multimedia mapping technologies (Elwood & Cope, 2009; Knigge & Cope, 2006). In our analysis, we used accepted practices for verifying the validity and robustness of our findings. For example, the multiple data sources we relied upon were selected to provide complementary perspectives, an approach known as triangulation that is commonly used in interpretive analysis of qualitative data. As well, our analysis of these data involved systematic assessment of contradictions and disjunctures within the evidence itself and our emerging conclusions.

Participants and Setting

Our project involved 29 seventh grade girls in a social studies class at an independent girls' school in a relatively poor area of South Seattle. This class was chosen because of a positive relationship one of the authors had formed with the teacher in a previous research study. Of the children involved, 45% were girls of color, and 30% received some form of financial aid. The mapping component augmented a teacher-directed project, where each girl worked in a team of four (or five in one case), conducting archival and interview research on the history of a specific group in Seattle. The five groups (out of several possibilities) that the girls chose to research included African Americans (researched by two teams), Chinese, Filipino, Japanese, and Women (researched by two teams). In the teacher-directed project, each of these four teams created a seven to ten minute video documentary on these five groups, incorporating still images and interviews with local figures that had been prominent in the group's development or history in the city.

The research and video project directed primarily by the class teacher occurred over a five-week period. Our web-based mapping component took place in six one to two-hour segments with the students during the second and third weeks of that five-week period, and

was designed to augment the video documentary project through providing more spatial knowledge of these communities: where they were excluded or banished from space, where they formed community-building institutions and enclaves, who were the key players in these forms of spatial production, and how these patterns recurred and/or changed through time. The video documentary showing, which we attended, was played to a large group of parents, teachers, and community members several weeks after our mapping project was concluded.

The research team consisted of two university faculty and two graduate students. On the first day we introduced ourselves, asked the students to choose pseudonyms for themselves, and had them explore the basic functions of our on-line mapping platform. The interactive web-based platform we designed allowed the students to zoom in and out of different scales from street to globe, to use one of three symbols to locate things (point, line, or area), and to add additional media such as text, photos, and videos. Collaborative learning was facilitated through the comment function, which supported a running exchange of comments and responses associated with a map object.

The researchers were directly involved in introducing the web platform to the class, helping students access relevant data and place it on the map, and in conceptualizing how social and spatial organization are interlinked. We were also active participants in introducing ideas about democratic practice and civic engagement through the mapping project, deliberating together on what these things meant and how they were practiced, and working with the students and the teacher to create a social milieu that was open to considerations of social justice and political activism inside and outside the classroom.

Unit of Study and Limitations

Our overview for the six sessions of the mapping project can be seen in Figure 2. In the six lesson plans, we developed a progression of ideas, technical skills, and spatial knowledge that we hoped would lead to greater critical awareness of place, and from there to more interest in civic engagement.¹ The basic curriculum arc includes a movement from introduction and exploration through documentation and representation, to a final session focused on doing, acting, and sharing. We conceptualized this arc in the following way:

1. Introduce/Explore—the topic/theme
2. Document/Represent—our existing knowledge about it & what else we want to find out
3. Experience/Observe—some aspect of it in our everyday lives, our community
4. Document/Represent—our new knowledge from the exploration, observation
5. Collaborate/Discuss—what needs to be done, what we are doing or could do, what we want to share
6. Do, act, share with others

¹The authors can provide detailed lesson plans of the six sessions to educators who are interested in learning more about the actual implementation of the mapping project.

In each of the six sessions, we divided the approximately two hours we had with the students into shorter time periods, with varying activities. For example, in Session 5, we started with a five minute introduction, where we broke up the students into their teams (African American, Filipino, etc.), distributed the project binders and explained how to use them, and discussed the overall structure of the session. In the next 30 minutes, we finished adding multimedia to their maps. We then took several minutes to brainstorm with the teams about how they could effectively guide others through their maps on a “tour.” For the following 30 minutes each team paired up with another and worked on giving guided tours through their maps (what they included on their maps, and why; what they left out and why; overall significance of the patterns and processes manifested on their maps). They then filled out a peer feedback form indicating what they liked best in the other team’s map, what worked well, questions they had, and constructive suggestions for improvement. Additionally, after giving the tour, each team did their own self-reflection, focusing on what went well, and if they wanted to make any changes before presenting their work to others.

The other form of feedback we requested was via the *comment* function on the web platform. We asked each student to think of at least one question or constructive comment that she could leave on the other team’s map. This left a digital trace of the peer review process, and was also a great way for an outside audience to see part of the collaborative mapping process in action. In the next twenty minutes we convened the students into one large group and asked them to engage in a discussion trying to observe similarities and differences in each other’s maps. We helped guide the discussion by asking what kinds of things affected spatial movements and patterns for each of the different groups throughout history. In the last few minutes we wrapped up the lesson by asking students to share some of the things they really liked about different teams’ work that they didn’t have on their own maps, and also to share some of the similarities and differences in the spatial patterns and processes evident for each group.

As with all participatory action research, a limitation of the study is the potentially greater difficulty of evaluating the program results in a neutral way. While all research incurs some degree of bias, PAR is at greater risk, as the researchers, who are also active participants in the project, “may have biases that lead to exaggerated claims of the benefits of interventions they co-constructed” (Hughes, 2003, p. 41; see also Weissberg & Greenberg, 1998). The method emphasizes outcomes rather than the research process per se, and as such, must engage a constant tension between the aims of social improvement, collaborative engagement, and knowledge production (Schwandt, 1997).

In mapping and other geovisualization projects, there are specific types of limitations in PAR. For example, Pain and Francis (2003) discussed the difficulties of separating out the “facts” or incidents relating to specific spatial events and processes, from the personal experiences of those places. As our project was focused primarily on historical cultural events relating to Seattle’s communities, this was less of a problem for our research, as the students were not mapping things (such as crime and victimization—the subject of Pain and Francis’s research) in which they had been personally involved. (However, some of our students were connected to the events or institutions they were mapping through affiliation with elderly community members or ongoing community organizations.)

A third limitation of the research *as* participatory action research was the limited involvement of students in the formation of the research agenda and overall program of study. This was a function of the funding and Institutional Review Board process, as well as the necessity to adapt to the teacher's curriculum plans and learning goals for the class. The lack of participation of students at the front end of the project does not negate or diminish its overall participatory framework, as PAR is a large umbrella that can incorporate a wide variety of projects. Nevertheless, these caveats are important, as there remained an imbalance of power, and a hierarchical structure between the research team and the students as a result of our greater knowledge of the project and its overall arc, as well as our stronger technological knowledge and knowhow.

A final limitation of the study can be found in the relatively short-term nature of our interactions with the students. While we established a rapport over the course of our two weeks with them, there was insufficient time to form the kind of deep relationships that provide a better foundation for the interpretation of results. The research findings presented here thus function best as illustrative examples of our larger theoretical argument about the potential emancipatory value of spatial thinking.

FINDINGS

Critical Spatial Awareness and Shared Concerns

In our first session with the students, we asked each girl to think of a place that was important to the history of the group they were studying, then to write down what that place was, and where it was. Using a (paper) base map of Seattle to start, we then asked them to locate it by drawing a point, line, or an area on the map. Most of the girls struggled with this part, saying, "I don't know where anything happened," or just circling "Seattle" as their location. Some of the girls needed hints before they were able to identify an important site. For example, we asked "did anything significant happen in a particular building or on a particular street," and almost immediately, the girls were able to think of an important site. In addition, those that understood what we were looking for were able to help others in their group.

Once they had identified a historically important site, written about it, and added it to the base map, we started them on the process of putting these places into the digital group map using our web platform. First, they all needed to bookmark the platform site and log in. From there, they each added their initial places and, without our prompting, began to experiment with the commenting tools. They figured out new things on their own, like adding comments to points and then displaying the comment stream associated with a point. Their pleasure in doing this was expressed in positive, enthusiastic comments such as, "good it worked and you got it spongebob!!!" and "So cool!!!!"

The collaborative element of the project came out in a number of ways. In the African American team, one of the girls mentioned that she wanted to map Jackson Street—a street quite close to the girls' school that is an important site in the development of West Coast jazz. As she pulled up the location on the computer a girl from another team jumped in to ask, "what is it on Jackson Street that you want to map?" Their conversation with each other

and with us thus began to link the visual and the historical-political, beginning with a place, and using it as an entry point to a discussion of critical urban events. Significantly, the Seattle jazz scene is an important one in the history of music, yet it remains largely invisible in most histories, and in virtually all of the tourist guidebooks of the city (de Barros, 1993). It is brought to public view and interest for the students, however, through the team's investigative research, followed by the mapping exercise and related comments.

In Figures 3 and 4, we show a map created by the group investigating the historical geography of African Americans in Seattle, and some of the related comments on the site. The map indicates some of the sites of historical significance that the students were finding (mapped with pins), and an area of the city (delineated in blue) that was important to the group's formation and identity. When the mapping platform is active, a viewer clicks on a pin or on an area, and a text/graphic box pops up to the right. In Figure 3, we have included an example of the type of information that the students were putting onto their map. In this example, the student uploaded an archival photograph and titled it, "2nd Black Panther Headquarter."

Figure 4 indicates some of the conversations that the students had about this place, the photograph, and the text. These conversations were mostly oral, but we encouraged them to write some of their ideas into the comment box as well. The students used their "secret" names, and cleaned up their grammar and spelling when reviewing the site the next day. (The researchers did not make any changes.) One student responded to a verbal question as to why there was a "second" headquarters by noting, "I think that the BPP[Black Panther Party] got evicted from some of their buildings and that's why they have multiple headquarters." This spurred another "why" question, followed by a question from the teacher. In these types of exchanges, the written comments were used to stimulate more oral dialogue, but they also provided a record of ideas and exchanges that other students could see and react to at a later time or from a different place.

In Figures 5 and 6, a student from the Japanese group mapped the Seattle Courthouse and explained why it was important to a university student named Hirabayashi. She noted how the student "refused the evacuation," and in his legal defense, invoked the Fifth Amendment in court. Pengturt and Georgie offered supportive comments after viewing the post by one of their teammates (see Figure 6). They also added additional information to the post, including a related website of interest. Significantly, one of the more advanced students in the class, Pengturt, answered a direct question posed by the teacher about the Fifth Amendment's relevance to the Japanese internment struggles. She showed her own understanding of the concept of due process, and at the same time, helped the other students to make further connections between the historical event of the internment, and the idea of due process as a right guaranteed by the American constitution.

In Figures 7 and 8, a student located a general area of the map (the International District) by using the "line" tool. She uploaded a photo from a main street in that neighborhood as a vehicle for talking about the practice of redlining. In her text, she introduced redlining in a somewhat confusing way: "Many Filipino people lived in the international district because it was the only place that wasn't red-lined. Red lining is when basically an invisible line is put

dividing where Filipinos can buy land.” This prompted a question from a student outside the team, who had heard about it in relation to her own group’s spatial formation and identity.

The comments that appear in Figure 8 demonstrate the collaborative, spatially-oriented learning process that occurred in the classroom as a result of this exchange. Funnygummi indicated her initial confusion about redlining with the question, “How did redlining actually work if it was like an invisible?” This was answered by the teacher, who used the student’s question as a way of introducing the concept of restrictive covenants. Bee then brought in her own understanding of the process, which she had learned from her research on the Chinese experience in Seattle. She noted authoritatively: “Filipinos were not the only people who got red-lined.”

Civic Engagement

By the fourth mapping session, the research team observed that the students were thinking more critically and in more detail about the historical sites and social processes associated with their group than they had been earlier. In the first two sessions, most of the initial map objects were pitched at the neighborhood scale, with the historical cultural significance of the group articulated in very broad terms, sometimes even as simple as, “this is where Filipinos are.” By the fourth session, however, the map content was starting to be much more complex and detailed—noting things like the activism of individuals, forms of group resistance, spatial processes like internment, socio-economic transformations such as women’s entry into the industrial work force during World War II, and gender stereotypes that led to women being tracked into particular sectors of the labor market.

Whether or not they could articulate this as such, the maps also picked up on the role of civic institutions both as a locus for activism or resistance and as a site for reinforcing cultural practices and community ties. Most of the teams included a cultural or community center such as the Japanese American Citizens’ League, the NAACP, the Filipino Community Center, or a woman’s association in the greater metro area. As well, several of the teams were passionate about demonstrating their knowledge of public space and public events as critical sites of protest.

In the fifth session, a student volunteer chose a point from another group’s map, which was then projected onto a screen so that the entire class could see it. She read the text associated with that point, and one of the researchers facilitated a discussion to draw out historical and geographical connections or to introduce critical concepts. In this session, both the spatial thinking and the collaborative element of the sessions were clearly having an impact on the students. This was evident when many students began to make connections between the various forms of segregation experienced by the different groups.

We began by reviewing and commenting on the Filipino team’s map point out at Port Townsend, indicating where 339 Filipinos were quarantined in the late 1920s because of the “threat” of spinal meningitis. When we asked whether other groups were also separated physically from the dominant society at some point in time, several hands went up, and many students talked about the experiences of their own groups. For example, the team working on the Chinese experience talked about the Chinese Exclusion Act, telling us quite

a bit about the social implications of these types of exclusions. The African American team spoke passionately about the redlining of neighborhoods.

The main geographical connection that was made in the sixth session was the relationship between enclaving and power, and how groups might end up in a spatial cluster for various reasons. In addition to the negative, external forces leading to enclaves (such as restrictive covenants), some girls noted the importance of social groups advocating for their political rights as part of a committee or organization. Others, such as the Filipino team, also spoke about the importance of socio-cultural feelings of membership, which might be achieved through ethnic clustering. We also questioned them about the potential economic advantages of being in an ethnic enclave, and many girls responded with ideas about retailing and the importance of business nodes and links.

As is evident from these responses, many of the students used the mapping exercises as a way to inform themselves about both the geography and history of their own city and neighborhoods. Marking areas and sites of importance on their maps brought the cultural history of Seattle home to them, and helped them to add to their existing knowledge of the city. They began to see the relationships between places, including where people live and where they work, and also on a broader regional scale, what it must have been like to have been quarantined or interned so far away from family and friends. This form of learning renders space and place “socially contextualized and *psychologized*” in ways that bring geography to life, and makes it complementary to a broader democratic project of citizenship formation (Gaudelli & Heilman, 2009, p. 2674).

The students’ growing interest in their own neighborhoods was manifested in some of the civic engagement worksheets that we had them fill in during our fifth session with them. Here the researchers posed a number of questions related to social and spatial “problems” that their group had faced in Seattle. Three members of the African American team responded to these questions by noting “redlining” and “discrimination” as well as the fact that “people couldn’t get jobs because they were black.” To the question of what members of the community did to solve these problems, the students responded by giving specific examples of individual and community actions and also noted that all of these actions or processes had been represented on their map. In response to a final question about how their class or they personally might get involved in solving any remaining problems their group encountered, many students wrote specific things which they felt they could accomplish. Bufanda, Bambi, and SS Edgar wrote, for example, “Stalk the police and keep a tally of what races are pulled over and for what; Join the non-profit organizations.”

Another group, which looked at the experience of Chinese Americans in Seattle, also described problems such as “laws that kept them from buying land (Alien Land Law), Exclusion Act, not allowed to be citizens until WWII.” This group also named a specific person (Wing Luke) and organizations (Labor Employment Law Office, Chong Wa Benevolent Society, and the Chinese Information and Service Center) as people or institutions that had taken actions to confront some of these problems. The two student members of the Chinese team also noted their own possible role in responding to ongoing problems for the community by indicating that they felt capable of “Alerting people of these

problems; Educating people; Video Documentary” (see Figure 9). Of the 13 civic engagement worksheets we received from the students, 4 pairs of students responded negatively to the question: “How might you or your class get involved in solving the(se problems)?” These negative reactions included responses such as “Nope” or “Our class can’t really get involved.” Eight pairs and one trio of students responded positively and with specific recommendations for activist engagement such as those quoted above.

CONCLUSION

In our work with the young teens we found that a powerful and emancipatory alternative pedagogy was unleashed through visualizing the multiple ways that cultural history becomes layered and sedimented in the urban landscape. Importantly, these visible patterns were not perceived as something fixed and unchanging, but rather as a process with ongoing effects that must be constantly negotiated, and in some cases overcome. Among the insights that the students derived, a key one was the growing understanding that both discriminatory actions such as redlining, *and* the creation of affirmative locales such as benevolent societies, are profoundly spatial processes critical in both scope and impact to historically subordinated groups. Literally “placing” people, institutions, and events into the students’ own neighborhoods through locating them on a map of the city and attaching historical and contemporary documents to each mapped space, helped them to graphically and visually connect both geography and history to the present time and place, and make it relevant to their own lives.

We sought to employ the students’ neighborhood awareness and urban geographies, and to draw on their own “rich sense of place” (Cole, 2009, p. 21; see also Gillespie, 2010). In working with the classroom teacher, however, we also corrected their many misconceptions of the city, and augmented their understandings through archival research and primary sources such as interviews. The examples from our participant observation, the students’ maps, and the written and oral work presented here were selected to manifest some of the spatial cognition and shared concerns that developed over the course of our two weeks with them. On the whole, we observed a growth in spatial awareness among the students, as well as a strong new concern about “spatial politics” related to the positive and negative geographical processes affecting group identity. Bringing together history, geography, and emancipatory politics through a collaborative mapping project helped the students to understand how minority communities are formed in and through space, and how important space is for maintaining solidarity and resisting oppression by dominant groups (cf. Grant, 2011; Mitchell & Elwood, in press; Parker, 2006).

Further, through the process of researching, mapping, and talking with each other about their own city and neighborhoods, the students began to understand that history is not necessarily a set of seemingly abstracted events that occurred sometime and somewhere else, but rather can describe something that happened here, in “our” space. Mapping “our” culture and “our” history renders these events and processes more immediate, visceral, personal, and potentially alterable in terms of their seeming trajectory. Collectively visualizing and discussing historical acts such as the quarantining of Filipinos (there were two girls of Filipino descent in the class), or redlining in the African American neighborhood where

several of the girls lived, for example, galvanized a sense of collective responsibility for these spaces and the people who inhabit them.

In her work on New Orleans, Buras (2009) wrote about the power of young people's counterstories in challenging normative ideas about market reform in the city. The students took on dominant white narratives through use of "spoken, written, and digitally-produced texts" (p. 428) to narrate struggles and expose silences in the urban history of African Americans and other minority communities. In a similar way, our middle-school students in Seattle used strategies of *counter-mapping* to resist hegemonic ways of representing space. They uncovered absences in the historical record, and celebrated the multiple ways that women and minority groups had demanded and taken space in times past. Through this process, they learned about and represented new spatial narratives of the city and, as young "people's geographers," they became political actors in their own right.

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Figure 1.
From Spatial Thinking to Civic Agency

Cultural History Mapping Project Overview

Lesson 1	Making Maps: What, Why, and How <ul style="list-style-type: none"> What are maps and why do we use them? Pre-evaluation of spatial thinking Writing exercise: what/where/why? Skill: Finding and adding objects to the map
Lesson 2	Round 1: Mapping Cultural Histories: Adding Places and Context <ul style="list-style-type: none"> What goes on the map? Putting things on the map and noting general spatial context How to do research on 'place'
Lesson 3	Enriching Your Maps: Analysis and Multimedia <ul style="list-style-type: none"> Finish adding objects to the map Analyze spatial patterns in the map, using the handout with guiding questions Small group explanation of patterns Group discussion to explain spatial patterns and processes Brainstorm options for multimedia within the group maps.
Lesson 4	Round 2: Mapping Cultural Histories: Adding Multimedia <ul style="list-style-type: none"> Spend the hour updating and adding multimedia. The comments function: what is its purpose? Enrich maps through individual comments and discussion
Lesson 5	Compare and Contrast: Looking for Trends and Generating Explanations <ul style="list-style-type: none"> Walk others through the maps on a 'guided tour' Option to leave online comments and written feedback to other groups Compare and contrast groups' maps, looking for similarities and differences Start to explain why differences exist between groups Civic engagement worksheets
Lesson 6	Making it All Come Together: Discussion and Synthesis of Spatial Patterns <ul style="list-style-type: none"> Students engage in large group discussion to explain the findings of the class: why do different groups have different spatial histories? Prepare for presentation to outsiders: what do you want them to learn? Final chance to comment or update group maps Final group discussion: what did you learn?

Figure 2.
Lesson Plan Overview

Figure 3.
Black Panther Headquarter (color figure available online)

Figure 4.
Black Panther Headquarter Comments (color figure available online)

Figure 5.
Seattle Courthouse (color figure available online)

Pengturt says:
OMG this is so good:)

George says:
lol wow jing-mei...but that's a really cool story and I had never heard about it before!

pengturt says:
Here is a link: <http://www.flickr.com/photos/imlsdcc/4586982686/in/set-72157623887759605/>

Teacher says:
You may want to remind readers why the 5th Amendment was relevant to his case!

pengturt says:
he plead his fifth amendment right of the due process(law). in this case he was not given his freedom even when he was an american citizen.

Figure 6.
Seattle Courthouse Comments (color figure available online)

Figure 7.
International District (color figure available online)

Figure 8.
International District Comments (color figure available online)

Wednesday Worksheet
March 9, 2011
SECRET NAME: Bob + Peche Group Lens: Chinese Lens.

- Describe some of the problems your group faced in Seattle.
Discrimination laws that kept them from buying land (Alien Land Law), Exclusion Act, Not allowed to be citizens until WWII.
- What did members of the community do to solve these problems or change the situation?
Wing Luke was an activist for the Chinese. Activism, getting involved in politics, and forming organizations.
- Who took those actions? (This might be an individual person, an organization, or a group of people).
Also, LELC, Chinese Chong Wa Benevolent Chinese Information and service center,
- Did any of these actions or processes make it onto your map? Which ones?
~~The Chinese Info~~ All except LELC.
- Look back to question 1. Do any of these problems remain in Seattle today?
Yes. Vi Mar tried buying a house on Beacon hill but they wouldn't sell it to her because she was Chinese.
- How might you or your class get involved in solving them?
Alerting people of these problems. Educating people. Video Document

Figure 9.
Civic Engagement Worksheet (color figure available online)