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AMP Centers: A Case Study of the Intersection of Critical Urban Education and Action Research

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Abstract

The Action Mapping Project (AMP) is a youth-oriented participatory action project that conducts research and education programs in high schools and middle schools in Tacoma, Washington. AMP uses participatory community mapping to generate new forms of data and conducts educational programs with high school students that center on the use of GIS (geographic information systems) to analyze data and produce maps of local knowledge to influence public policy in underserved neighborhoods. In this article, AMP's educational program (AMP Centers) is used as a case study of how principles of action research and critical education can be placed into practice.

Keywords: GIS, action research, participatory action research, community mapping

Introduction

The transformative and emancipatory potential of urban education in historically marginalized and disadvantaged parts of cities has been a long-standing area of interest for scholars, activists, and education advocates (see Castells, 1999; Giroux, 2016; Richardson Bruna et al., 2020). Dewey's foundational work (1915, 1922, 1963) on the role that educational systems play not only to educate youth, but also to prepare them for participation in a democratic society is notable in any reflection on urban education. For urban high school students in particular, the formation of identities as young adults and as citizens in a system that has historically under-represented their lived reality is stifling. As Lyiscott et al. (2018) suggest, "especially in the turbulent sociopolitical climate of the Trump era [and subsequent social upheaval]—an era of national discourses that promote xenophobic and racist policies and practices" (2018, p. 234), the everyday classroom is inextricably linked both to micro and macro experience. Thus, regardless of intent, without critical and deliberate engagement education systems can become constitutive elements of a process that reproduces oppressive conditions in urban places already fraught with challenges of socio-economic distress and historical neglect. Fortunately, as evidenced by the work of scholars such as Abraczinskas (2020), Tuck (2019), and Warren (2018), considerable progress has been made to re-imagine the practice of education in urban settings.

This article draws on a case study of a partnership between multiple agencies in Tacoma, Washington to consider the impact that action-oriented research in public school settings might have both on students and the communities where they live. In this case, the Tacoma Public Schools (TPS), Communities in Schools (CIS), and the Action Mapping Project (AMP) at the University of Washington Tacoma worked together to establish a network of after-school research centers that generated spatial data about the lived experience of youth while also providing high school students with credit-bearing educational, professional development, and action-oriented research opportunities. Considering the methods and outcomes of the project in this case study, I discuss how similar work might proceed by building on successes and re-thinking areas where the project struggled.

Critical Education and Action Research

Reflecting on how education can become a constitutive element in the reproduction of oppression, Freire (1973) spoke to the need to ground pedagogy in a critical and dialectical engagement of social structures and institutions. For members of oppressed and marginalized groups, it is not enough to provide education with the hope that it motivates more equitable social systems. Instead, Freire suggested that members of these groups be engaged in ways that empower them to have a hand in the co-production of knowledge, not with the intention to eradicate educational systems, but rather to re-imagine those systems by empowering marginalized and oppressed groups to become constitutive elements in a dialectical education process that validates the lived realities of its participants. Doing so, Freire argued, would cultivate among learners a critical consciousness key to overcoming and transforming oppressive social and economic systems that reproduce conditions of distress, disadvantage, and inequality.

Earlier in the 20th century, Dewey (1922) had recognized the importance of critical grounded education to prepare youth to function effectively as citizens in a politically challenging and often-times unjust social system. Curriculum, he offered, should be clearly tied to students' experiences of reality. As a pragmatist, he sought ways to educate through hands-on activities that provide context and relevance to educational activities that might otherwise leave youth wanting for understanding beyond the confines of the classroom (Dewey, 1963). More recent work by scholars such as Castells (1999), Giroux (2008), and Flecha (2011) also interrogate the ways that contemporary education can be viewed as a reproductive element in ongoing systems of oppression that fail to prepare marginalized youth to function as effective participants in a reality that is composed largely of barriers to success and social change. From this standpoint, to imagine the emancipatory possibilities of urban education youth must be situated as both learners and co-producers of knowledge that better reflects the conditions and experiences of their daily lives.

Moving from theory to practice, Caraballo et al.'s (2017) overview of Youth Participatory Action Research (YPAR) captures the trajectory of a body of recent scholarship that moves to "take inquiry-based knowledge production out of the sole hands of academic institutions and include the youth who directly experience the educational contexts that scholars endeavor to understand" (p. 312). Warren and Marciano (2018) further offer that not

only can YPAR do more to engage youth in the education process, but that the practice ultimately leads to more equitable outcomes. By drawing historically underrepresented students into activities that valorize their voices and experiences, educational possibilities emerge that might not otherwise have been possible.

Scholars of action research have long argued that participatory, community-based/driven efforts are better equipped to confront systems of power, empower marginalized groups, motivate immediate change, and cultivate lasting capacities within communities (e.g., Brown & Tandon, 1983; Cornwall & Jewkes, 1995; Kindon, Pain, & Kesby, 2007; Whyte, 1991). Standing in opposition to extractive models of scholarly work in urban places that privilege the production of data for academic reflection, critique, and publication, participatory action research (PAR) and community based participatory research (CBPR) place researchers, residents, officials, and practitioners on level ground in efforts that prioritize action as an outcome to activities that reflect the array of knowledge and experience offered by all participants. As in critical education praxis, there is an explicit understanding that the lived reality of marginalized groups is a potent additive to practices that have tended to neglect or smooth over the voices of residents in distressed urban places. (Corburn, 2005)

YPAR, as a branch of PAR and cousin to CBPR, functions pedagogically to "create the conditions for young people to step back from their world and see that what they might have taken for granted is something that can be transformed" (Caraballo et al., 2017, p. 315). Paris (2012) argued similarly that culturally sustaining pedagogies aim to center, value, and embrace the diversity of languages, cultures, and experiences students bring to the table in educational situations. What becomes clear when knitting these thoughts into practice is that, as Barton (2005) offered when speaking specifically to science instruction in underserved urban places, forging connections between the classroom and the lived realities of youth can be transformative.

In the case-study presented below, principles of action research and critical education are explored by a project in Tacoma, Washington. Engaging issues of equity and livability in several underserved urban neighborhoods, the project works with youth at high schools and middle schools to foster participation in action-oriented urban planning and community development processes by young residents. Given the proximity of the author of this paper to the project at hand, methods used to discuss the work draw alternately on case-study and self-study approaches.

AMP: Project Background, Context, and Participants

The Action Mapping Project is the product of a collaboration between several not-for-profit organizations and public agencies in greater Tacoma, Washington. Its stated mission, "to engage issues of livability, equity, and voice in marginalized neighborhoods through the use of participatory data collection, spatial data analysis, mapping, and data visualization" is realized by a set of core activities: "[1] Empowering youth to transform their everyday experience and neighborhood knowledge into information that can be used to advocate for change. [2] Motivating neighborhood improvement activities that reflect the interests, culture, and priorities of residents. [3] Collaboration with partner organizations, neighborhood groups, and other placemakers to generate new understandings of marginalized places" ("Action Mapping Project | Our Mission," n.d.). AMP is, in short, a participatory action project that borrows principles of community based participatory research to generate new forms of actionable data that can be deployed in neighborhood planning and policy-making processes. It began as a pilot project in 2017 and had expanded to include three out of five high school catchment areas in the city by 2020.

Youth demographics in the Tacoma Public Schools (TPS) system mirror the broader demographics of the city. To that end, TPS student demographics are as follows: 37% White, 21% Hispanic/Latino, 15% Two or more races, 13% Black or African American, 9% Asian, 3% Native Hawaiian or Pacific Islander, and 1% American Indian or Alaska Native. All students at schools where AMP is active are given the opportunity to participate in the project, though participation is entirely voluntary and anonymous. This said, most students (~90%) opt to participate in sketch mapping workshops when they are offered. For students who choose to participate in the sketch mapping workshops described below, maps contain no identifiable information and are aggregated into large datasets representative of composite youth experience. Students who participate as members of AMP Centers discussed below are considered formal members of the AMP team and work with students from the university to build skills, facilitate mapping workshops, and reflect on the power of voice in planning and policy-making.

Figure 1: Students sketch map responses to survey questions about daily activities.

Figure 2: Students create qualitative responses to questions about everyday experiences.

Methods: Participatory Mapping with Youth in Schools

AMP's primary method for data production is *participatory community mapping* (Boll-Bosse & Hankins, 2018; Kelley, et al., 2012; Swords, et al., 2019) via sketch map survey. Working directly with youth at middle schools and high schools in the Tacoma Public School district, AMP builds spatial datasets that reflect the everyday experience and perceptions of youth in Tacoma. Using school catchment areas to organize the city into neighborhoods, workshops are organized by the AMP team in high schools and middle schools to provide opportunities for all students in these schools to participate in the production of data about the neighborhoods where they live—the goal of the project is to collect sketch maps from approximately 80% of students in all middle schools and high schools in Tacoma.

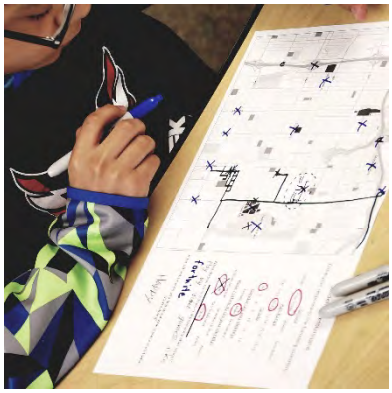

Figure 3: Middle school student completing the AMP sketch map survey.

Between 2017-2020 more than 10,000 middle-school and high-school aged youth participated in the early phases of the project. Workshops are held during class time and are facilitated by a combination of students from the schools and undergraduates from the university. Datasets produced during sketch mapping workshops begin as individual sketch

maps drawn by middle-school and high-school students during sketch mapping workshops at their schools (figures 1-3) and are then modeled into heat maps that represent aggregate youth experience and perception of neighborhood spaces (figures 4-5).

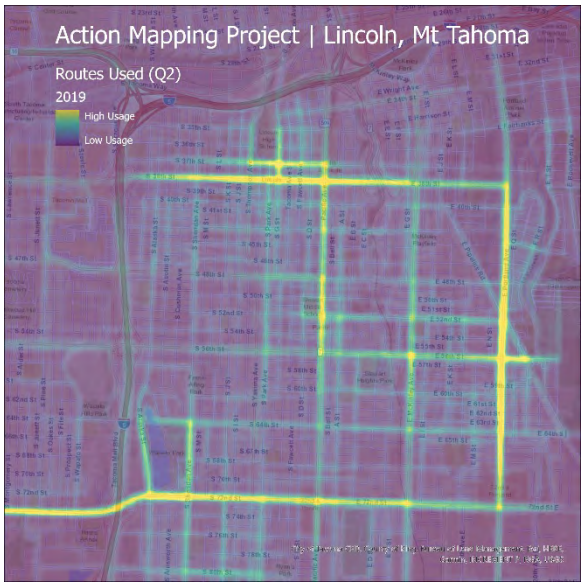

Figure 4: Aggregate youth experience of routes in and around their neighborhoods. Brighter routes are used more heavily.

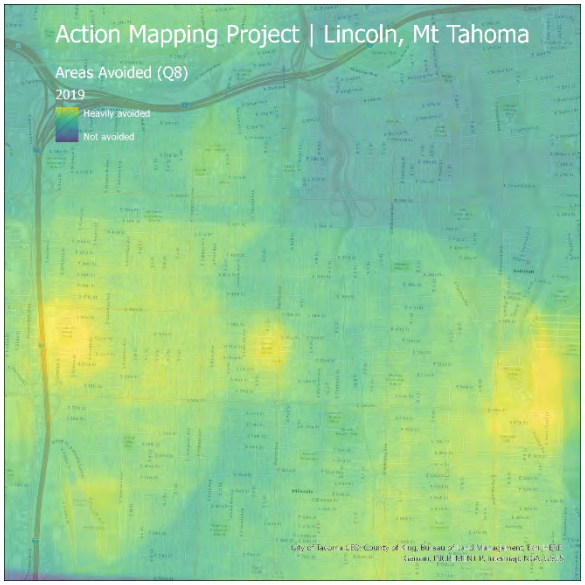

Figure 5: Aggregate youth experience of neighborhood spaces. Brighter spaces are more accessible and popular.

Methods: Establishing AMP Centers in High Schools

After two years of piloting sketch mapping workshops in high schools and middle schools, AMP began to work with Tacoma Public Schools (TPS) and Communities in Schools (CIS) to establish an educational program staffed entirely by undergraduate and graduate students. The educational program was expected to broaden the impact of the community mapping project by building a curriculum that would empower high school students to engage with issues, technologies, and policy-making practices that directly affect their everyday lives.

The work of critical education theorists and scholars of action research were fundamental to the conceptualization of AMP's education program as the AMP team considered how best to blend its existing research infrastructure in an applied urban education program. Student participants in AMP's educational program were, for instance,

referred to as members of the team and were treated as equal participants in the research process. Their experience, perspective, and input as residents of the communities and neighborhoods where AMP conducted its work were viewed as integral to the success of the overall project. Undergraduate and graduate student team members were positioned alongside high school team members as participants in an action-oriented project. And, finally, the project aimed to avoid the pitfalls of conventionally extractive urban research while being complementary to the existing curriculum at the high schools.

Unsurprisingly, the conceptualization of AMP's education program was exceedingly less complicated than implementation. Coordination among administrators, school staff, teachers, and outside partners was required to identify space, establish on-site policies, acquire technology, and recruit students. To begin, the educational program was designed to be delivered using dedicated lab spaces at schools during after-school hours typically reserved for extracurricular activities. Dubbed *AMP Centers* by the project, each of the three pilot programs was established in coordination with TPS' Career and Technical Education (CTE) office, a teacher and vice-principal at each high school, and a Communities in Schools (CIS) advisor at one high school. Involvement of at least one teacher at each campus was key, because although undergraduate members of the AMP team were designated to lead the AMP Centers, TPS required a staff member to be present during activities on school campuses that included high school students. Thus, TPS agreed to provide space and access to computers on each campus as well as stipends for teachers who served as on-site supervisors of the AMP Centers. Since technical curriculum would be delivered in AMP Centers, TPS computing staff also worked closely with the AMP team to acquire, license, and install software on campus computers. AMP Center meetings were scheduled for two hours twice per week immediately after the school day.

AMP Center curriculum was designed by the AMP team in collaboration with CTE to serve three purposes. First, students who participated in the project would complete the TPS professional development program during AMP Center hours. This standardized curriculum consisted of lessons that prepared students for entering the job market (such as creating a resume and participating in a job interview) and was facilitated by the AMP team. Second, students gained an introductory experience in GIS (geographic information systems) by working through a series of assignments derived from the *Introduction to GIS Class* at UW Tacoma.

Finally, students were introduced to concepts in urban planning and community development that connected the technical skills they were acquiring to the practice of placemaking (broadly defined to include urban planning, community development, and neighborhood advocacy). After completing one semester in an AMP Center, students were awarded one CTE credit and were then eligible to join the AMP research team as facilitators of sketch map workshops and data analysts. High school students who completed the AMP curriculum also gained streamlined admission to GIS programs at the university and were in regular conversation with faculty, graduate students, and undergraduate students at the university.

Findings and Outcomes

The schools selected for the first three AMP Centers are in the most historically underserved areas of the city and thus offered the best possibility to draw marginalized youth into an educational/action-research project. Collaborating with CTE and CIS also opened possibilities to recruit students to the project who might otherwise avoid extracurricular educational activities. In total, approximately 25 students at the three high schools participated in the pilot phase of AMP's education program. Student participants in AMP Centers were more diverse than the general student population, with 80% being students of color.

Participation was greatest when AMP partnered with CIS for student recruitment (this was at one of the three schools). At this school, CIS worked with the AMP team to identify at risk students who would benefit from the alternative style of learning provided in AMP Centers. At the other two schools, recruitment was performed in collaboration with teachers and student clubs on the campuses and was less successful. Student participants from these schools were more representative of high-performing students who were involved in other extracurricular activities and attracted to the opportunity to learn GIS. Retention of students and the completion of the curriculum was moderately successful, with approximately half of students who joined the program completing the full semester of work. On a lighter note, the AMP team found that simple enticements, such as snacks and drinks, provided student participants a level of comfort after regular school hours that helped to facilitate the educational process and cultivate a less formal, more collaborative setting.

Using an approved, pre-existing professional development curriculum meant that the AMP team had only to become familiar with its delivery, which was a straightforward series of modules that students completed during AMP Center hours. The GIS and planning/community development curriculum was, however, a greater challenge for the team. Early in the process the AMP team decided to blend an approach to GIS that emphasized its value as STEAM education—teaching students a range of skills tied to natural science, math, cartography, and graphic design. Curriculum was then modeled on courses offered at the university but adjusted for the high school student. In addition to heavily rewriting instructions and learning outcomes, the focus of lab assignments was also oriented on topics more relevant to high school students. This meant, for instance, that instead of mapping cities or counties, students were taught in an early assignment to make maps of their homes and neighborhoods using a combination of Google Maps and outside data sources.

AMP Center student teams were also trained to facilitate sketch mapping workshops. Once trained, they worked alongside university students to run these workshops in classes across their campuses. As noted above, results from these workshops were used to generate large datasets about the youth's experiences that are being used to influence policy and investment in and around students' neighborhoods (more on this in the following section). Unsurprisingly, particularly in light of previous scholarship (Barton, 2005; Caraballo et al., 2017; Paris, 2012), empowering youth not only to participate but also to take ownership of an action-oriented and community-based project was a key moment in the AMP curriculum.

The CIS partner noted, for instance, that students in her cohort who were broadly disengaged from traditional academic work were uncharacteristically engaged in the processes of workshop facilitation and discussion of data related to their everyday lives. In one telling example, students in this AMP Center were asked to use a GIS to draw maps of their home. Outcomes for this assignment were primarily technical, introducing students to using different types of data layers and visualization techniques to provide scaffolding for more advanced skills in subsequent assignments. Map outputs from this assignment generally include an icon representing the general (or specific) location of a students' actual homes as well as key features (assets) that the students identify and map alongside other layers of data around their homes. These maps are then used to discuss not only technical concepts, but also the geography of cities with regard to such concepts as access to resources, public spaces,

transportation, etc. But, when students presented their home maps to their peers, as was common practice for all mapping assignments, there was a notable outlier.

One student had made a map that included multiple 'home' sites. These sites included multiple single-family homes, a park, and a parking lot of a home improvement center. In discussion, this student shared with the group his struggles with homelessness and the ways that it affected his experience with the urban environment. Moving from couches at friends' houses, to encampments at a park, to a trailer in a parking lot, and occasionally a bedroom at his grandmother's home, the reality of his 'home' challenged conceptions of what it means to *live* in the city. The map that he made, and his discussion of his everyday life, opened an opportunity for the youth participants to rethink how cities are designed to function and, more significantly, for whom cities are designed to serve.

Students' reactions in the session alternated from gestures of support to discussions of change and the power of storytelling and data about experiences that are outside the norm. Being a part of an educational experience that was connected to broader goals of community change empowered students to consider the role that their lived experience could play for planners' and policy makers' efforts. Drawing again on Barton's (2005) call to action, students at this AMP Center were engaged in the educational process by virtue of the agency that is opened for them.

Discussion and Conclusion: Valorizing and Activating Youth Voice

Considering the work of critical educational scholars such as Dewey and Freire, establishing AMP Centers in schools was an effort to bridge the gap between classroom and practice—providing opportunities for students to see the ways that education can empower individuals to have a direct impact on their own communities. AMP's expectation for the educational component of the project was that youth at the three pilot schools would engage more deeply in an effort to rethink how to activate youth voice in policy-making scenarios. Although outcomes from the pilot project were mixed, they were generally positive. Recruitment and retention were barriers to broader successes across the three pilot schools. Overcoming these barriers in future iterations of the project are easily overcome through more direct partnerships with existing programs (such as CIS). However, even with limited participation at AMP Centers, there were notable successes.

Youth were empowered to share experiences, engage in processes of data collection, and recognize the power of their voices. As Paris (2012) suggested, the success of programs such as AMP hinges not simply on ensuring that pedagogy is relevant or responsive, but also that it embraces and valorizes the unique lived experience of students. In the three pilot schools, AMP Center students facilitated dozens of sketch mapping workshops that generated hundreds of new pieces of data, each representative of a unique student voice. In framing this paper, work from Carabello et al. (2017) was used to suggest that YPAR is most successful when youth are provided the opportunity to re-imagine possibilities—to rethink, in other words, the necessary conditions of their lives. To that end, students who participated in AMP Centers or sketch map workshops understood that the work didn't end with discussion or data collection. Their voices, the data they generated about their lived experience, would make its way—be activated—in policy-making processes.

To activate data that represent youth voice in largely underserved areas of Tacoma, AMP works with partners in local government agencies and not-for-profits that either conduct livability-oriented projects or policy advocacy. Walkability, for instance, is a key area of concern not only for city leadership, but also for youth who live in neighborhoods that have seen sidewalks, parks, and residential streets fall into disrepair. Drawing on data generated by youth in sketch mapping workshops, AMP entered into a partnership with the Safe Routes to Schools program to identify candidates for municipally funded improvements geared to young residents.

Similarly, data generated by youth in AMP sketch mapping workshops are being used by the City of Tacoma's neighborhood planning program to inform a series of publicly funded livability initiatives. Beginning in the neighborhood surrounding one of the pilot phase AMP Centers, the city is conducting a long-term neighborhood planning initiative that will better reflect the lived experience of residents in historically neglected parts of the city. During the COVID-19 pandemic a series of virtual neighborhood meetings were facilitated by AMP alongside the city and several neighborhood partners. Youth who had worked with AMP in schools and their parents were present at these meetings to participate in planning exercises.

Both of these cases, safe-routes and neighborhood planning, represent the types of transformative practices that are attainable by engaging youth in processes that have historically neglected the voice of younger marginalized residents. For youth, these processes signal that they are not only being heard, but that they are being listened to by people in

power. To take a Freirean perspective, youth are a part of an educational practice that cultivates within them the knowledge that change is possible and that oppressive systems can be overcome. Pedagogically, youth at schools where AMP was active were engaged in educational activities that connected the uniqueness of their identities and everyday lives to processes of community and social change. And by fostering relationships with policy-making agencies, AMP can engage youth in discussions about social change that are not only theoretical, but that also have tangible (visible) outcomes in their neighborhoods.

By foregrounding the action-oriented outcomes of the research project, the educational program placed into a relevant context the technical and professional development curriculum that might otherwise have lost the interest of students in after-school hours. Instead of lecturing to students about the geography of poverty in the US, teaching basic descriptive statistics in a vacuum, or delivering technical lab assignments using generic canned data from software providers, the AMP curriculum centered the students' unique experiences of their city. And the neighborhoods, parks, vacant lots, streets, and alleyways that provide contour to the everyday lives of the students were reimagined both as laboratory and data for analyses of equity, resource distribution, and livability in the city.

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