Conclusion: Mapping for a Better World

Throughout this book, we advocated a critical pedagogy of place-based inquiry. We believe that educators should use critical place-based inquiry to both develop students’ reasoning skills as well as to promote engagement in their communities. Academic courses can become opportunities to develop skill sets needed for making sense out of real-world, place-based data. When students are confronted with the legacy of social injustice or structural inequality as part of their coursework, they will gain the foundation for imagining social change in their communities.

When designing critical place-based inquiry, educators need to shift focus from “education to cover content” to designing “apprenticeships to the world” (Prensky, 2016, p. 29). By doing so, we empower students to gain real-world skills through actual accomplishments where they can see the value of having a positive impact on community and society. Educators can connect place-based inquiries to the big ideas and the essential questions addressed in their courses frequently and intentionally. Students can appreciate why they engage in particular learning activities and assignments. Big ideas and essential questions are by definition real-world oriented and the skills of persistence, self-motivation, and self-regulation, popularly referred to as “grit” by Duckworth (2016) enable students to move past some of the challenges encountered when navigating the world. Utilizing critical inquiry skills to explore place can further our journey in this direction as we challenge ourselves to imagine a better world.
In this chapter we look at the value of purposeful, authentic learning that comes with well-designed critical place-based pedagogy. While this pedagogy has the potential to be deeply meaningful, the design process must also take into account the value of strong community partnerships that guide student inquiry and the ethical considerations associated with the use of location-based data, as well as the assumptions we make regarding students’ access to spatial technologies. Events such as COVID-19 and the public outcry over racism and police brutality add a sense of urgency to our call for a critical place-based pedagogy that is more inclusive and offers an understanding of the communities and the environments in which we live, work, and play.

**Purposeful, Authentic Learning**

Purposeful learning occurs when students are motivated to make self-improvements as well as to develop their connection to the world (Yeager et al., 2014). Even a brief, one-time intervention that promotes self-transcendent, purposeful learning can have benefits that last for months. In several studies with over 2000 adolescents, Yeager et al. (2014) found that with this type of learning, math and science grades improved, students were more likely to enroll in college, and academic self-regulation on tedious schoolwork increased. Students who assumed a mindset of being self-transcendent and becoming engaged in purposeful learning demonstrated that they wanted to become an educated citizen who contributes to society. In contrast those students who only had self-oriented motives for learning, such as the desire to have an interesting or enjoyable career, were less persistent, less self-motivated, and seldom moved beyond an immediate learning challenge. Educational researcher Camille Farrington noted in an interview that nurturing a “sense of-purpose mentality” means students take ownership of the learning process by putting “those pieces together in their own heads, for themselves” (Chen, 2014, para 13). Students viewed being responsible for their own learning very differently than being told by a teacher or parent to complete an assignment. Instead of this importance being heard by our students as “…because blah, blah, blah,” Farrington and Yeager point out that more authentic assignments motivated students not only to complete the assignments, but also to be engaged in their communities (Chen, 2014, para. 16).
The value of authentic learning is becoming more evident and accepted into formal education. Authentic learning is characterized by:

- An activity that involves real-world problems and that mimics the work of professionals; the activity involves presentation of findings to audiences beyond the classroom.
- Use of open-ended inquiry, thinking skills and metacognition.
- Students engage in discourse and social learning in a community of learners.
- Students direct their own learning in project work (Rule, 2006, p. 2).

As schools reimagine how to provide these authentic experiences, we suggest that the answer may lie with a critical pedagogy that occurs outside of a four-walled traditional classroom.

Getting outside can be a positive multisensory learning experience. In fieldwork, students integrate what they see, hear, smell, and feel. Recent research on special and additional needs students who respond well to the combined use of senses indicates there are increases in focus as well as gains in learning for many populations (Kukulska-Hulme et al., 2020). While there are classroom-based or online activities that can incorporate authentic learning, extending learning into the outdoors makes strong links between theory and practice.

Support for the idea of place-based learning outside the classroom also comes from recent developments in posthumanism, as highlighted by the Open University’s ten innovating pedagogies for 2020 (Kukulska-Hulme et al., 2020). Advocates of posthumanism suggest that we move learning outside the classroom, and consider the notion that humans should no longer be at the center of everything. With place-based inquiry, it is possible to take a careful look at our place in the world, and re-center investigations on our relationship with nature and our impact on the environment, while recognizing the decreasing separation between humans and technology (Kukulska-Hulme et al., 2020). This approach challenges educators to think more broadly about the purpose of “classrooms” and where learning should take place. The posthumanist approach challenges us to question our relationship with the world.

A second innovation listed by the Open University is the social justice pedagogy that enables our students to become active citizens who
critically explore systems of power, privilege, and oppression (Kukulska-Hulme et al., 2020). Throughout this book, we have discussed the importance of exploring multiple perspectives, particularly the perspectives of those who are often marginalized. By investigating topics from multiple perspectives, students can take into account different points of view as well as the progression of events and agents that shape our communities, which can include animals and plants, in addition to people. In the process of group analysis and inquiry, students are invited to formulate their own perspectives and become active participants in the community dialogs that unfold. With critical place-based inquiry, they can look at map data and question how, why, and by whom these data were produced, and whose stories are not being told. They can examine the historical patterns that led to structural inequality or limited opportunities. Following a social justice pedagogy, students can critically examine the assumptions that guide knowledge production.

**Community Partnerships Chart**

**The Path for Student Activism**

Authentic, purposeful learning requires authentic community partnerships. Our goal should be developing a “community of practice” that shares a common purpose, guiding the critical inquiry activities of educators and their students as they reflect on and address local concerns. By supporting the members of those communities who are challenging inequalities or confronting social injustices, students can become engaged members of the community. As an example, the field of transformative geography takes a step in this direction; students are encouraged to use geography in a democratic and inclusive way for the “well-being of people and the environment in order to improve the world” (Kirman, 2003, p. 93). This approach combines three components: critical thinking, decision-making, and action. Throughout Kirman’s framework, there is an emphasis for ethics and the care and respect for human dignity and human rights. Students may anticipate events or respond to existing events; students may decide to refrain from action. Students might act individually or collectively to lobby politicians. They may write the affected parties, involve the media, clean up the environment, or circulate petitions (Kirman, 2003). In all these forms of participation, the main goal of student engagement for Kirman is being a good citizen and a steward of the Earth.
Critical place-based pedagogy goes one step further by framing the location of study in terms of the broader social contexts that are shaped by historical and contemporary patterns of social and economic inequality. By incorporating the views of community members who may be vulnerable or those who are often excluded from decision-making, a more holistic approach to the studying of place emerges. While a fair number of place-based curricula advocate student activism, we advise extreme caution. Unless students happen to be members of the community of study, they should always play a supporting role when it comes to activism.

Let’s look at an example of collaborative mapping that was used to promote socially transformative civic engagement (Gordon, Elwood, & Mitchell, 2016). Undertaking the mapping process itself developed the student’s critical spatial thinking skills. When the students collaborated in reflexive group dialog, they were challenged to consider the broader social context that generated social and economic inequalities. Students developed the ability to identify the spatial component of social inequalities, to understand how those spatial inequalities were perpetuated, and then connect civic responses to both the social and the spatial: “In mapping these spatial dimensions of social histories, some girls began to make connections between spatial exclusions and social prejudices” (Gordon et al., 2016, p. 564). Interestingly, these researchers recognized that through “offline” conversations with community members, the students developed an appreciation for studying spatial patterns in an authentic context and were sensitized to multiple perspectives on civic issues. Conversations with community members are a crucial starting point for educators who are designing critical place-based inquiry activities.

Community partnerships must guide student activism. This dynamic is well-documented in the service learning literature, where we have a significant body of work identifying the need to respect the experiences and knowledge of local community groups, to develop trust and honest relationships, and to challenge the power structures created by the elite groups with privilege in those communities (Cahuas & Levkoe, 2017). Educators must work with identified community partners when designing place-based inquiries. The working relationships with these community partners are as important as the spatial learning objectives. The following questions are helpful for fostering healthy community partnerships that are mutually beneficial and reciprocal:
1. What kinds of privilege do I bring to my role as an instructor and/or how have I been marginalized within the academy? How does my syllabus and course material address issues related to race, gender, and other axes of difference (are these issues present or absent)? What gaps exist and what can I do to address those gaps?

2. Who are my students? How can I make a welcoming and safe learning environment for students of color and students from marginalized communities? How can I create space in my classroom that bolsters meaningful conversation and supports student input and creativity?

3. What relationships do I already have with local communities? What work would need to be done to strengthen those relationships or build new ones? How can I connect students to appropriate service learning placements that meet community needs as well as achieve academic goals?

4. How am I listening to, and understanding the needs and goals of community partners? Am I measuring my success by the extent to which I have listened, understood, and met the goals of these partners? Where may I encounter challenges and what supports do I need to navigate those challenges? (Adapted from Cahuas & Levkoe, p. 260).

For place-based inquiry, we suggest adding a fifth prompt that takes into account how a student’s individual life experience might influence the effectiveness of place-based pedagogy:

5. How might my students of color or students who grew up in marginalized communities experience this place-based activity? Does the assignment give them the opportunity to question the assumptions that I made when creating the assignment? How can they make the assignment their own by sharing insights and interpreting their own experiences in the broader context?

Critical place-based inquiry can thrive when educators develop, nurture, and sustain strong community partnerships in a way that all parties benefit—there needs to be a common goal built on mutual respect and reciprocity. Naturally, place-based learning, like service learning, will have certain academic goals. Keep in mind that these goals suggest important
implications for both the community and community partners. It takes a great deal of time to direct and mentor students—when we ask our community partners to assume this role, it will necessarily divert their time and attention away from the work they routinely undertake.

The degree to which students enter communities as outsiders, and then see themselves as “changemakers” should also be an ethical consideration—we are calling for a more reflexive and responsive approach to place-based inquiry. Educators must respect community-guided boundaries and develop strong working relationships that last longer than a single project or for one semester. When each successive group of students builds upon the success of the local, community-identified outcomes, the learning opportunities demonstrate the value of persistence and consistency of purpose. With strong community relationships as the foundation, place-based inquiry can serve as a collaborative space that supports community-directed social change. When educators recognize and build on existing assets within a community, they can expose students to the difficult contexts in which social inequities play out, while working to understand connections between structural inequalities and lived experience (Marymount University Sociology Department, 2016).

Moreover, those engaged in place-based inquiry need to carefully consider whether the role of education is or should be community change. Bowers (2008) addresses science and environmental educators engaged in place-based learning, urging them to understand their role as “more complex than educating students to transform the local practices that are degrading the natural systems that future generations will depend upon” (p. 331). Instead of relying on abstract theories that perpetuate Western cultural assumptions, educators and students can use “thick descriptions” of the local intergenerational knowledge. The challenge of addressing the complexities associated with realizing a “better world” is not unique to place-based learning. Similar discussions occur among those who are working on all types of community engagement and service learning projects. When the classroom relocates to local communities, we need to consider complex ethical issues regarding the role of students and educators in those communities.
The Ethical Boundaries of Critical Place-Based Inquiry

The process of critical place-based inquiry offers a powerful tool for educators, and as such, careful thought needs to address the ethical concerns that emerge when using this pedagogy. There are a number of issues specific to place-based learning that require routine reflection during the planning and implementation of this pedagogy, such as the use of existing data which involves data literacy and data privacy, the collection of new data which should take into account the care for the communities and environments that we visit, and finally, the integrity of analyzing and applying location-based data.

Readily available geospatial datasets make it faster and easier to locate, use, and process information. There is an increased number of these publicly available datasets that include maps, spatial data, or geolocated images. Teachers can integrate critical inquiries by taking advantage of meaningful and relevant authentic data. When students find out what is happening in their town or they compare their town to another community, the resulting inquiry activities can be motivating, especially when students are given the chance to identify the issues (Kukulska-Hulme et al., 2020). From census datasets to public funding information, student-initiated inquiry can parallel and support community initiatives. Using tools such as the Google Dataset Search (https://datasetsearch.research.google.com/) or the EDINA Digimap OpenStream (https://openstream.edina.ac.uk/) makes it possible for students to join forces with other citizen scientists (Fargher, 2018; Kukulska-Hulme et al., 2020).

Data literacy—making sense of datasets (big data)—is an important skill that should be considered particularly as public open-source datasets become more accessible. Using these datasets in the classroom provides opportunities for students to ask questions about origins of data as well as about the need for privacy protections that should be put in place to shield vulnerable members of the community (Kukulska-Hulme et al., 2020).

Geolocated Data—A Gold Mine or Mine Field?

Along with the new possibilities associated with geolocated data come ethical considerations associated with data privacy. When you enable location services for your phone, some applications have the ability to log your movements, and can tie posts and queries to a particular location.
Who has access to these data? How are the data being used? The amount of location tracking of a smartphone by both companies and governments vary from country to country. While companies claim that location data are anonymous (meaning it’s impossible to identify individual users because the data is aggregated without identifiers), it is possible to track the patterns emerging from a series of data access points.

Combining mobile phone data with additional information can reveal a lot. For example, in 2017 after Hurricane Maria it was possible to track the migration of people from Puerto Rico to the mainland using mobile phone data (Echenique & Melgar, 2018). By tracking mobile phones, researchers were able to determine where many of the hurricane refugees went after the storm as well as when they returned to Puerto Rico. During the COVID-19 pandemic, location-based mobile phone data were used to determine whether people were observing social distancing and stay-at-home guidelines. For example, the University of Maryland developed a COVID-19 Impact Analysis Platform that uses mobile phone data to track mobility and social distancing (Maryland Transportation Institute, 2020). Even in apps where users opt-out of location tracking and the developer states it does not follow or track users, violations have been uncovered by investigative reporters and researchers (Harwell, 2020). In addition to the privacy of the user, students will need to consider the privacy of the people who are in the space being studied or mapped. Are students uploading photos of people to an online map? Who has access to this map?

Educators can reference ethical guidelines on the use of location data that are issued by professional associations such as the American Association for the Advancement of Science (AAAS). Keep in mind that these guidelines change regularly to keep pace with changes in technology. When reviewing the use of location-based data by human rights groups, and academic researchers, AAAS’ Scientific Responsibility, Human Rights & Law Program issued the following ethical guidelines:

1. Do No Harm: Identify and minimize potential risks of location disclosure, particularly as they may affect the vulnerability of individuals and populations.
2. Define Your Purpose: Ensure action is mission-driven and goal-oriented.
3. Do Good Science: Employ scientifically rigorous and responsible methods.
4. Collaborate and Consult: Engage with local partners.
5. Give Access to Your Data: Share data openly, when safe and practicable (AAAS, 2019, p. 5).

In this example, consideration is given to protecting privacy and ensuring that data are not used in a way that harms the individuals being studied.

Data Literacy and Citizen Science

Open data present additional ethical considerations. Citizen science has made valuable contributions in subjects that range from bird counts to mapping urban heat islands; generally anyone can edit these entries, and volunteers review the entries (Goodchild, 2007). Because these open datasets can contain crowdsourced or volunteered geographic information (VGI), it is possible that online maps and datasets have inaccurate or misleading information. In addition to looking critically at the source of the data, it is important for students to question the unintended or harmful uses of information available in open datasets. For example, a project developing a dataset of refugee residential patterns could compromise the safety and security of those in the refugee communities (Boyd et al., 2008). Over the last decade, the American Association for the Advancement of Science’s Geospatial Technologies and Human Rights project examined high-resolution satellite imagery of World Heritage sites that have been impacted by the conflicts in Syria and Iraq in an attempt to document looting and damage to the sites. Referring back to the AAAS guidelines on location-based data (previously listed), the fifth guideline is to “Give access to your data: Share data openly, when safe and practicable” [emphasis added]. AAAS researchers became concerned about making these data available and questioned whether data disclosures posed potential risks and dangers for nearby populations. Would making the data freely available license the destruction of cultural heritage by militant groups such as ISIS? Did the satellite images contain a high-enough resolution to draw accurate conclusions? Should these location-based data be available when there are human rights questions in crisis situations? (Hoy, 2019). Ultimately, the AAAS determined it would be best to keep the site’s identity confidential because it was not “safe and practicable” to share openly. Our students need to be sensitized to these ethical concerns when learning how to conduct place-based inquiries.

For educators, this process of critical inquiry begins with discussions prior to the data collection in the field about what kinds of photos and
other data are appropriate to post. If taking photos of people, avoid including ones where the individual can be identified (i.e., do not use photos with faces, or blur the faces, unless subjects have given consent). Demonstrating respect for communities and environments is a necessary part of this learning experience, and students need to be held accountable for doing so. The students’ agenda may differ from the needs of the population living there, so great care needs to be taken to ensure that the students’ presence is not an intrusion, especially if there are vulnerable populations. Engage the students with these ethics and complexities of data, so if and when they face them in the professional world, they will make ethical decisions.

**Place-Based Inquiry for ALL Learners:**

**Access, Positionality, and Equity**

From challenging stereotypes to validating experience from the margins, critical place-based inquiry should promote inclusion of all groups of students. We often ask students to use their own devices for collecting and posting data, which involves utilizing their data plans as well as enabling location services. While some students may not have an issue with this, others may find using their own device problematic, as we noted in Chapter 3. Students may have privacy concerns about enabling location services on their phone; they may not have a phone, or they may have an older phone that does not have much free space or an updated operating system to support installation of an app. Some students may have limited or no data plans. Other students may not have much experience with or access to technology. All of these reasons constitute legitimate concerns that ought to be taken into account when designing critical place-based inquiry assignments. Issues of equity and access should not impact a student’s ability to succeed.

In addition, the positionality of the students ought to be considered. How does a student’s race, ethnicity, nationality, and social or economic privilege impact how they interpret what they are seeing? How does their social location impact their participation in the field-based activities? Miller (2018) notes that without considering issues related to a critical consciousness of race, instructors may: “(1) privilege their own ways of knowing in local settings, (2) rely on ‘grit’ narratives as mechanisms for mediation of racism, and (3) teach non-white students that they cannot effect meaningful change for sustainability locally” (p. 847).
Educators must navigate real challenges when designing inclusive place-based activities, by taking into account how a history of exclusion might affect students’ experiences in the field. Historically not all were welcome in “the great outdoors” (Finney, 2014). Documenting the legacies of slavery, Jim Crow, and racial violence, Finney outlines the historical and cultural mechanisms that generated racialized spatial boundaries that limit students of color, but are often invisible for white students. When designing place-based inquiries, keep in mind that students of color must deal with assumptions about who belongs in a specific place, whether they are hiking on a trail or walking a residential neighborhood. Miller (2018) suggests that educators assume that “white and non-white students may interact with the land differently” and should talk with students openly about the challenges that they experience in the field (p. 854). It is only through this type of critical dialog, and by challenging the established norms that change becomes possible. By opening up a space for discussion not only are student’s experiences validated but educators can offer counter narratives, or differing interpretations of historical events.

Effective place-based inquiry needs to include a critical examination of race even when the resulting questions of difference and inequality are difficult to navigate in the classroom and may fall short of the desired outcomes. Systemic change will require a great deal of work on the part of administrators, educators, and those who live in our communities. We must confront racism explicitly and recognize that our efforts in the classrooms should not be “interpreted as an immediate solution to dismantling oppressive power structures” (Cahuas & Levkoe, 2017, p. 260)—it is only the starting point, and we have a great deal of work ahead.

**Chapter Conclusion: Final Thoughts**

So—why a critical pedagogy of place? Why critical place-based inquiry? It’s simple. All of our students are confronted with structural inequality and the power of privilege on a daily basis. For some students, these stark realities have become part of how they navigate the world; for other students, they have yet to appreciate the extent to which where they stand has been the result of privilege, or more direct paths. For all of the students, we need to have conversations about how we came to be where we are today. It’s only through careful consideration that it will be possible to reach a place in which there is not a difference in how place matters simply based on the color of your skin.
Preparing students to become engaged citizens who take evidence-based action requires a critical pedagogy—one where both students and instructors understand and take into account positionality. In order to utilize their critical thinking skills and recognize individual and structural privilege, students need to have active learning opportunities and to develop a vocabulary for examining both privilege and oppression (Hankins & Yarbrough, 2009). Through instructional design of a critical place-based inquiry we can move toward inclusion and a better understanding of the communities and the environments in which we live, work, and play.

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