Seeing the Unseen:
Critical Geospatial Mapping as a Pedagogical Tool to Center the Margins

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ABSTRACT: A hyper-standardized and alarmist educational climate in the U.S. propagates deficit discourses about students and creates a roadblock for teachers seeking to center their students' lives through critical and multicultural pedagogies. Scholars have called for attention to mapping as a pedagogical tool to unearth and push back against sociospatial injustice. In line with this, I offer the tool of *critical geospatial mapping* and provide two examples of how its application allowed preservice and in-service teachers to see the previously unseen strengths and resiliencies of historically-marginalized and multicultural communities. This allowed them to critique and reframe deficit narratives.

KEYWORDS: Critical pedagogy, critical human geography, multicultural feminism, counter-mapping

The current climate in PK-12 education in the U.S. has been characterized by a state of alarm, panic, and partisan politics (Amadeo, 2023; Lake & Pillow, 2022; Meckler, 2022). Moreover, while discourses of multicultural education and culturally relevant approaches abound, they are taken up in superficial ways that capitalize on a name while falling short of authentic application (Compton-Lilly et al., 2022; Ladson-Billings, 2021) and fail to address current issues of prejudice and discrimination toward certain racial, cultural, linguistic, religious, citizenship, and other identities. These tensions in the U.S. are not unlike those faced across international contexts as wars and conflicts result in the migration of various groups, pushed from their homelands, entering a new place in which they are unfamiliar and where their cultural ways may not be understood.

This combination of factors (i.e., sociopolitical tensions and superficial multicultural education appropriations) has resulted in a dangerous devaluing of teachers as professionals and critical pedagogues. Seen merely as implementers of standardized and scripted curricula, teachers are not afforded the necessary

time to get to know and build meaningful relationships with their students so that they can flexibly form curricula around and out of their students and their students' families' knowledges and cultural orientations. This combination of sociopolitical alarm and standardized curricula, masqueraded as multicultural and culturally relevant, results in students, and especially historically-marginalized students, being dehumanized as teachers are urged to take up pervasive deficit discourses (Valencia, 2012) and view students in terms of numbers or achievement markers (e.g., a low-level learner, a bubble or target kid, etc.). This is compounded as predominately white teachers from middle-class backgrounds, who have little or no prior multicultural knowledge or experience, work with diverse and historically-marginalized student populations (Landsman & Lewis, 2011). Given this current climate, it seems an insurmountable challenge for teachers to go against the grain (Cochran-Smith, 2001) and not fall in line with deficit views that position their students as perpetually *behind* and teachers, themselves, as *failing* to catch them up. At a micro-level, this reality should cause educators and researchers to ask: *What does this mean for everyday moments in the classroom? What does this mean for the teacher and student who must show up every day and face the barrage of messages that say "you don't measure up"?*

Attention has been given to consider how we can "fix" our educational crisis, but in adopting still more pre-packaged curricula and how-to recipe approaches, we only further center the standard over the student. Resisting these prescriptive approaches, critical, multicultural teacher educators must ask: *In the face of deficit, harmful narratives about students, how can teachers gain personalized perspectives of their multicultural students and their students' communities that reveal strength, resistance, and resiliency? How can teachers be supported in developing multicultural understandings that foster culturally relevant and sustaining pedagogies (Ladson-Billings, 2017, 2022) that embody care and lead to thriving reciprocal relationships (Reyes et al., 2023)?*

Scholars have argued that the process of mapping holds promise for critical analysis, multicultural learning, and counterstorytelling (or countermapping) that centers community assets and strengths. I join this nascent work, by first contributing a specific conceptualization of critical mapping and second, presenting two examples of this as a practice with preservice and in-service teachers. Drawing from multicultural feminisms, critical human geography, and critical pedagogy work, I conceptualize and ground a collaborative, flexible pedagogical tool I term *critical geospatial mapping* (CGSM). To maintain a material meaningfulness in this conceptualization, I draw from a feminist orientation myself as I ground CGSM in my everyday work as a teacher educator. I share two examples from the university classroom through which I aim to answer: *What does it look like to engage preservice and in-service teachers in a CGSM exercise and how does this open a space for them to begin seeing what was previously unseen about their (current or future) multicultural students and their students' communities?*[1] I propose CGSM as a flexible, interdisciplinary pedagogical tool for teachers, students, activists, and others who seek to collaboratively engage in a process of multicultural, sociospatial learning that centers previously-marginal, and often unseen, stories through mapping.

Theoretical Framing

To frame this work, I weave together three theoretical strands that are grounded in a critical paradigm: critical human geography, multicultural feminism, and critical pedagogy. Each of these strands provides a nuanced framing for how mapping can serve as a critical pedagogical tool that works toward sociospatial justice. While feminists have long contributed important, path-breaking work, geography has persistently been maintained as a masculinist field (Moss & Al-Hindi, 2008; Rose, 1993). For this reason, I explicitly draw from multicultural feminisms to highlight and build further upon feminist geographers' work on the interconnections of identity, power, place, and space. Through a feminist critical human geography (FCHG), the struggles and resiliency of women and other marginal stories are brought to the center. In concert with FCHG, critical pedagogies agree with the importance of the personal, relational, and life connection that must be made with theoretical conversations and specifically centers an action orientation that must be taken up in response to injustice.

Multicultural Feminist Work

Hurtado (2010) provided an overview of multicultural feminist work and described it as centering the diversity of women's experiences and grounded in the understandings and commitments of intersectionality, self-reflexivity, and accountability. Hurtado explained that feminists of color have considered how the intersectional nature of identity manifests across social structures, within a patriarchal society, to work in complex ways so that women and others experience disempowerment in differing ways. McDowell (1999) stated that, "The key aim of feminist scholarship… is to demonstrate the construction and significance of sexual differentiation as a key organizing principle and axis of social power, as well as a crucial part of the construction of subjectivity" (p. 8). Feminists have described how intersectional identities result in lived experiences of moving across spaces (Puwar, 2004) and existing in liminal or borderland spaces and how this brings about a mestiza consciousness (Anzaldúa, 2022) that allows for flexibility and resiliency in the face of oppressions. Through self-reflexivity, multicultural feminists have centered the necessity of attending to one's own multiple social identities and subjectivities. This attention to the self, identity, and subjectivity leads to understandings around privilege and the need for hybrid research methods and epistemological standpoints that reflect the "relational nature of knowledge" (Hurtado, 2010, p. 35). While multicultural feminist work is taken up in academic spaces, it is birthed in the lived experiences of women. Multicultural feminisms, then, help us to home in on the struggle and resiliency of those who navigate spaces of the margins and see often-unseen stories. Finally, multicultural feminist

work has called for accountability in order for knowledge production to be useful toward transforming everyday life to bring about social (and spatial) equity.

Feminist Critical Human Geography

FCHG provides a conceptual lens for understanding space in overlapping, multi-scalar ways (e.g., at a societal, local, or classroom level) with attention to the manifestations of power across and within spaces, including educational spaces (Baroutsis et al., 2017; Blaisdell, 2017; Helfenbein, 2021). Scholars have understood spaces to be continuously (re)produced across time (Lefebvre, 2000) in uneven ways that reveal how power works within and across shifting spaces to create sociospatial injustices globally as well as locally (Soja, 2010). Feminist work in geography and beyond has further nuanced understandings of power, bringing attention to elements overlooked by a patriarchal orientation (e.g., home, unrecognized economies, everyday struggles, the resiliency of women and those historically marginalized, etc.; Moss & Al-Hindi, 2008). McDowell (1999) and Puwar (2004) described how places hold meaning about bodies and belonging. McDowell stated, “Places are made through power relations which construct the rules which define boundaries. These boundaries are both social and spatial—they define who belongs to a place and who may be excluded” (p. 4).

Scholars have also described how neoliberalism shapes cities, neighborhoods, and other spaces of capitalism in connection with identity and power (Harvey, 2009; McDowell, 1999; Smith, 1990). This is seen, for instance, in gentrification, the lack of access to fresh food in some neighborhoods (i.e., food deserts), or in a lack of breastfeeding or pumping areas in professional spaces, reminding mothers that their place is in the home. McDowell (1999) wrote, “the specific aim of a feminist geography, therefore, is to investigate, make visible and challenge the relationships between gender divisions and spatial divisions, to uncover their mutual constitution and problematize their apparent naturalness” (p. 12). Beyond theorizing, then, the (re)structuring of space and place holds a material impact and meaning on our everyday lives (Lefebvre, 2000)–one based in response to our social identities and as we move within and across spaces and places. Refuting a view of this dynamic as *natural*, scholars have pointed to the interconnectedness of capitalism with identity, time, and power (Harvey, 2009; Lefebvre, 2000; McDowell, 1999; Smith, 1990) to demonstrate the intentional nature of inequitable spatial (re)structuring that impacts daily life. FCHG, then, provides a critical, interdisciplinary lens through which to center place-connected multicultural knowledges that are often hidden, unseen, or overlooked.

Critical Pedagogies

Critical pedagogy connects with FCHG to recognize *and* resist inequities faced in daily life. Though critical pedagogies have been watered down and

whitewashed (Compton-Lilly et al., 2022), two foundational understandings of critical pedagogical work must include: 1) the acknowledgement that power is embedded within and across societal structures and institutions, impacting educational experience and opportunity (or lack thereof), thus, demonstrating that education is political; and 2) the need for critical educators and students to recognize their social positioning and work together to challenge power hierarchies toward humanization and emancipation, reflecting an agentic and transformative nature of education (Darder & Baltodano, 2003; Freire, 2009). Education scholars have drawn from this foundation to present various strands in connection to the lived realities of teachers and students—too many to be able to give credit to here. Collectively, though, this work offers a critique to harmful stereotypes, tropes, and deficit-laden narratives about historically-marginalized students and their families and, instead, offers an asset- or strengths-based perspective as a foundation for action toward justice. Through the concepts of funds of knowledge (González et al., 2006) and community cultural wealth (Yosso & Burciaga, 2016), scholars have centered counternarratives of students who have often been viewed as lacking in resources, commitment, motivation, experience, language, and more (Valencia, 2012). Importantly, this work reminds us that we must not only engage with students in sociopolitical consciousness raising, but we must also let this consciousness lead into action (Freire, 2009; Ladson-Billings, 2022).

Mapping in Education

Mapping, broadly conceived, has been looked to for educational purposes due to its usefulness with comprehension and conceptual learning (Avery et al., 1996) and spatial reasoning (Bednarz et al., 2006). While semantic-based mapping, such as concept, mind, and argument mapping (Davies, 2011), has been utilized within education spaces for five decades now (Novak & Cañas, 2006), and geographic information systems (GIS) have been utilized within geography and ecology subject area classrooms (Perkins et al., 2010), more recent work has taken up mapping in interdisciplinary ways to support critical education work.

Through their edited book, *Critical Race Spatial Analysis*, Morrison, Annamma, and Jackson (2023) brought together a body of scholarship that demonstrates the significance of geospatial mapping for addressing educational inequity. This work used a critical-race lens to consider how geospatial mapping practices can push educational research forward. For instance, Vélez and Solórzano (2017) applied the GIS technique of ground-truthing, “whereby GIS technicians are sent to gather data in the field” (p. 22), through critical-race theory to reimagine this practice in research “as the process of sending community members, particularly those at the margins, to gather data in the field that either complement or dispute information portrayed in maps” (p. 22). This work also illuminates the day-to-day exertions of power that occur within pedagogical spaces (Baroutsis et al., 2017) and result in continued inequities. For example, racially disproportionate behavior referrals result in the racialization of space through

segregation of students along racial lines–that is, within-school "redlining" (Blaisdell, 2017, p. 109). While critical spatial analysis work reveals the urgency of geospatial methodologies for understanding and responding to educational inequities, another body of work has drawn upon mapping practices as a tool to support asset-based, equity pedagogies. Pacheco and Velez (2009) described the significance of GIS as a tool for their equity work as teachers, noting, "Merging GIS and Critical Pedagogy … requires that we ask how teachers and students can engage questions of space and power" (p. 294). Pacheco and Velez connect geospatial analysis with critical pedagogy. Other scholars have done similarly through the specific tool of asset mapping.

Asset Mapping as a Pedagogical Tool

Originating in the 1990s as a research method in social work (Lightfoot et al., 2014), asset mapping has more recently been applied to the PK-12 and university classroom as a part of critical pedagogies. Morgan et al. (2022) described asset mapping in connection with critical pedagogy:

> *Asset mapping* is a practice anchored in culturally responsive pedagogy (Ladson-Billings, 1995), as it encourages teachers to develop new conceptualizations of the students and families they serve from their perspective and by altering the "lens" through which they view the community they serve. It allows educators to identify strengths, collaborations, and resources within the community environment that may be integrated in the education and intervention provided to students... (p. 101)

Borrero and Yeh (2016) conceptualized the particular practice of *ecological asset mapping* (EAM) with teachers. They explained that EAM is "a pedagogical strategy embedded in a larger theoretical framework for social justice" (p. 116) and draws from the first three elements of Picower's (2012) social justice curriculum design elements to "focus on self-exploration, respect for others, and issues of social injustice" (p. 116).

As an EAM *activity*, Borrero and Yeh provided five interrelated projects:

1. the development of an ecological asset map (EAM);
2. a gallery walk where teachers view each other's maps and receive a feedback sheet from their peers;
3. a reflection paper on the process of making the EAM and participating in the gallery walk;
4. group asset mapping and analysis of school and/or community contexts; and
5. research presentation on (in)effective teaching that acknowledges and utilizes cultural assets in educational spaces

Other scholarship demonstrates the important role asset mapping can play within the PK-12 school context. Allar et al. (2017) described how asset mapping can be used by physical education leaders to support a school-community collaboration that leads to students' increased physical activity with their families; Borrero and Sanchez (2017) illuminated the storytelling and relational elements of asset mapping. Recognizing urban schools as "spaces of both oppression and opportunity" (p. 282), they applied a strength-based and equity-oriented approach to mapping within urban, public-school classrooms as "a pedagogical tool for students to visually represent personalized stories of their cultural assets and… showcase their maps" (Borrero & Sanchez, 2017, p. 279). Asset mapping has also been used with special education teachers who have students with emotional and behavioral disorders to help them reframe potential deficit perceptions and foster connections between school and home (Morgan et al., 2022). In this work, Morgan et al. (2022) highlighted the importance of starting from a historical understanding, paying attention to the sociopolitical context of the school and community, and engaging in critical dialogue.

Within postsecondary education contexts, mapping has been used as a pedagogical tool. As already presented, Borrero and Yeh (2016) used EAM with preservice teachers (PSTs) as a way to counteract deficit assumptions, develop more nuanced understandings of cultural assets, and develop critical self-awareness. As a part of this project, PSTs were asked to portray their own cultural assets. Clavijo-Olarte and Sharkey (2019) likewise used "community mapping" (p. 176) of assets, that is "institutions, associations, local economy, people, and physical locations" (p. 181), as a part of their teacher education curriculum to help teachers practice critical pedagogy and disrupt standards that did not address their students' lived realities or cultural and linguistic diversity. Luo and Park (2020) connected community asset mapping with GIS in order to support social work graduate students' service learning. They also supported students in planning ways to utilize community resources, giving attention not just to conceptual learning, but also to showing how mapping can connect with professional practices. Esnard et al. (2001) also reimagined GIS as a learning tool within the graduate classroom, asking their students to engage with community-based partners in public participation GIS, thereby developing a collaborative approach to learning for environmental justice.

Conceptualizing Critical Geospatial Mapping

I seek to build *with* this burgeoning body of work that proposes mapping as a tool for critical pedagogy by presenting a framework of *critical geospatial mapping* (CGSM). CGSM starts from the FCHG understanding that mapping is not objective or neutral, but rather a subjective, even embodied (McDowell, 1999) process of visualizing and documenting stories (Borrero & Sanchez, 2017), previously marginal and often unseen. CGSM leads to critical conceptual understandings (e.g., assets or spatial expressions of power), but is grounded in

places, drawing upon geographic concepts, such as field experience, ground-truthing, and GIS (Hope, 2009; Morrison et al., 2017). This approach to mapping is similar to others (e.g., asset mapping and critical race spatial analysis), but as a pedagogical tool, CGSM holds the *process* more significant than any final document. More than this, a *communal process* is the lifeblood of CGSM. Not able to exist in isolation, the practice must be collaboratively built out of—and also result in—ongoing critical dialogue and shared knowledge. A critical and feminist framing also necessitates that participants are self-reflexive, acknowledging their own multiple identities and ways they benefit from an uneven geospatial landscape. This can redress previous knowledge hierarchies (e.g., a higher valuing of academic knowledge) and connect to critical understandings about how one's own life is wrapped up with the lives of others (Freire, 2009). Moreover, CGSM can never exist as complete or finished since space is dynamic, shifting, and continually being (re)produced across time (Lefebvre, 2000). Rather, CGSM is a tool and text that centers an iterative, collaborative process to make visible that which was previously invisible (or ignored).

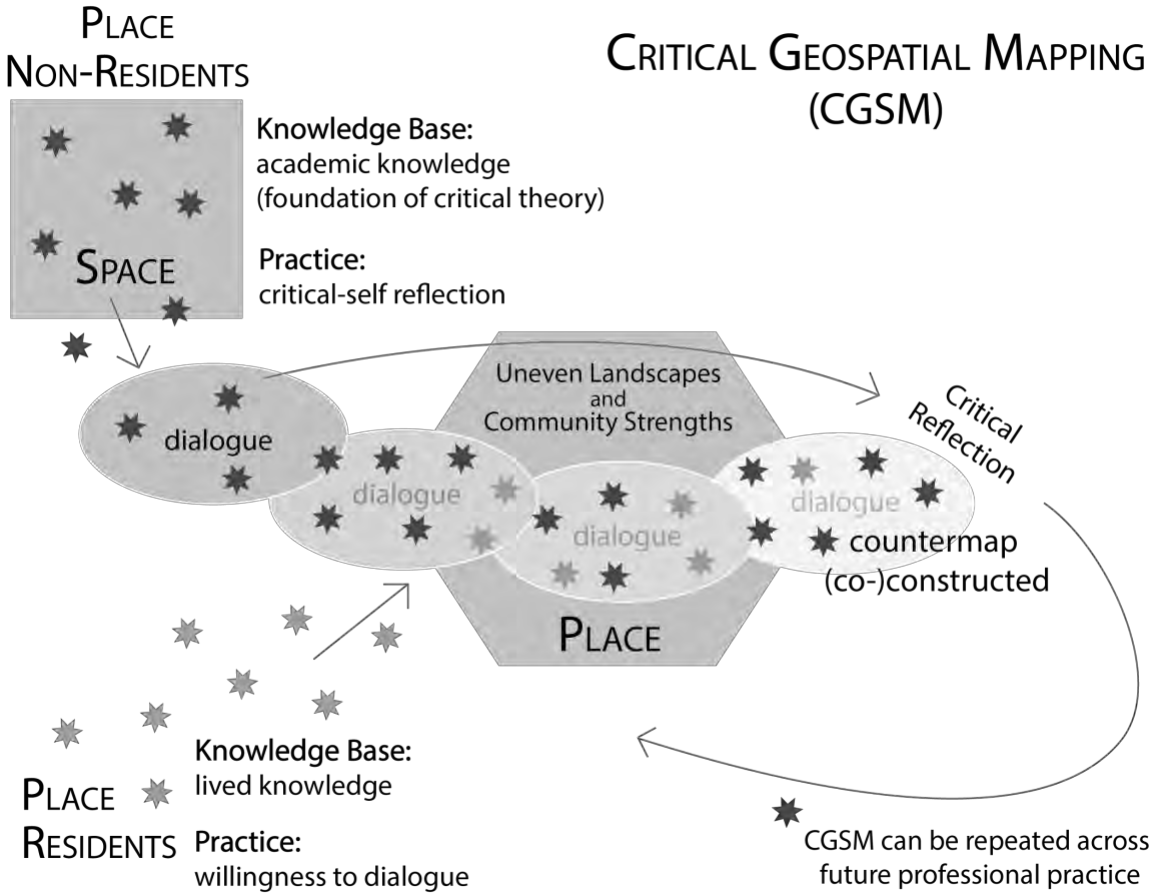
CGSM must also address both *uneven landscapes*, such as inequities through structural barriers, and *community strengths*, such as how residents respond to uneven landscape in creative and flexible ways to make do and even thrive. While most maps maintain and reproduce systems of dominance (e.g., Americentric globes that center the U.S., the Eurocentric Mercator map that mis-scales countries, or local maps that leave out smaller, local, and family-owned businesses), CGSM must investigate how historically (re)produced spaces and places are inherently uneven based on identity markers, such as race, class, gender, ability, immigration status, culture, and more (McDowell, 1999). In doing this, CGSM speaks to the workings of identity and power not just through its process, but also through the representation, that is the countermap. Yet even while recognizing the interconnectedness of social and spatial injustices (McDowell, 1999; Soja, 2010) and the impact on people's day-to-day lives, CGSM must avoid deficit perspectives that blame individuals and instead center the strengths of historically-marginalized groups, honoring the resiliency, resistance, and movidas (Urrieta, 2009) these groups exert every day in the face of the uneven geospatial landscape. Finally, in line with the theoretical framing, CGSM must facilitate an active response. This response might take such forms as local activism, sharing the countermap with others, and a change in professional practices; but, CGSM must propel, even *demand*, action toward sociospatial justice.

The following visual (Figure 1) represents the elements described here, providing a representation of the CGSM framework, even as the specific and contextualized ways it is engaged remain flexible. In this diagram, different groups (i.e., residents and non-residents) are represented by heptagrams who each must hold a foundation of knowledge and practice. For non-resident participants, this can be developed within a space, such as a course or other space created to foster this foundation. Participants then come together within the context of place to engage in ongoing dialogue that is supported with moments of critical reflection across the process. A countermap is co-constructed as a piece of this process but,

as the arrows suggest, this is not a finished point (nor does the map have to exist in a complete or finalized way), but rather just one moment within the process—a process which can then be engaged in again and again.

Figure 1

Critical Geospatial Mapping



Critical Geospatial Mapping in Pedagogical Practice

In this section, I present two examples of my pedagogical use of CGSM at the university level. Each example demonstrates how CGSM can be taken up in flexible ways to meet the needs of students within their particular context to support their development of anti-deficit practices.

Positionality and Participants

I, a Latina/Chicana/Tejana, currently a pre-tenured faculty member at a predominately white university in the Midwest, engaged forms of CGSM within two different courses. Through a multicultural feminist and critical geography lens, I recognize that my home and work lives are not distinct, but rather converge, cross over, and inform one another (Cho et al., 2023). Understanding this, I drew from my research with urban teachers and my personal life experiences. Some salient life experiences that inform my work as a teacher educator include my past participation within urban, diverse, working-class spaces through my membership with a small, multicultural, and multilingual church centrally located within a large city and my work as a middle-school teacher within a Title I school that predominately (under)served families of color. Additionally, I also drew from my experience crossing into more privileged, predominately white, affluent spaces as a middle- and high-school teacher at a private school.

As a teacher educator, I drew from my experiences and knowledge to develop and utilize CGSM within two courses. Within both courses, I leveraged the department's proclaimed commitment to fostering critical and culturally relevant teaching practices toward educational equity for all students. Table 1, below, shares relevant information of these courses.

Table 1

Courses Using CGSM

Course	Course Details	Student Demographics
"Families, Communities, & Schools"	Undergraduate; Full spring semester; Cross-listed between Teacher Education and Social Work departments; 29 students enrolled	Predominantly female students from affluent, suburban backgrounds; Multiple majors (e.g., education, social work, psych, economics); Some diverse identities including a few male students, Asian-identifying students, and non-traditional students
"Literacy & Leadership"	Graduate; 6-week sprint course; Final practicum course for M.Ed. literacy program; 13 students enrolled	Predominantly female, in-service, teachers; 1 male teacher; All white identifying; Some diversity of age and teaching experience

Process

I received IRB approval from my institution for this work and names provided here are pseudonyms. Across both courses, I used texts, discussions, and activities that centered the imperative need and great value of learning from and working alongside students, their families, and their communities. Centering a critical, multicultural, and sociospatial orientation in the courses meant challenging traditional conceptions and power hierarchies around notions of the teacher and learning and moving beyond the walls of the classroom and privileging of academic knowledge. Course dialogue engaged with identity, power, place, and inequities reproduced over time. In both courses, CGSM was a piece of a larger final project and students engaged with CGSM in different ways across the courses as it was discussed during classes, developed through field-based experiences, presented at the end of the course, and turned in as a more fully fleshed out final project that included individual reflection—much in line with how Borrero and Yeh (2016) described their EAM activity.

CGSM Within an Undergraduate Course

The aim of this undergraduate, interdisciplinary "Families, Communities, & Schools" course was to support students who would work with families and communities in their future professions. I sought to engage students in critical, anti-deficit lenses that would support their ability to enact culturally relevant pedagogy (Ladson-Billings, 2022) or practices within their future fields. The CGSM activity included collaborating with students from a predominately Black high school in a mid-sized city. All students spent a day within four neighborhoods surrounding the high school, discussing the strengths and resources of the neighborhoods as well as attending to the geospatial barriers and inequities in which the residents, mostly people of color and working class, had to navigate on a daily basis.

Centering the collaborative process, students were assigned to groups of four or five and each group included university students and high school students. This arrangement allowed all students to contribute knowledge. The high school students provided insider knowledge of the strengths and resources of their home spaces and the university students had been prepared across the course to understand the aims of the project and participate in taking up a critical lens, looking for manifestations of inequity (e.g., one group noticed an armrest in the middle of a park bench to obstruct the unhoused from sleeping on it and another group documented a surveillance sign on a public bus). One student, Maddie, reflected, conveying the significance of the collaboration:

> With the help of the [high school] students we were able to see the many different hidden jewels within their community. Where we saw a church on the corner of the street, they saw a place where their community gathered and shared meals. They talked about it with such joy and pride and they

> were pleased that this was something that they were a part of. Where we saw a bland building next to the school, they saw a recreation center where they were able to be themselves and spend their free time. They described the different activities that were offered and how they received their passes. This project allowed us to see small snapshots of the community that we wouldn't have been able to see without them.

Finally, this project drew students into ongoing collaboration and dialogue. At the end of the course, students gave collaborative final presentations, open to attendance by anyone in our college, and included post-presentation dialogue. The following fall semester, we reassembled a group, including some from the high school, to present stories and learning that came from the CGSM process at an interdisciplinary conference on equity.

This project created a new and uncomfortable space for many of the undergraduate students. Some reflected on how they had lived in neighborhoods right next to the ones we visited, yet felt they had been worlds apart. One student demonstrated her discomfort with the project when she began crying in class and expressed fear about our scheduled visits to the space and work with the high school students. These fears and discomforts demonstrated deficit and anti-Black perspectives. Yet, after the collaboration, the undergraduate students conveyed much more humanizing understandings about the families who lived within the spaces they had previously feared and avoided. One student reflected, "Every place around the world is home to someone…. It is also important to learn how that specific place creates a culture of its own within the community." Several of the students talked about the public transportation system they got to physically experience and documented this in later reflections. Students noted the difficulties residents faced with the bus schedule and disruptions, but also recognized the important knowledge they held as they navigated this system every day.

In all, CGSM helped students see urban, working-class neighborhoods in new, critical ways. Students not only showed some shift in their conceptions of the other, but students also met my challenge to think of specific applications to their future profession. Several of the education major students declared a commitment to spend time being in the spaces surrounding the future school in which they would teach. Callie, an elementary education majoring student, noted, "Geography… is involved in my future profession because when I move to a new area, I will have to learn about it." Commitments to changed professional practices were not just communicated by education majoring students, though. A student majoring in economics critiqued banking practices that limited financial loan access for working-class families, expressing a desire to find alternative, more equitable banking practices. Another student, Rebecca, stated, "My future as a social psychologist is largely dependent on my growth within my community. Without the ability to empathize and understand, I will fail at all of my goals."

CGSM Within a Graduate Course

Whereas the undergraduate course provided a longer time for building a foundation and engaging in iterative dialogue and reflection, bringing CGSM into a six-week, summer, graduate course focused on "Literacy & Leadership" with teachers who were still working during a portion of the course provided a different context for the pedagogical tool. Due to the nature of this course (i.e., a sprint course for full-time teachers), I had to reconceptualize my use of CGSM to flexibly meet the needs of my graduate students. Fortunately, this course was a final practicum course in the master's program; thus, I was able to reference prior course work (some of which I had taught) to help set up some of the critical foundation and self-reflexivity needed in a short amount of time. I again embedded CGSM within a final project. The project was aimed at developing actualized plans for engaging in culturally relevant literacy leadership through learning from and working with a school's families and local residents. Two interrelated plans had to be developed for a particular school within the district they worked, but not the school they taught at—an intentional move to avoid them simply drawing from preconceived notions. The two plans included a community-based literacy-supporting collaboration and a teacher learning experience.

Collaboration was again central to this project. First, graduate students were given the option of working through the project in collaboration with a partner (or group of three in the case of one team). While collaboration was strongly encouraged, some still chose to work individually. Collaboration also occurred through required informal interviews conducted with school personnel and residents living within the school's attendance zone. These interviews allowed graduate students to learn from others who held deeper, experiential knowledge of the space. One student, Bethany, shared the significance of collaboration to her learning:

> From the field hours within the community and interviewing… I was easily made aware of the value of the community. From observing, I could tell that it was a close-knit community where people were active and involved. It also seemed family oriented with the surrounding parks and community services. Both the school and the community members that I interviewed were eager to work together—but they wanted more ideas of how this could be accomplished. The businesses also play an important role in the community. Community members who work at businesses within the school zone gave incredible ideas on how they could support the schools. I am eager to finish this project and share the ideas with the staff on how they can collaborate together to celebrate these students.

Bethany could not have developed these insights in the same way outside of a collaborative approach to learning as centered through CGSM.

Finally, I integrated planned collaboration time into class meetings and also met with students one-on-one, outside of classes. While I did not spend time in all the geographic spaces with graduate students as I did with my undergraduate

students, I drew from my own experiences of living and working in diverse and low-income places to make suggestions about how to engage with the place and learn from observations and interviews. For example, one student, Melissa had chosen a school that included a largely rural attendance zone area and declared she would be unable to complete the project because it was “all farmland.” While I instructed students to spend the majority of their time out of their cars in the places, I adjusted this for Melissa, suggesting she begin by just driving around the area at some different times to get to know the space initially. Having some experience living in a rural area for a time, I was aware of how “informal economies” (Rose, 1993, p. 135) can be developed. Upon doing this, Melissa noticed some farm stands. She ended up visiting these small, family-owned farm stands that were not listed on local maps of the area and shopping at multiple yard sales that she found. Melissa stumbled into a previously unseen, thriving informal economy and this ended up being very meaningful to her and showed up in her presentation and reflection.

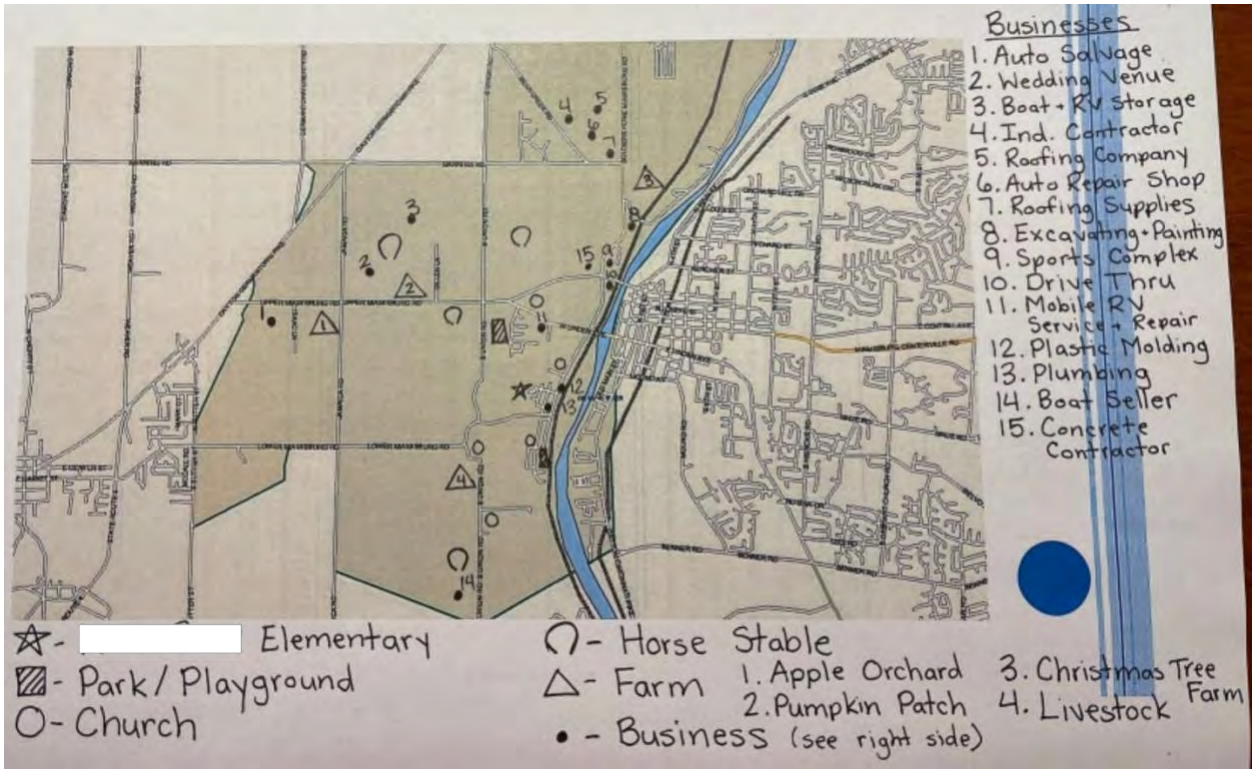
Image 1 (see below), created by Melissa, reveals how collaboration, dialogue, and reflection played an important role in the CGSM process as she was, initially, unable to see anything but farmland. After dialogue, however, she found a community thriving with small businesses and resources; a community that was able to overcome barriers of separation. Melissa discussed the natural structures of land plots and the river that served to separate the working-class community from the more middle-class neighboring space in her final presentation and reflection. As another example, my collaboration was also helpful with a student, Jim, who kept looking outside of his chosen school’s attendance zone. Jim requested to spend field hours in a coffee shop “right outside the zone.” Upon further discussion, it was revealed that the coffee shop was over two miles out of the zone. With continued conversation about the purposes and aims of the project, Jim ended up finding a lively park within the area that he spent time in with his kids. He decided to use the site for his community-based literacy event proposal. Finally, another student, Emily, determined that literacy leadership must be a collective responsibility to hold a greater impact:

> To imagine creating an on-going literacy event of this magnitude, it would be impossible without collaboration from administration, the local community and teachers. … I believe [my proposal] would be instrumental in creating a curriculum that would best serve and embrace multilingual learners. Something that I kept in mind when imagining this event, is that I wanted to reorient educators' perceptions of multilingual literacy, learners and their families in an assets-based way that would not only benefit our afterschool program but would also extend into the elementary school daily classroom setting.

Emily’s imagining of a collaborative approach to literacy work was supported through the very foundation of the project which required the students to collaborate in a variety of ways as described. Moreover, Emily envisioned how this collaboration could not only bring together one event, but also support change within the day-to-day operations of the classroom.

Image 1

Strengths of Rural School Attendance Zone



Students conveyed that the project, and CGSM as a part of it, helped them to think about the application of all they had learned through the master's program. Their discussions, presentations, and reflections also demonstrated an ability to see power manifestations within spaces. Bethany noticed the inclusion of deaf children in one park, but lamented the English-only signs that excluded English language learners and newcomers. As already mentioned, Melissa was able to see how infrastructure, including natural barriers, could separate and isolate working-class families; yet, she also noted their resiliency in spite of lack of access. She reflected, "you'll see in the interviews that the physical separation has also created a mental separation in the eyes of some [more affluent] community members." Melissa further noted the importance of CGSM:

> The mapping and community interviews we completed were great activities for new literacy leaders and educators to practice. It forces you to disregard what you think you know about a place and truly meet it for the first time… taking additional steps to see one's community through a community member's eyes will help educators uncover the skills, knowledge, cultures, etc. that may go unseen or unattended to.

Melissa's reflection draws attention to how CGSM can not only help students see the previously unseen, but how the pedagogical tool can also support students in moving past potentially biased and deficit preconceived ideas.

Mapping Our Way Forward

I have presented *critical geospatial mapping* as a pedagogical tool that draws from a collaborative, reflective process of place-based storytelling and dialogue to resist prevailing racist and deficit discourses in PK-12 education and beyond. CGSM can foster multicultural understandings and connections through the process of centering previously marginal stories. More specifically, in constructing a space to collaboratively critique and reframe dehumanizing views of students, their families, and the places in which they live, graduate and undergraduate students were able to position previously unseen and marginalized lived realities as valuable, spatially-mapped stories—texts—to be learned from. In support of critical pedagogy, CGSM opens up space for preservice and inservice teachers to learn about their students in deeper and more meaningful ways. As teachers learn about students whose racial and cultural identities differ from their own, they can engage in more authentic relationship building with their students, disrupt deficit narratives that are prevalent in schools, and move toward practicing culturally relevant teaching.

The examples presented here demonstrate three important contributions of CGSM to teacher education and community-based work and research: flexibility, a collaborative process, and interdisciplinary theories. First, the flexibility that CGSM can have in method and application in that it is able to be adapted to different contexts, needs, and professional pathways, offers a useful pedagogical tool for teacher education and beyond. I used CGSM to support both preservice and in-service teachers in expanding their multicultural understandings of unfamiliar places and groups within courses that were held in different modalities (i.e., in-person and online) and for varied lengths (i.e., full term and sprint). Additionally, as a teacher educator, I focused on the educational context but I also found that students from a variety of majors, unrelated to education, were able to benefit from the exercise and even consider applications for their fields (e.g., banking). CGSM, then, offers a way forward in fostering humanizing understandings across cultures that can facilitate change toward various anti-racist and anti-deficit professional and personal practices. Moreover, CGSM has been presented within the educational context in the U.S.; however, due to its flexibility and adaptability, it may hold use for international contexts in which different cultural groups living alongside each other can learn about and with one another. Globalization and worldwide displacements highlight this need.

Another contribution of this work is the communal, process-oriented approach to mapping. While a tangible co-constructed countermap is produced as a piece of the process, CGSM is never about an end product but rather centers a dialogic, critically-reflective, collaborative process useful for anyone engaged with

communities. This process necessitates the flexibility and adaptability, just described, to meet the needs of various groups and contexts, such as within a class-setting, as a research tool, or to support activism and work outside of academic institutions. For instance, one of my graduate students, Melissa, chose to work independently due to limiting factors (whereas other students worked in pairs or triads). When she struggled to find a starting point, I stepped in as a collaborator and shared from my own "other" community knowledge to help her get started; from there, she was able to connect with others who lived within the place she was learning about and gain important perspectives from them. Collaboration across groups must always be approached carefully, though, as projects carried out upon or about others have demonstrated ethical and moral issues time and time again. Importantly, then, the examples presented here demonstrate that issues of power can be attended to so that different groups are able to come together in productive and reciprocal collaboration. As found in others' work, a critical theoretical foundation is key for this to happen. A space (e.g., a course) for establishing critical understandings and self-reflection for those with the privilege to not already have developed those understandings through their everyday lived experiences is the starting point. From this foundation, all participants can join together and benefit. For those who have lived in more privileged ways (as many of my undergraduate students have), CGSM might serve as a tool to help them see the previously unseen. But, for those whose everyday experiences include a deeper awareness of power and spaces of marginality, CGSM can serve more as a space of allyship or co-conspiratorship and provide an amplification for their voice as the countermap becomes a text for others to learn from, similar to how Borrero and Sanchez (2017) described students mapping their own communities' assets.

Finally, the interwoven, interdisciplinary theoretical framing drawn from here offers a unique contribution of CGSM and an entry point for educators and researchers seeking to engage with multicultural knowledge sharing and learning. The flexibility and communal approach to mapping that attends to structural barriers and, often, unrecognized strengths highlights the significance of a multicultural feminist, feminist critical human geography, and critical pedagogy braiding. Bringing together social and geographic approaches to critical work through a feminist orientation opens up a range of methodological possibilities. For instance, in my courses, CGSM was engaged in using geographic methods of fieldwork (Hope, 2009), use of GIS, and ground-truthing (Vélez & Solórzano, 2017), while also drawing on ethnographic methods of observation, informal interviewing, and artifact analysis. This was all carried out through collaborative, dialogic meaning making in connection to place that is ongoing and this connects strongly to feminist epistemologies. Additionally, the braided theoretical approach of CGSM allowed for the flexible implementation and variable collaborations of the mapping activity. This meant that, whereas my undergraduates were only required to informally interview at least one local resident because they had the unique benefit of completing the CGSM alongside residing high-school students, I was able to adjust this approach for my graduate students who were not able to complete fieldwork alongside local residents. Instead, I supported them with one-

on-one conversations, such as with Melissa and Jim, and they were required to engage in a much larger number of informal interviews (around eight) and visit the place more times. Finally, the theoretical framing proposes CGSM as holding continued purpose as an ongoing process that leads to action for sociospatial justice. For my courses, this was evidenced in part through students' commitment toward changed professional practices.

Yet, even as I have presented these contributions of CGSM, I would be remiss to not acknowledge challenges. Though CGSM offers a framework, the tool must be adapted in ways that make sense for the particular context and participants and this runs counter to one-size-fits-all and standardized or prescriptive approaches often found in PK-12 and teacher education. Reflective and responsive adapting of CGSM, as well as a setup of its importance for participants to understand the value of the process, can take time and labor. As a pre-tenured faculty member, I found that this work increased my teaching workload tremendously and this can mean time away from other responsibilities and work, such as scholarship, though in this case, I engaged in research on my teaching, bringing these together. Additionally, as already mentioned, those who utilize the tool must attend to the core elements of collaboration and ongoing dialogue out of a foundation of critical understandings and self-reflection. CGSM cannot be done in isolation and, to avoid becoming yet another tool of oppression (Hope, 2009), CGSM must begin in critical self-reflexivity that is grounded in historical and sociospatial understandings of inequity (Morgan et al., 2022). Another crucial element that supports CGSM is diversity of experiences and identities across collaborators. This diversity, in concert with place, opens up a unique site of learning. But, again, this must all be approached with care due to historical and continued inequities and oppressions. Ongoing critical reflection and dialogue can help ensure power hierarchies are disrupted, marginalized voices and stories are centered, places and their residents are respected and honored, and countermaps are followed into action toward sociospatial justice. The theoretical framing, along with the conceptualization of CGSM that I have presented here, can help to ensure these challenges are overcome. More examples of work with varied groups and within various contexts will also further build upon understandings of how CGSM can be useful.

Though there are numerous possible applications for CGSM, here I presented two different ways CGSM was used as a pedagogical tool within university courses to support students who were in different contexts (e.g., academic major, identity and life experience, trajectory in career, etc.) and had different needs. In both examples, the CGSM activity supported students in seeing what was previously unseen to them. Through this conceptualization of CGSM and the presentation of two examples, I seek to contribute to the emerging and important body of work that looks to take up geography, and mapping specifically, through critical lenses. I offer CGSM as a conceptual and methodological tool rich with possibility toward identifying and dismantling uneven spaces and harmful discourses that maintain racial, cultural, and linguistic oppression–including in schooling spaces. I join other scholars in calling for increased attention to and scholarship in mapping as a critical pedagogical tool toward sociospatial justice.

[1] I acknowledge the complexity of the term, "community" (Banda, in press), and in this paper refer to it primarily in terms of people within the micro-level, geographically-based contexts that students interact with (e.g., neighbors, businesses, churches, programs, and the like). I also recognize, though, that some communities (e.g., racial, national, faith, etc.) can include group membership that exists beyond the local, geographic context.

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