



Bringing geography to the community: community-based learning and the geography classroom

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Abstract Community-based learning is a pedagogical technique designed to bring students out of the classroom and into their communities. Students typically pair with local nonprofit organizations to complete work which ties into their scholarship. Faculty, students, and community members can all benefit from these partnerships, and university-community relations are strengthened by them. These connections deepen the educational experience and improve student success and retention, and build civic engagement skills that benefit the university community and the student's home community (Strait, Turk, and Nordyke in: JR Strait, K Nordyke (eds), *Pedagogy Of Civic Engagement, High-Impact Practices, and e-Service- L Earning*, Stylus Publishing, Virginian, 2015; Bednarz in *Journal of Geography in Higher Education* 32:87–100, 2008; Mohan in *Journal of Geography in Higher Education* 19:129–142, 1995). Spatial citizenship, while vital to such engagement and to effective community participation, is seldom taught in traditional pedagogy (Kanwischer, Schulze, and Gryl in: Thomas Jekel, Adrijana Car, Josef Strobl, and Gerald Griesebner (eds), *Spatial citizenship—dimensions of a curriculum*, Wichmann Verlag, Berlin, 2012). Connecting place to pedagogy with

spatially-enabled learning helps students investigate complex global concepts at a manageable local scale. Geography is an intrinsic part of scholarship, to varying degrees, and spatial thinking can bring added dimension and value to the educational process (Vogler in: Thomas Jekel, Adrijana Car, Josef Strobl, and Gerald Griesebner (eds), *Wichmann Verlag, Berlin*, 2012). The intersectionalities which exist within the community, when examined with a spatial lens, are the core of community geography, a praxis-focused method of engaged scholarship (Shannon in *Progress in Human Geography*, 10.1177/0309132520961468, 2020). Community-based learning is not clearly defined, yet some established models exist. Place-based learning communities move cohorts of students through a curriculum that is centered on local community issues, with the community as both laboratory and lens, and building place attachment (Schweizer, Davis, and Thompson in *Environmental Communication* 7:42–62, 2013). Service learning, while less clearly defined, typically involves direct work with community organizations, identifying, investigating, and contributing to solutions for local issues (Strait, Turk, and Nordyke in: JR Strait, K Nordyke (eds), *Pedagogy Of Civic Engagement, High-Impact Practices, and e-Service- L Earning*, Stylus Publishing, Virginian, 2015; Cal Corps Public Service in *Designing Community-Based Courses*, 1–45, 2015). Built around the concept of place, the added dimension of improved spatial citizenship

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benefits both community and students. This paper will review community-based learning as practiced through upper-division service learning courses in geography at two universities, and the development of a new course, as methods of engagement with local communities through a spatial lens.

Keywords Community geography · Community-based learning · Service learning

Introduction

As universities face declining enrollments, and graduates struggle to be relevant in a rapidly changing society, the importance of real, tangible learning experiences becomes increasingly important. Community geography is a comparatively new term, but is well outlined by Shannon et al. (2020) as a praxis which connects academic and public scholars to co-produce mutually beneficial knowledge, integrating research and action. Two key methods which form the foundation of this praxis are community-based (CBL) and spatial citizenship. Community-based learning is a comparatively new spin on an old pedagogy, experiential learning, that combines civic engagement with the academic process. This high-impact practice prepares students for engaged citizenship and fosters retention and success (Strait, Turk, and Nordyke, 2015).

When CBL is centered on the relational concept of space, the development of spatial citizenship provides tangible benefits for community partners as well as students. Engaged spatial citizenship is a critical component of the development of civic skills, values and knowledge (Strait, Turk, and Nordyke, 2015; Schweizer et al., 2013). Cosgrove's assertion that "geography is everywhere" (Cosgrove, 1998), implies that to engage in community-based learning without geography is to ignore a fundamental component of that place. Students may have little understanding of their local community issues when they are focused on school, work, and perhaps even a family, unless coursework propels them into that community (Fearn, 2001). Connecting the classroom to the community provides both motivation and structure for engaging with the individuals and organizations that surround, and are typically impacted by, their school.

Community-engaged learning and geography are a logical pairing, and can be practiced in K-12 courses, as well as all levels of higher education. The key is connecting academic goals with community needs, from a geographic perspective. An environmental geography course might look at various issues as they are occurring in their community (Bednarz et al., 2008; Buckley et al., 2004), or work with local government to examine urban planning goals (Kesler-Gilbert & Krygier, 2007). More advanced students might apply specific tools, such as GIS, to provide community solutions (Boll-Bosse & Hankins, 2018; Kesler-Gilbert & Krygier, 2007; Weiner et al., 2002). When the learning is research-based, results from student investigations can then benefit the community partners, and ultimately the larger community. This paper will discuss the concepts underlying a community geography course, and examine community-based learning as practiced through upper-division service learning courses in geography at two universities, and the development of a new course, as methods of applying the praxis of community geography.

Community-based learning

Community-based learning (CBL), sometimes called community-engaged learning or service learning, is a pedagogy which engages students with material outside of the classroom, typically (although not exclusively) in the community in which their school is located (Bednarz et al., 2008; Bringle and Hatcher, 1995). This process can be extremely challenging, and extremely rewarding. Students often work with local nonprofit organizations to complete hands-on learning, and connect it back to the curriculum. These partnerships are vital in connecting campus to community in a variety of ways, and have been embraced as a critical pedagogical tool, in which students are producers of knowledge, and not merely consumers. This type of socially situated learning fosters student success and retention, and develops civic engagement skills that benefit learner and community (Strait, Turk, & Nordyke, 2015).

Bringing community into the classroom manifests typically in one of two ways, with lines between the two often blurred. The first is as place-based learning communities, in which cohorts of students are engaged with local community issues through a series of

courses, using the community as laboratory and lens, and developing place attachment in the process (Schweizer et al., 2013). The other is through community-engaged coursework in which students work directly with community organizations to identify and develop solutions for those issues (Strait, Turk, and Nordyke 2015; Cal Corps Public Service, 2015).

Place-based learning communities typically involve working with an existing local community, such as an indigenous community, to bring local perspectives to research and further the production of locally relevant knowledge (Davidson-Hunt and O’Flaherty, 2007). They allow local communities to benefit from the intellectual processes being conducted in their midst (Gruenewald, 2003). Often, students are placed in a cohort, and move through a series focused on the specific community, rather than just one course (or portion of a course). Curriculum may involve direct, hands-on work in the community, or classroom-based work with local data and context. One such program is the Klamath Connection, which studies an environmentally and culturally sensitive watershed in northern California. Students start with a field trip the week before school starts, then their first-year coursework in math, science, writing, and more, is threaded through with information gathered from the field, and from the communities of farmers, fishermen, and Native American tribes with whom they work (Humboldt State University, 2019).

Community-engaged or community-based coursework, by contrast, is less clearly defined and often less structured, with varying levels of involvement between classroom and community (Cahuas & Levkoe, 2017; Dorsey, 2001). At a basic level, field trips can be incorporated, where students learn from local organizations how the topics they study in the classroom play out in the real world (Buckley et al., 2004). A more service-focused course, often labeled as service learning, may require students to volunteer at vetted sites for a set number of hours. They might then be required to reflect upon this experience in a paper or other reflection activity to connect their onsite experiences to course outcomes. Careful planning by the instructor is necessary to make sure community experiences contribute to the scholarship (Dorsey, 2001).

In a more research-oriented CBL course, students might work with data from communities and local

organizations, to practice methods and investigations specific to the course. A more intermediate level often involves students working directly in organizations with course-specific guidelines, on a project or individual activity. The most in-depth CBL courses may resemble internships, where students spend considerable time onsite with an organization to fully engage with their processes, challenges and opportunities, to explore career paths or develop a more in-depth foundation for their studies. However, it is important not to confuse service learning with professional preparation (Bringle and Hatcher, 1995). Community-based learning and service learning, unlike internships, seek to link real world experiences to learning, but with reciprocal benefit to communities or individuals (National Geographic, 2016; Strait, Turk, and Nordyke, 2015).

A framework currently under development in the California State University system involves identifying essential elements, such as reciprocal partnerships, explicit civic learning goals, and reflection, then outlining a range of implementation from low to high. As an example, one such metric is “Academically relevant community involvement”. At the introductory CBL level, the community project supplements course content. At the service learning level, the project is likely integrated throughout the course, and relevant social issues are explored as key dimensions of the student’s understanding of the content (CSU Chancellor’s Office, 2019).

Spatial citizenship and spatially-enabled learning

The development of spatial citizenship, in which citizens are able to communicate and participate in decision-making in their communities through the use of spatial representations and an understanding of space, requires moving beyond traditional pedagogical methods (Kanwischer et al., 2012). Reasoning with spatial representations is significant to a variety of domains, as is the ability to recognize and predict patterns (National Research Council, 2005). Spatially-enabled learning links place to curriculum, connecting complex concepts to the real world. Geography becomes an additional method of coding the learning environment, which enhances the learner’s memory and adds value to the learning process (Vogler et al., 2012). The intersection of community-based learning with spatially-enabled learning is the pedagogical

center of community geography, which fold these elements into applications within the communities being examined (Shannon et al., 2020). The focus on praxis allows the students and researchers to work through the process of identifying and defining community issues, identifying solutions through research and participatory methods, and culminating with social action (Robinson & Hawthorne, 2018; Strait, Turk, and Nordyke, 2015; Boll-Bosse & Hankins, 2018).

The development of spatial thinking skills in young children has been linked to success in mathematics and science, and provides advantages in a global society (Moss et al., 2016; A. Mohan & Mohan, 2013). Yet we are often less concerned with the further development of those skills in young adults. If our lived experience in the physical world is the foundation of our understanding of the world (Alibrandi, 2003), it is important to create as many of these lived experiences as possible for students, and community geography curriculum provides an opportunity to engage students with real aspects of their community. Students who participate in service learning courses are more likely to become engaged with their communities after graduation (National Geographic 2016; Strait, Turk, and Nordyke, 2015).

Linking community and geography often involves working with, or creating, maps. The nature of public participation GIS (PPGIS) is highly localized, requiring participants to think about the spatial relationships within and between their communities (Sieber, 2006). As maps are researched or built, this invites a critical reexamination of place. Engagement with the community can mean real-time observations of phenomena, but inserting a map into the relationship increases the temporal space between the observer and the observed (Dunn, 2017). When spatially-enabled learning involves the creation of maps, there must be a process for identifying or visualizing place and retaining its meaning. Bentley et al. found that revisiting a place to update mapping and evaluate change could similarly trigger questions of meaning (Bentley et al., 2016). Within the CBL pedagogy, this connection can often be maintained through reflection activities. Students are asked to not merely place points on a map, but to consider and articulate their spatial relationships and context, moving from passive production and consumption to a more empowered spatial dialogue.

The empowerment of individuals through improved spatial citizenship is thus extended to the larger community as students create projects that empower organizations and community groups. Mapping and GIS projects often help communicate “complex and socially differentiated information” (Weiner et al., 2002) and help citizens find common ground for discussing community issues (Boll-Bosse & Hankins, 2018). The process of communication, participation, and negotiation with spatial representation enhances spatial citizenship, and can improve understanding and use of existing geographic media, as well as produce counter mapping movements to challenge the status quo (Kanwischer et al., 2012).

Community-based learning with geography

While community-engaged pedagogy is not new, community geography itself is a relatively recent term, which encompasses spatial citizenship, community-based learning, PPGIS, and various other ways in which the local geography is connected to the classroom. The components which tie all of these diverse specializations together are that of praxis, participatory methodologies, and spatial thinking, specifically as applied to communities (Shannon et al., 2020). Robinson et al. explicitly define the subfield of community geography as the application of geographic methodologies to community issues (2017), while Shannon et al. (2020) definition focuses more strongly on the collaborative aspect of knowledge production. Community can be defined in various ways, as physical proximity, or the sharing of common experiences and perspectives, which are sometimes formed during the collaborative process (Shannon et al., 2020; Weiner et al., 2002). When speaking of physical proximity, we may use other terms, such as neighborhood or town, but communities based on commonalities may exist virtually, either as a random scattering within the physical community, or with little connection to a physical space at all, as with online communities. Thus, community geography can explore a tangible or digital community. In the context of community-based learning, the goal is typically to connect students to the community around their university, interpreted as the physical community in proximity to campus, to mutual benefit. The American Association of Geographers (AAG) leadership has begun calling for more “public” geographies, in

which research is not purely academic, but carries meaningful value (Sheppard, 2013). Public Participation GIS (PPGIS) can often address many of these issues, but does not necessarily connect with the classroom, and can sometimes suffer from an imbalance of power (Weiner et al., 2002). If this power difference is managed well, community geography can be a means of empowerment for under-represented or under-resourced groups to address local issues (Robinson et al., 2017). It encourages the investigation of the diverse populations of a community, rather than the somewhat sterile approach when demographic data is used to represent nonwhite populations (Shannon et al., 2020), and can bring awareness to underrepresented groups. It also allows for a deeper, more geographic investigation of what those identities mean in that space.

While the scholarship of community geography has thus far lacked diversity (Cahuas & Levkoe, 2017; Shannon et al., 2020), engaging with community organizations in meaningful ways that give voice to frequently marginalized populations can be a powerful experience, for both students and community members. Diversity of identities is an important factor in the learning and research process—critical service learning can be used to explicitly address this, and address social justice and power imbalances both in the community and in the classroom. The intersectionality which naturally occurs in a community partnership should not be overlooked, and can be one of the most valuable aspects of bringing the local geography into the classroom. Faculty and students may be engaged with community members who share identities, or they may be learning about identities with which they have no prior experience. The general public may tend to homogenize students at the nearby university, only to discover a diverse set of identities as they work with individuals. And, deliberate engagement with groups whose voices are not often heard can be eye-opening for all parties.

Service learning and geography education are a natural connection, following on the pragmatic tradition, to improve social justice, connect to environmental and land-use decision-making, and create community mapping and participatory GIS products (Bednarz et al., 2008; Dorsey, 2001; Post, 2012). CBL and service learning activities are most closely related to human geography (Dorsey, 2001), but there are ways to connect it to physical geography, particularly

as regards human interaction with the physical world. While there is a strong body of knowledge around active learning techniques in the geography classroom (Buckley et al., 2004; Scheyvens et al., 2008; others), when looking specifically at community-engaged or service learning, much of the writing falls in to this latter category. Indeed, one of the most tangible ways to bring geography and community together is through maps, but this integration can be done at various levels. Community culture plays a significant role in the success and value of PPGIS projects (Sieber, 2006), which can become more important when students are directly interacting with the community. Spatial contextualization (Vogler et al., 2012) is the core of community geography, but can be done with a variety of analog or digital tools. In GIS-heavy projects, where students serve as the “experts”, it is important not to allow the technology imbalance to overshadow the learning process (Boll-Bosse & Hankins, 2018; Sieber, 2006). In the courses discussed below, one is heavily analog, one is digital and highly technical, and the other falls somewhere in between. What shifts a course from “learning about communities” to “community geography”, is praxis, focusing on the application of academic study to relevant action in the community, and working with community members to identify issues and solutions (Shannon et al., 2020).

Developing good partnerships to make these courses succeed can take time, and depending on the nature of the academic work, the timeline may be a significant obstacle. Relationships must be built to develop trust (Boll-Bosse & Hankins, 2018), and expectations must be managed to achieve results within the given timeframe. For example, in a standalone course, students may be expected to research, develop, and implement a project in the course of a single semester (or less). This can be challenging under any circumstances, but when the community organization is coming into it with expectations of a much larger or more involved relationship, trust between campus and community can be damaged. A multi-term project allows for more depth and engagement with the organization, but students may not feel they have learned or accomplished as much if they are only working on a small part of a larger process. There is always at least one project during a course in which students, community organizations, or both, must be encouraged to scale

back the scope of the project, in order to achieve results in the short time available. The enthusiasm is encouraging, but if expectations are not managed early, disappointment can ensue.

I started my journey with CBL from the nonprofit side. I served on the board of a nonprofit leadership coalition, and when I first discovered we had a student board member position, I was surprised—as a college student, I had been only tenuously connected to the community around me. But our student board members were passionate and engaged, and added a necessary perspective to many of our discussions. As a coalition, we offered support to area nonprofits who wanted to recruit student board members of their own. At the nonprofit where I worked, I quickly discovered that our volunteers and student workers were more engaged in the work if they understood the impacts it had on the community. When I returned to teaching, it was a natural step to recommend local nonprofits when students were looking for meaningful questions to examine with their newfound skills in GIS and cartography. From there, I progressed to deliberate inclusion of community-based learning, with an emphasis on praxis rather than study. What follows is a discussion of three CBL courses integrating geography and community; two have been offered multiple times, while the third had its first offering amid the onset of the COVID pandemic in the US.

Geography for Teachers

At Humboldt State University, I teach a course called Topics in Geography for Teachers, which is designed to introduce education majors to a wide range of geographic subjects and the principles of geographic thinking, along with a variety of pedagogical techniques for engaged classrooms. As this course is taught in the Fall semester, it coincides neatly with Geography Awareness Week (GeoWeek), which is about improving young Americans' understanding of their role as spatial citizens through classroom and community events (National Geographic, 2019). It seemed a natural fit to have the students in this course connect with local classrooms to bring them geography lessons and activities.

HSU Emeritus Professor Paul Blank, during his tenure, had amassed a large collection of 1:500,000 Tactical Pilotage Charts, which he had laminated, for use as floor maps, to help students explore the places

discussed in his courses. His pedagogical technique for these maps involved developing lessons around a particular region, then inviting students to slip off their shoes and walk around on them (Blank, 2002). Students would often be hesitant, at first walking on the maps somewhat nervously, but eventually hunkering down or even lying on the maps to get a closer look at places they knew, or might only have heard about.

The students built on this idea by taking portions of the collection to a local K-12 classroom and developing a lesson around them. Feedback from both the student teachers and the classroom partners has been positive. The GEOG 470 students were frequently amazed at both the response of the students for whom they presented, and also their own growth as future teachers. Many expressed trepidation at the idea of teaching geography, as this course was their first real exposure to it as a distinct topic, but were then delighted by how much they learned and enjoyed during the process of working with students. Connecting elementary and middle school students to the geography of lessons they were already learning helped the university students connect geography back to their own learning.

After the first year of the project, many of our elementary school partners wanted to focus on some local lessons, particularly as relates to our long and diverse indigenous history. We have since added some 1:50,000 topographic maps of Humboldt Bay and environs to the collection, and they have been the most popular for the elementary schools, as children learn to make connections between their home community (Gross, 1955) and how it connects with indigenous communities and the larger area. Students from out of the area gained a stronger connection to the local as they taught these lessons, and gained insight into many of the issues around indigenous relations in the US and elsewhere (Mohan, 1995).

GIS and Nonprofits

In the Spring semester of 2013 and 2014, I taught a course at Ohio University called Service Learning: Using GIS to Partner with Local Nonprofits. I wanted to bring a little PPGIS into the classroom, but with the students driving the process. The key learning outcome for this course was to provide students with an opportunity to demonstrate analytical and evaluative GIS skills in working with nonprofit organizations,

and was designed for students who had completed at least one GIS course (preferably also Cartography). Secondary outcomes were to gain a deeper understanding of the issues impacting their local community, and expose them to ways they could use their skills to be more engaged spatial citizens wherever they might land after graduation.

Students worked in pairs with a local organization to plan and implement a real-world GIS project. The organizations were pre-screened to ensure that they would have a project that would allow students to meet learning outcomes, but the full scope and deliverables of the projects were determined by the students and their partner organizations.

Class sessions were structured around reading discussions, combined with activities and topics more typical of professional development workshops. This was done deliberately, to ground students in relevant research, but also expose them to tools and techniques used in the professional setting to frame and implement projects with community organizations and the public. Since students were expected to already possess the necessary geospatial skills, course topics focused on the role of nonprofits in communities, project design and development, team building and visioning, and how people connect to maps. In addition to group discussions, workshop activities, and team strategy meetings, students were expected to meet regularly with their partner organizations, and submit weekly reflections related to project development and personal growth throughout the term.

Pre-screening partner organizations was critical to the success of this course. Having worked with the nonprofit community for nearly a decade before teaching this course, I was able to offer some examples to the organizations of the types of projects that GIS could be used for, and that students might be expected to complete in the allotted time frame. Each organization, when committing to host students, was asked to provide a primary contact, and brief description of the type of project (e.g. mapping locations, gap analysis, site selection, etc.) The students then worked with the partner organization to establish scope and function of the project, to meet the timeframe and student skill level. The nature and frequency of the partner meetings were determined by the students and organizational contacts.

Some of the more impactful projects included working with the county planner's office on a bike

path extension project in support of a grant application, mapping endangered and threatened species at a plant sanctuary, conducting a spatial assessment of a proposed change to the local bus service, identifying a new site for the farmer's market (which was losing its current site at the end of the year), assessing broadband connectivity in rural areas to support policy change, and assessing the spatial patterns of barriers to healthcare access in support of funding and policy advocacy.

After transitioning to Humboldt State University, in California, I needed to retool this course from a 3-unit to a 1-unit course, to fit into the existing structure as a Cartography Practicum. While students still completed some pretty impressive projects, including an evaluation of food security in the county that became a marketing tool for the local food bank, and maps for an international hosting organization that helped connect our community to the global community, the focus of the course was now on cartographic output, rather than analysis. The reduction in course units also meant that much of the content had to be pared down or eliminated. The course was still successful, but after the fullness of the previous iterations, felt hollow. Additionally, as a newcomer to the area, I had little time to pre-screen organizations, and so ended up casting a wide net to community partners vetted by the university's Center for Community Based Learning. This worked fairly well, but some partners struggled with data collection, or had to settle for less robust projects than they had envisioned. The second year this course was offered, I had more time to communicate with community partners about the scope of the project, and we were better able to match workload to wish list.

Students nonetheless gained invaluable real-world knowledge about working with nonprofits on real community issues, and their reflection essays demonstrated both their struggles along the way, but also their very real enjoyment of the value of these projects.

Community Geography

The main problem with developing a service learning course around student-driven or PPGIS is that it often excludes students who have a passion for community issues, but lack the necessary technical skills. This excludes not only some geography majors, but also students from other disciplines who may never have

thought of taking a GIS course. It also excludes many community members who lack GIS or advanced computer skills, so while this technology can empower, it also marginalizes (Weiner et al., 2002). Fortunately, a number of web-based options have emerged to allow students and community members to demonstrate spatial competency without a heavy technical requirement.

Toward that end, a course in Community Geography was proposed, to bring together students from a variety of disciplines, around the spatial nature of challenges and opportunities in their community. This course is designed for students with no specific experience in GIS tools, just a foundation in geography. It is a three unit course, so fuller discussions and activities can be incorporated as with the first version of the GIS course. In the initial offering this past spring, many of the students had taken an introductory course in basic geospatial concepts, but the goal is to make it accessible to those who have not.

Students have the opportunity to connect with community partners whose missions are about the built environment, the natural environment, and the people who exist in both. They will learn about community organizations and issues of current importance to society, with the opportunity to not just read about them, but to use their skills to benefit the organizations and their community.

As with the GIS course, students learned the foundations of nonprofit organizations, including identifying community issues and identities, and advocacy strategies and limitations. Readings and discussions focused on the role of geography in community problem-solving, particularly in rural communities, and activities were geared toward developing professional skills, such as team building and project planning and design, which the students could then put into action to bring context to both lesson and place (Post, 2012). Reflection activities borrowed strongly from Dorsey's (2001) geographic perspective on assessment for service learning. To better share power in the classroom (Cahuas & Levkoe, 2017), lectures were minimized, and students instead drove most of the discussions, and activities were facilitated in as hands-off a manner as possible.

The core of the course, the project, saw the most significant changes from the GIS course. Students worked with organizations to complete a project, but with more of a map-as-story focus. As noted earlier,

spatial thinking doesn't require that one be able to operate a specific software package. An engaged spatial citizen can be a valuable asset to their community without ever taking a GIS course. There are a number of online mapping tools available today with low barriers to entry, so that citizen groups and students alike can communicate the spatial nature of community topics without specialized knowledge, further helping to address potential inequities in technical skills.

Most groups used the ArcGIS StoryMap platform (Esri, 2019) to incorporate maps into a larger piece that communicated the work the organization is doing or hopes to do. A few introductory sessions on the use of the website were implemented, to get student familiar with the tools. Fortunately, the StoryMap toolkit has many templates that remove the need to learn web development, and spatial data can be used from Esri's online resources or added fairly easily from organizational data. Turning over the project to the organization has also been less complex, as the maps can be embedded in the organizational website or transferred to their own StoryMap account.

This course has recently concluded, and impacts are still being assessed, but there are a few things which have already emerged that were eye-opening for the students, and really brought to light some of the local issues. One group bumped up against some of the local tensions around indigenous relations while working with a local history group—they wanted to illustrate the “history of the region”, but beginning after European contact and some particularly troubling clashes with local tribes. In past conversations, the tribes had made it clear that they did not want this group “whitewashing” their history, and preferred to have it omitted from the history group's information, so they could tell it themselves. We collaborated with the history group to use language that honored that agreement, but made it evident that this was not a complete history of the area, so as not to invalidate the indigenous settlements that preceded European settlement. Another group struggled with the post-COVID impacts on their partner organization, when staffing was cut significantly, and their contact had traveled out of the area to care for a family member, and another had to get creative when shelter-in-place orders prevented them from going to the partner site and collecting data. For students who come from large urban centers, some of the barriers of working with a

small community were new to them, and for those who came to this part of the state to experience our parks and natural spaces, navigating the workings of community structures was unexpected, even without the added challenges brought by the pandemic. At the end of the course, community partners were generally quite pleased with the resulting projects, and most were integrated directly into their existing websites. Student reflections reported deep satisfaction with the pragmatic methods used during the course and the satisfaction of having gained new skills as well as contributing to their community (Rock et al., 2021).

Creating a community-based course: lessons learned

The development of community-based curriculum can seem daunting at first. But the benefits reaped by the students, community partners, and instructor, continue to make it worthwhile. Given what we know about community-based learning and retention rates, many colleges and universities are now providing significant support for faculty developing these types of courses. Deliberate and organized learning of these pedagogical techniques will result in quicker results in the classroom and a more coherent approach to course development (Bringle and Hatcher 1995). Many of these reflections are grounded in standard service learning practices, but geography plays a role here, too.

1. *Geography matters, even in the planning phase.* The development of my first service learning course was not without bumps, but my familiarity with the academic and community sides of the partnership certainly made it easier, along with my extensive network of nonprofit connections, to select groups with spatial projects and in an appropriate geographic area. When I started at a new university, in a new community, I lacked this network, and it was much harder to find groups that fit (and less rewarding for the students). In the context of community geography, it's also important to know the geographic reach of these organizations, to help identify the context of their "community". Many individuals and organizations in this area identify themselves as being from or serving "Humboldt", which can be anything from the area immediately around the bay, to the entire county, some 4,000 square miles, much of which is unreachable by public transit and therefore unreachable for students.
2. *Keep an open dialogue with local organizations.* This is important for several reasons. Firstly, it's important to make sure my partners know the academic outcomes the students will be working on, and it's important for faculty and students to understand the outcomes the partner is seeking (Bringle and Hatcher 1995). These often changed along the way, and communication was key to adapting when necessary. Secondly, this open communication is absolutely essential in cases where either the students or the partner experience discrimination, harassment, or equity issues – social justice is not just a topic for research. Both students and partners should feel comfortable contacting me (or a designated reporting person) immediately, and I need to be comfortable asking them about any potential issues that might arise from placing students who differ from the local demographic. While we want students and the community to experience diverse interactions, placing students where they will be unsafe or harassed is obviously not acceptable. (I'm also grateful to have my campus community center on board for support, should this happen in one of my courses.) Communication is also helpful when I've needed to do quick outreach to get one more partner on board, either because enrollment increased at the start of the term, or a placement issue ruled out a planned site.
3. *Some things can't be controlled.* By extending the classroom into the community, we invite additional moving parts, over which we may have little to no control. Students traveling to sites may have transportation issues, or deadlines and staff availability at the partner organization may change. Real world data is messy, sometimes hard to collect, and doesn't often neatly sort out like prepared lab data. Scope creep frequently occurs, and students will need help managing it. I've used my own project experience to guide me, and chatted with other faculty who have done similar things to ask how they have dealt with these obstacles. In rural areas like ours, outside issues can interfere, and alternatives can be challenging. This spring, it was the shelter-in-place orders as a result of COVID-19, last fall, it was week-long

power outages for wildfire prevention. Many students were left without the ability to work on their projects until we could find some creative alternatives.

4. *Scale is important.* The first time I did this, it felt overwhelming. It would have been smarter (and less stressful) not to convert my entire course to a semester-long in-depth service learning course all at once. At HSU, I backtracked a little and introduced some real-world data to a lab activity, or invited students to research a local organization or community issue for a project, and as a result I think this last term was smoother than any before, despite the challenges introduced by COVID-19 and the rapid shift to online instruction. My colleagues and I now encourage community investigation for almost all of our final project assignments, and it's a relatively low-stakes way to get started with community partners. In several of my courses, even those not identified as CBL or SL, I've added course outcomes related to civic learning and community engagement. Some projects are only a few weeks or half a term, rather than the full term experience of my latest course. There's no requirement that community engagement needs to occur over the entire semester for it to be a valid experience, something I learned later than I should have. The key is getting a spatial connection embedded in the curriculum. Geographic scale is also important, as organizations that serve a large area can be challenging for students to visit or collect data. Our campus also has a strong social justice focus, and tackling issues at the local scale has helped students find ways in which they can work on important topics without feeling overwhelmed.

At the end of the course, I always check in with students and community partners about the entire experience. Not only do we want to assess whether the students gained a spatial understanding of the community, but we also need to know if the structure and activities of the course helped or hindered that process. Student evaluations have been helpful in this regard, but I also ask students in less formal ways, at key intervals in the process, and frequently gain additional insight from their closing reflection assignment. I also send out a partner survey to solicit feedback on the

process from the community organizations, including my own role.

In most of these courses, students are asked to develop a mapping project. This requires that they understand the data in ways that often don't occur in traditional mapping or analysis curriculum. With a conventional GIS course, students are either provided a data set, or asked to find one that meets certain criteria, resulting in a relatively predictable path to the result. In a community geography or PPGIS activity, the nature of the data is often unknown, so the ways in which it can be mapped must be discovered also. Feedback from students who have some mapping experience indicates this is one of the most challenging aspects of the course, particularly when working on highly localized geographies, such as a single watershed or service area. While university experts can sometimes be expected to provide data for local projects, often community partners are the data suppliers. When these data do not agree, it may require additional assessment by the students or organization to determine accuracy, as it should not be assumed that either source is more likely to be correct (Sieber, 2006).

To further complicate matters, there is the need to transfer the results back to the organization, either as static maps, or as an interactive product that can be updated by future students, or by the organization themselves. A key component of service learning is empowerment of both the students and the community partners, which implies that students are communicating spatial stories that are incorporated into local decision making (Weiner et al., 2002). This requires a two-way flow of information about project goals. This can also be challenging for students used to submitting a map to get a grade, and that's the end of it. If the partner organization views the final product and wants revisions before delivery, this must be factored in to the timeline. It may be necessary for the students to develop documentation on how to update the product, or interact with it, which is also not typically part of an assignment.

To get the most out of their project, community members must understand why they are participating in the project. As geography educators know, there is often a misunderstanding of the nature of geography as a discipline. In recruiting partners for the community geography course, I found I was often describing community geography, and then outlining the nature

of the project students would complete. With the GIS course, I was typically able to skip straight to the project description. On balance, however, the longer description often led to interesting conversations about the community itself, or the work done by that organization, as we sought to establish a common vocabulary.

University capacity for GIS can sometimes provide an introduction to spatial data and representations for local groups, but more commonly expands capacity for those groups which already understand its value but lack the resources to implement it (Sieber, 2006). The increasing availability of online tools for data collection and mapping can reduce the need for hardware and software purchases, but training can still remain an obstacle. For this reason, and others, it is important to consider organizational capacity when planning out projects. In the recent Community Geography course, students developed web maps in a completed form, which could be either hosted in the university webspace or transferred to the organization. Of the 12 community partners, less than half had the capacity to host it on their own space, and only 3 organizations currently had the capacity to take over the sites and maintain or alter them. For the handful of projects that are ongoing and will require updates, but lack in-house capacity, maintenance will likely be deferred to the next course offering, when another student group can continue the work.

Conclusions

The benefits of community-engaged learning are threefold: to the student, the community, and the campus. To the campus, CBL brings stronger campus-community relationships, and this fits within the mission of most institutions to be an asset within their region (Bednarz et al., 2008). When engagement occurs across a wider region, this can increase awareness of institutional strengths to that expanded reach, which in turn may help with recruitment efforts. Recurring engagement, by revisiting the same community across multiple terms, can further strengthen these ties.

In the short term, communities and individuals are intended to benefit from the actual student projects. Projects may directly enhance organizational goals, or more broadly increase awareness, or even democratize

spatial decision making by creating accessible methods for participation (Irvin & Stansbury, 2012; Bringle and Hatcher, 1995; Bednarz et al., 2008; Weiner et al., 2002). But there are long term benefits as well. Students may be otherwise disengaged from local or regional politics or environmental issues, but by encouraging the active practice of their discipline through engagement in the local community, they are shown to have an increased tendency to volunteer in the future, and have a fuller understanding of issues of diversity, and the importance of political participation (Bednarz et al., 2008; Cahuas & Levkoe, 2017). The university-community partnership serves as a support structure to empower underrepresented groups with PPGIS (Elwood & Ghose, 2001), and spatial engagement around local issues can help community organizations improve advocacy and participation (Weiner et al., 2002).

For students, CBL adds meaning to curriculum, and affords them the opportunity to demonstrate knowledge and skills to potential employers. Students who become more engaged with communities near their campus have higher success and retention rates, and CBL coursework provides an opportunity to work with communities that may have cultural relevance for them, but are often overlooked in other forms of scholarship (Cal Corps Public Service, 2015). In course evaluations, students have reported learning a great deal about their university community, and also being eager to carry these tools back to their home communities. Robinson and Hawthorne describe this as students shifting from being knowledge consumers to knowledge producers (Robinson & Hawthorne, 2018).

When CBL is paired with spatially-engaged learning, the benefits increase. Despite some faculty perceptions that students lack maturity and motivation to engage in active learning (Michael, 2007; Scheyvens et al., 2008), students have been shown to develop increased civic awareness and skills, and develop spatially competent civic values (Strait, Turk, and Nordyke, 2015). This allows them to connect academic knowledge of environmental and social issues, politics, history, geography, and more, to real community needs, and the spatial scale of those needs. Students then become stakeholders in these issues, rather than passive observers, and that understanding carries forward into more engaged citizenship throughout their lives (Bednarz et al., 2008).

One could also argue a fourth benefit, to the instructor, as a research opportunity. Whether student projects are directly derived from a researcher's work, are the subject of it, or simply guide the researcher to new topics or sources, community projects can be a great resource (Bringle and Hatcher, 1995; Bednarz et al., 2008). Similarly to the student benefits, the researcher can also come away from a CBL course feeling good about helping to accomplish community goals.

Whether the aim is to directly address specific community needs, or to provide students with meaningful interactions related to course goals, bringing geography to the community is a solid pedagogy that can accomplish both. The subtle shift in course outcomes from “gain understanding” to “engage in” or “assist” is a powerful one, and applying a spatial perspective to local and regional challenges is a valuable asset to everyone involved.

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