Chapter 18
X Marks the Spot: Engaging Campus Maps to Explore Sense of Belonging Experiences of Student Activists

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Abstract Campus maps are common features on college campuses. While these maps tend to illustrate places and spaces, they also hold stories and experiences that may alienate students. In this chapter, the authors share how pairing campus maps with a semi-structured interview protocol can yield new insights into campus life. The chapter begins with a discussion on campus maps and how they've been used to foster exclusion in history. We then provide the readership with insight into our planning process and how we approach the mapping exercise. We conclude with lessons learned and considerations for conducting this type of research.

Maps are parts of our daily lives. People use applications, such as Google Maps, for directions to move from one place to another. Fictional stories about pirates and explorers have often depicted the "X" on a map as the location where treasure can be found. These tales often regard the map as a key for unlocking the secret location. What these stories usually fail to depict is how maps have also been used as exclusionary tools. Countries often fight over how maps depict boundaries across contested spaces. In recent years, US citizens and policymakers have used maps to demonstrate redlining and gerrymandering behaviors that tend to privilege wealthier individuals. In short, maps are consequential tools that also symbolize meaning to others.

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In this chapter, we discuss a research application using campus maps for deter-mining places and spaces where student activists perceive belongingness on cam-pus. Researchers using spatial analytical techniques have found inequitable outcomes for individuals depending on where they are located in relation to post-secondary educational institutions (Dache-Gerbino, 2018; Dache-Gerbino & White, 2016; Canché, 2018; Hillman, 2016, 2017). The role of place and space provides an interesting challenge, given that these places are often steeped in a historical lineage that supports the white supremacist tendencies of early founders of colleges and universities. Previous studies have documented that many spaces on campus are not particularly affirming for students holding marginalized and minori-tized identities (Strayhorn, 2012; Vaccaro & Newman, 2016). In short, the geogra-phy of a campus can shape the educational outcomes and belongingness for many students (Hillman, 2017).

While methods of visual researchers have been increasing in popularity across a range of academic disciplines, higher education researchers have not frequently adopted these methods. Visual methods can "offer a different glimpse into human sense-making than written or spoken texts do because they can express that which is not easily put into words: the ineffable, the elusive, the not-yet-thought-through, the subconscious" (Weber & Mitchell, 1995, p. 34). Visual research methods can "chal-lenge spoken or written texts by offering uniquely rich vantage points" or nuance existing understandings of a particular phenomenon (Nguyen, 2018, p. 44). For exam-ple, Nguyen (2018) utilized participant-generated photos to understand better how college students conceptualized the term "success." Participant renderings departed significantly from the institutionally normative ways (e.g., graduation, retention) in which higher education administrators and policymakers have conceptualized this term (Kuh, Kinzie, Schuh, & Whitt, 2010; Lumina Foundation, 2012). Indeed, visual methods paired with traditional qualitative methods can yield new insights.

In this chapter, we discuss how pairing a visual tool—campus maps—with tradi-tional qualitative (e.g., interview) methods can offer a more robust understanding of how student activists experience belongingness and support on campus. This chap-ter combines multiple modes of data together to enhance practitioners' and schol-ars' understandings of the collegiate landscape through studying location. We discuss the methodological approach and considerations for using this particular tool. The chapter concludes with a discussion of lessons learned and future direc-tions for researchers.

The Role of Maps

Maps are tools that have been used for centuries. These tools are designed to rep-resent or depict a particular space. Some maps show land contours and features, while others provide information about national and international boundaries. People use maps as a form of navigation over short or long distances, and maps can often be interpreted without knowing a specific language. They visually represent

space for people. For example, population density maps illustrate how many people live in a particular area by the font size of the location.

Campus maps are common features on many college campuses. Students use these maps to navigate their way to classroom buildings or to locate the closest dining hall. These maps may be internalized and become an integral part of a student's daily life. In addition to the administratively created map, there is a "hidden curriculum" map that represents an unofficial understanding of campus life. The hidden curriculum map relies on students' perceptions to draw and renegotiate its boundaries. The student-perceived maps are riddled with lore and anecdote about campus life. For example, Beverly Tatum's (1992) *Why Are All the Black Kids Sitting Together in the Cafeteria* explains why some Black students perceived the cafeteria as a space for comfort and belongingness. Studies with sexually minoritized students found students tended to gravitate toward LGBTQ+ centers for a sense of community that they did not receive in academic spaces or residence halls (Fine, 2012). These types of studies begin to illustrate that while institutions frequently spend significant dollars in creating spaces on campus for students, they are not always the most welcoming.

Sense of belonging plays a prominent role in places where a person perceives belongingness. Belongingness fulfills a basic "human need" (Maslow, 1962) that is a foundational building block needed for advanced consideration and development. Within higher education research, sense of belonging emerged as a critique of Tinto's (1993) scholarship on academic and social integration. Initially, Tinto argued that being immersed socially (with peers and campus) and academically (with faculty) led to better student outcomes (e.g., persistence, retention).

Several scholars have offered different perspectives on sense of belonging (Hurtado & Carter, 1997; Samura, 2016; Strayhorn, 2012). Within this particular study, we draw from Strayhorn's (2012) conceptualization of sense of belonging, which describes sense of belonging for students as

> perceived social support on campus, a feeling or sensation of connectedness, the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the group (e.g., campus community) or others on campus (e.g., faculty, peers). (p. 3)

Sense of belonging has been studied with different majoritized and minoritized groups (Means & Pyne, 2017; Samura, 2016; Strayhorn, 2012; Vaccaro & Newman, 2016). These studies have shown that having a sense of belonging positively contributed to academic performance in the classroom. The studies have also highlighted the role of having space and place on campus as a way of promoting sense of belonging for minoritized groups.

In reviewing the literature, we identified one study similarly exploring perceptions of a facet of campus life using campus maps. Hites et al. (2013) used a heat-mapping exercise to explore perceptions of campus safety. Heat maps show the density of responses. Instead of focusing on a particular point, or place, heat maps capture the frequency through which people indicate a certain location on a map. The density is often visually represented using a choropleth approach, which shades a location more and more deeply as the frequency (or density of responses) tends to increase. The more times a location is selected, the richer the color will become. For researchers, these density spots become important sites of understanding as they

communicate that something unique is occurring at a particular locale. The researchers used a concurrent triangulation design with ten semi-structured interviews where they asked participants to place dots on a campus map to indicate "hotspots" where they had concerns about their safety. The integration of the campus map data with interview data highlighted the boundaries of campus and remote locations as being places where students felt particularly unsafe. The pairing of the data together provided powerful evidence to the campus community about how best to allocate resources to protect student safety.

Similarly, we explore the integration of campus maps into semi-structured interviews with campus activists. We had a particular interest in exploring the role of space within a college ecology that affects student perceptions of belonging. We used campus maps as a tool for depicting places where student activists felt alienated or perceived a sense of belonging on campus. In the next section, we discuss a specific example of how we used campus maps.

Example

Context

This study occurred at a research, public institution located in the Midwestern US. What makes this site particularly useful for studying equity in interactions is that this institution has a rich history of students engaging in activist-related activities. In this example, we sought to explore the concept of belonging using two research approaches—interviews and heat-mapping—that individually would be insufficient for understanding student experiences. In the remainder of this example, we focus on the steps we took to better understand how campus maps nuanced the data collection procedures. As a reminder, the purpose of the study was to explore *how* and *where* student activists felt like they belonged on campus. Strayhorn's (2012) sense of belonging conceptualization informed the creation of the study's interview protocol and offered an opportunity to take a closer look at social justice and equity on campus from the student activists' point of view.

Data Collection Procedures

The specific technique we used with our campus maps was called heat-mapping where we considered the density of responses. Earlier, we have established how other researchers have used heat-mapping and how this visual method can be especially useful in critically considering belonging, equity, and inclusion on college campuses. The following contains more detailed steps to create a heat-mapping technique of your own that is tailored to what you want to learn about your campus and specific student populations. These steps are suggested and are malleable in

nature to best fit your research questions and the student population you are studying. Examples of the study described earlier are integrated into the following steps to help situate the data collection procedures.

Study conceptualization. The first step in this process required the researchers to establish the study's aims. This process required that we consider what previous researchers have done to study the experiences of student activists and their relationships with this specific campus. In our example, we cataloged our annotated bibliography of the study in a spreadsheet that allowed us to look more closely at the topic and the research approach others have taken. What we noticed during our systematic investigation was that researchers had relied primarily on interviews to interpret the experiences of student activists. As a research team, we also talked about experiences common to students at this institution. This discussion led us to consider how place and space matter to students. Our team agreed that we should explore how activists perceive spaces across campus, which led us to pair campus maps in our qualitative interview protocol.

Develop an interview protocol. The interview protocol was developed, discussed, and agreed upon by the researchers. To generate the initial draft of the interview protocol, we returned to scholarly literatures on student activists, belongingness, and space. The most time was dedicated to developing interview questions that mapped to the study's framing. These questions were developed based on a review of the extant literature about student activism and sense of belonging. After constructing the interview questions, we considered different ways to understand better how space influenced the sense of belonging for student activists. Much of our discussion focused on how we could visually depict and understand how place affects belongingness. We thought about common ways people think about college campuses, so we decided to use campus maps as a way of exploring student activists' experiences. As we considered the flow of the interview protocol, we had to consider where might we integrate the campus mapping exercise as a way of adding value and not detracting from the information collected.

Develop the map. Cartography was incorporated into the interview process as a multimethod tool that can be used to triangulate data on students' feelings of belongingness. Early in the interview protocol, the researchers asked activists about places where they organized on campus and why those spaces were selected. This part of the protocol was intended to establish what made some spaces comfortable and fitting in.

Near the end of the interview protocol, our procedures about heat-mapping occurred. To do this, we researched the maps different offices provided on campus and selected the map with the most detail and up-to-date buildings. It is a point of consideration as to whether you will include off-campus spaces that tend to be frequented by students at the university. Once we had the current map of the campus, we utilized Qualtrics, an online survey software, to import the campus map image. Within Qualtrics, the map was able to be sectioned by buildings and different regions on campus. We separated the map into 80 different sections so that we could take a sharper focus on specific areas of campus. After importing the map, we cross-referenced our survey content with the map that was presented on the campus web-

site to ensure validity and reliability. This online tool is optional and was chosen for its ability to quickly interpret data. Alternatively, physical printed versions of campus maps can be used with colored markers for each designated question. This version of the map may make it easier for participants to understand the map and could be more interactive. Our suggested approach is a combination of these two ideas, which is described in the research design considerations later.

Since our process involved an interview protocol to complement the map, we asked participants to describe up to five locations on the map where they felt supported and did not feel supported. As participants described locations on the campus maps, interviewers followed up with in-depth questioning and examples as to why they observed such a perception.

Test the tool. An important consideration for using an online tool, such as Qualtrics, is ensuring the data are captured properly. For example, every researcher tested each section of the map to verify that each of the 80 sections were coded correctly and operated as effectively as designed. The goal of this step was to conduct an internal launch that would effectively function as a stress test. This stress test was utilized to identify any future limitations or bugs that might be able to be caught early in the map importation process.

Following the first round of testing, there were some locations that needed to be recoded. Once the locations on the map were recoded there was a test done with a group of student activists that met the study's criteria, but were excluded so that we could ensure the accuracy of the tools. Each member of the organization tried using the heat map while responding to the interview prompts. These test participants offered us a chance to conduct cognitive interviews with people similar to our participant pool. We used this opportunity as a way to understand the nuances student activists felt when it came to discussing supportiveness and belongingness on campus. When we initially developed the interview protocol, the questions using the map were too general and did not elicit detail. What the cognitive interviews allowed us to do was to develop a set of follow-up questions in the event that participants responded to the interview questions without providing subsequent details. We used this experience as an opportunity to revise our interview protocol.

An early segment of the interview protocol focused on interactions with campus administrators. Representative questions included "How do you feel administrators at [INSTITUTION] view activism? What are some challenges and successes you (or your student organization) face in regards to activism on campus?"

Nearing the end of the interview, we asked activists the following set of questions: "I'm going to give you a map of campus (via Qualtrics). (1) Could you please mark spaces in orange (if any) that you feel safe, welcome, and supported? (2) Could you please mark spaces in blue (if any) that you feel unsafe, unwelcome, or perhaps unsupported? (3) Can you tell us a little about why you feel this way about this particular spaces?" As participants marked the locations, an interviewer was on hand to answer any specific questions that the participant had or if they would like one of us to repeat a question. While interviewers were physically present during this exercise, we did not intervene in any way. We wanted participants to respond openly and honestly.

The heat-mapping process produced an important realization for the researchers. This exercise illustrated the places where students felt like they belonged on campus. We also learned that students have tenuous relationships with specific spaces on campuses. For example, the student center served a beacon of support for nearly all students while doubling as a place where they did not feel like they belonged. One key consideration in interpreting this specific result is that a large number of students had been recently arrested in the student center for protesting around the time of the interviews. This liminal moment provides a nuanced snapshot into the activists' thinking. Without pairing the data with interview information, we would not have been able to capture the depth and the tension students experienced with a specific location. The heat-mapping tool will produce the most meaningful data for researchers if the method is paired with qualitative interview questions that ask for participant rationale of their selections on the map.

Research Design Considerations and Lessons Learned

The heat-mapping component of our qualitative interviews helped us to understand spaces of belonging on campus visually. Themes in relation to power, gender, and geography emerged, allowing researchers to consider how the active and passive coding of public spaces on college campuses influence the students' feelings of belongingness. As a result, we were able to begin to discern whether campus spaces are, in fact, inclusive. This Qualtrics mapping data, paired with open-ended interview questions that allowed participants to verbalize their choices, contributed to a more robust understanding of the emotional burden of navigating public spaces of campus, while allowing researchers to more readily understand what belonging looks like on a physical and geographical scale. In future studies, particularly surrounding student belonging on campus, we encourage researchers to use similar multimethod visual approaches. The following includes reservations and suggestions for modification to the procedures used to implement the graphical method.

Limitations to the data collection included students' difficulty reading the digital map of campus. To incorporate and replicate the heat-mapping methods, researchers should consider explaining the layout of the map, highlighting major/central buildings—such as the student center—to help students visualize what the map is depicting and orient the user. Another helpful suggestion would be to provide an additional enlarged, hard copy of the campus map with a key. This physical version of the map would allow students to rotate the map, mark the map to keep track of their surroundings, and allow for more time regarding what the marked spaces mean to them in their day-to-day lives instead of focusing large amounts of time to locating buildings or spaces. At the conclusion of the exercise, the researcher could photograph the marked spaces.

Another barrier to understanding spaces where students felt supported versus spaces that students' felt unsupported was the multipart roles that many buildings on campus serve. An example from the study discussed earlier was the student

center. The student center at this university includes offices for diversity and inclusion, administrative student affairs personnel, a student-run coffeehouse, centralized advising, campus involvement, and rooms available for reservation. All students in our study discussed the student center as a place that they consider both supportive and unsupportive. For this reason, it was absolutely imperative that this map distribution was paired with open-ended questions about their choices. This allowed students the space to explain why they felt this seemingly contradictory way about this building on campus. Without the verbal explanation of feeling supported in the diversity centers, but unsupported in the administrative offices, the map data would have appeared inconsistent and ambiguous. We recommend this open-ended approach to future researchers. We would also consider looking at singular buildings on a campus—such as a student center—to better understand students' complex interactions with their campus environment.

Another modification to the barrier of multipart roles of campus buildings could include walking through the physical spaces with students. Not only would this help the student and researcher better understand the spaces where students have significant emotional responses, but it could also lead to deeper conversation surrounding the physical spaces. We believe that this approach would allow the interview location to be in a space where students felt supported. In turn, this could prompt more raw, personal stories of their history with the space. It may allow researchers, who may not be familiar with every building on campus, to see the organization of a space and ask questions about the functionality of it. If there are comfortable chairs, researchers could inquire if students often go there between classes. If it is a small space without room to sit, the researcher might consider asking if it is the people in the office who cultivate feelings of mattering and belongingness. While heatmapping allows for the simplification of data to understand complex physical spaces across a number of participants, we know that encouraging the power of personal narrative in these open-ended interviews can lead to deeper understandings, findings, and implications for working with students.

Finally, it may be helpful to consider theories of geography and identity when interpreting datasets. An example from our data collection included maps explaining feelings of marginalization in walkways on campus, which are paired with stories regarding poorly lit spaces near the residence halls, fear of sexual assault, and cat-calling. While these walkways are seemingly gender-neutral, used to move passerby from location to location, and impossible to avoid unless you avoid public spaces altogether, the walkways take on gendered components. Women who share stories of restricting their behavior, such as walking only in the daytime with a group of friends, are alluding to normalized practices of public spaces being inherently coded as masculine. In this case, it may be helpful to researchers to unpack theories of geography of gender in relation to college campuses.

Conclusion

In this chapter, we have argued for researchers to consider using visual tools, such as campus maps, to better understand the interconnectedness between sense of belonging and place. Traditional qualitative methods and visual methods elucidate important insights; however, these methods alone are insufficient for providing a robust portrait of campus life. Together, multimodal approaches can begin to address and shift conversations about inequities on campus.

Suggestions for Further Reading

Dache-Gerbino, A. (2018). College desert and oasis: A critical geographic analysis of local college access. *Journal of Diversity in Higher Education, 11*(2), 97–116.

This study uses Geographic Information Systems (GIS) to explore how educational deserts (e.g., institutional availability) exist in highly populated areas, whereas suburban locales tend to have a higher concentration of concentrated institutions.

Canché, M. S. G. (2018). Geographical network analysis and spatial econometrics as tools to enhance our understanding of student migration patterns and benefits in the US higher education network. *The Review of Higher Education, 41*(2), 169–216.

This study employs geographical network analysis and spatial econometrics to view student migration patterns.

Hillman, N. (2017). Geospatial analysis in higher education research. In M.B. Paulsen (Ed.), *Higher education: Handbook of theory and research* (pp. 529–576). New York, NY: Springer.

This handbook chapter reviews literature related to how researchers have been using different geospatial techniques to understand student behaviors and outcomes.

Hites, L. S., Fifolt, M., Beck, H., Su, W., Kerbawy, S., Wakelee, J., & Nassel, A. (2013). A geospatial mixed methods approach to assessing campus safety. *Evaluation Review, 37*(5), 347–369.

This article discusses the use of heat-mapping and focus group data together to better understand student perceptions of safety.

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