

Conceptual Landscapes on Skidmore Campus: Reconciling Perception and Reality

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Abstract

Spaces are embedded with meaning, emotion and memory. Our project investigates the conceptualization of space use on Skidmore's Campus. Members of the Skidmore community drew cognitive maps to illustrate how the population views and interacts with the college campus. The assessment of space perception and utilization can be used to influence future developments to support sustainable design. As the campus grows, we hope to create a strong Skidmore community through encouraging inviting and personable spaces.

Colleges and Cities: Designing for A Sustainable Future

A space is not simply a space. In *The Image of the City* Kevin Lynch argues that “environmental images are the result of a two-way process between the observer and his environment. The environment suggests distinctions and relations, and the observer - with great adaptability and in the light of [their] own purposes - selects, organizes and endows with meaning what [they] sees” (Lynch, 1960:6). Cities are unique environments with spaces that foster diversity through the exchange of cultures and ideas and diverse identities. We understand university campuses as a microcosm of an urban center. Both cities and colleges have high density populations living in a confined built environment. These constructed environments are the ultimate demonstration of a designer’s intent. Colleges and cities are constantly adapting to internal and external pressures. Increasing populations, environmental concerns, and infrastructure changes all play a role in the evolution of these spaces.

Skidmore College is one example of an evolving space. In the past ten years Skidmore has added two new complexes of on-campus apartments, acquired new land, constructed a state of the art music building, and plans on constructing a new science building. As Skidmore College continues to change and expand, it becomes increasingly important to understand how the college uses space on campus. Although space use has significant social and environmental impacts, aesthetics often dominate the notion of space use and design in the planning of colleges and urban areas (Nasar, 1998). Many college campuses have strived to incorporate more responsible and sustainable practices at their schools, however, limited research has been done specifically exploring the effectiveness of college campus designs in the United States (Pickett and Cadenasso, 2008).

Our project aims to illustrate how the Skidmore community views and interacts with the college campus. Our overarching question is *how does the Skidmore population conceptualize space use on campus?* By examining how individuals conceive campus, we recognize how they translate and interpret real places. We used cognitive mapping to investigate these questions. Cognitive mapping provides a representation of how individuals perceive the space, rather than what the space physically looks like. Using these cognitive maps to influence future improvements and adjustments to the campus is crucial to creating a sustainable campus design and a strong Skidmore community. We located several spaces on campus that need improvement and suggest that the campus look inward for improvements before expanding outwards.

Cultural Significance of Effective Space

Understanding space and the environment landscapes that surround us is vital to creating an effective and sustainable community (Nassauer, 2012). The social construction of space refers to the social and cultural meanings we ascribe to space, reflecting on an individual’s or a community’s values. Space is very much a social and political construct specific to cultures and locality (Unwin, 2000). The social use of space can give it significance creating a place that people want to invest their time and resources. The term “place-making” refers to the ways individuals and communities make connections to a space, strengthening cultural identity and individual involvement. An effective space gives voice to individuals and reflects the needs of local communities and cultures that operate in those spaces (Bain, 2012). Effective spaces can have profound impacts on a community and cannot be an afterthought in planning.

Effective space can have the incredible power of bringing people together despite age, gender, or cultural background. It also allows for social commentary and community building (Carr, 1992). Whether this means a place of public protest or a place for socialization, effective spaces create the atmospheres needed for positive social interaction.

Effective spaces can also encourage healthy lifestyles. For instance, individuals will be more willing to exercise outdoors if the space is aesthetically pleasing and accessible. Through well designed pathways, walking and biking can become convenient and attractive rather than hindering. Good quality spaces encourage engagement with nature which can ultimately foster a better environmental ethic. All of these attributes of effective space make for an overall healthier community, a strong local economy, and an environmentally sustainable attitude.

To answer of research question of how Skidmore's community conceptualizes space, we first needed to understand the qualities of effective and ineffective space on campus. Then, to juxtapose the effectiveness of space we needed to understand the utilization of space. What makes a well utilized space on the Skidmore Campus? Overall, we seek to understand what draws individuals to specific spaces and what qualities allow for the Skidmore community to enjoy and utilize certain spaces more adequately. To better comprehend our data we broke our research into three themes: Background Perspectives of Space Utilization and Environmental Awareness, Points of Interest and Improvement, and Conceptualization of the Campus Landscape. These themes allow for a natural progression of the Skidmore community's spatial awareness of campus. The research started from a broad perspective of the campus space, using interviews and environmental awareness surveys, and then narrowed in on the conceptualization of the campus, through points of preference maps and mental mapping techniques.

The conceptualization of space on Skidmore campus will allow us to pinpoint areas of use and disuse, ultimately allowing us to create more effective and well-utilized space on the Skidmore College campus. Michael West, the Vice President for Finance and Administration at Skidmore College stated, "Creatively shaping open space is the key to the growth of the Skidmore campus" (Forbush, 2006). Therefore our research proves valuable to the Skidmore College mission by making spaces of underutilization and ineffectiveness apparent, allowing for creative expansion in the future.

Background Perspectives of Space Utilization and Environmental Awareness

Methodology

We utilized qualitative and quantitative research methods to explore the responses of participants from diverse backgrounds (ie age, gender, occupation). To measure quantitative responses about the conceptualization of space use and environmental awareness, 60 participants completed an Environmental Awareness Survey. Then, to measure the qualitative conceptualizations of participants, we did semi-structured interviews of 30 participants.

The Environmental Awareness Survey Likert scale questions are one method of quantifying attitudes and perceptions ranging from strongly disagree to strongly agree (McLeod, 2008). Of the 60 participants in the Environmental Awareness Survey data collection, 45% were upperclassmen, 40% were lowerclassmen, and 15% were faculty and staff. The 5 statements on the Likert Scale surveys were chosen to gather a broad perspective of the Skidmore campus landscape. Participants ranked on a number scale from strongly agree to strongly disagree: I spend very little time outside, I always stay on the provided walkways, Skidmore campus is

accessible and easy to navigate, Skidmore College uses its green space effectively, I often think about the environmental impacts of my actions.

Likert Scale Survey

1) I spend very little time outside.
Strongly Agree <--1--2--3--4--5--6--> Strongly Disagree

2) I always stay on the provided walkways.
Strongly Agree <--1--2--3--4--5--6--> Strongly Disagree

3) Skidmore campus is accessible and easy to navigate.
Strongly Agree <--1--2--3--4--5--6--> Strongly Disagree

4) Skidmore College uses its green space effectively.
Strongly Agree <--1--2--3--4--5--6--> Strongly Disagree

5) I often think about the environmental impacts of my actions.
Strongly Agree <--1--2--3--4--5--6--> Strongly Disagree

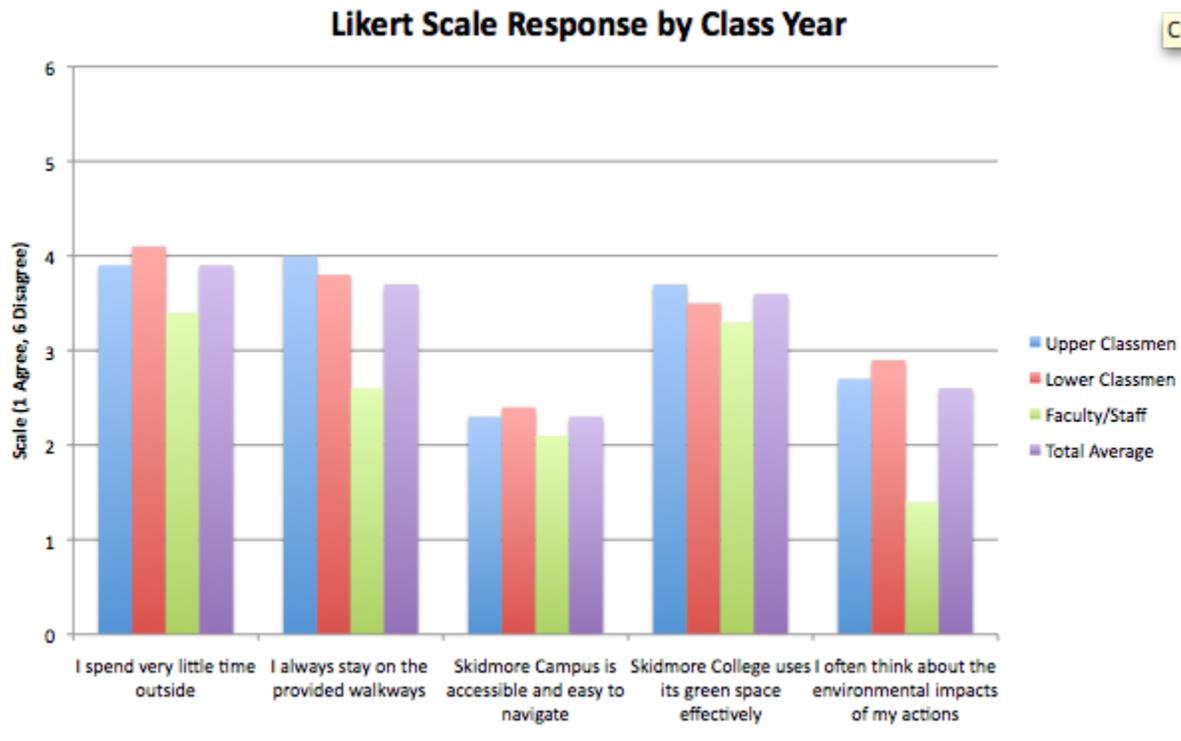
The Likert Scale may provide an imperfect measure of feelings, as individuals often have difficulty placing authentic feeling on a numerical scale (Jamieson, 2004). However, we found Likert Scales were well suited for quantifying the relative distribution of strong emotions versus ambivalence elicited by many portions of the campus landscape (Jamieson, 2004).

The semi-structured interviews from 30 participants allowed for more in-depth responses to the social perceptions of the Skidmore College campus. The interviews lasted anywhere from 5 to 45 minutes and were most often staged in public spaces to ensure non-biased responses. Our interview protocol prompted the participants to acknowledge their favorite spaces, the most well utilized spaces, unused spaces, and their overall perceptions of space use (Appendix A). Using recording devices and note taking, we documented direct quotations from our participants that furthered our understanding of the functionality of the Skidmore College campus.

Results

The Environmental Awareness Survey responses documented quantitative responses of perceptions of the Skidmore Campus. Although answers fluctuate within the grades, on average, individuals on the Skidmore's campus often stray from the provided pathways and do not think that space on campus is used as effectively as it could be. However, individuals also expressed that the school is accessible and easy to navigate, that they spend a great deal of time outside, and a fair amount of time thinking about their impact on the environment. The graph below

illustrates responses to the Environmental Awareness Surveys relating to space use on campus.



Our analysis categorized interviews themes into 3 sections: Levels of Interpretation, Making Sense: Legibility and Coherence, and Involvement based on previous environmental psychology methodology (Nasar, 1988). These categories allow for better interpretation of the qualitative data that we collected from the interviews. Levels of Interpretation include the aesthetics and three-dimensional landscape. The visual component of a space is very important in the making of an effective and well utilized space. For instance, whether a space is open and inviting tells us the likelihood of usage of an area. Making Sense involves the legibility - the overall safety - and coherence of a space (Nasar, 1988:51). The legibility of a space means that an individual can read the area as a safe environment and from there the individual can understand and maneuver in that space. The theme of accessibility, especially for people with physical disabilities was an issue brought up many times in relation to the making sense and legibility of the campus. Involvement is based upon the complexity and mystery of an area. Spaces that can host more activities can draw in different individuals and groups of people allowing for a more complex space, which is a key facet in the creation of an effective space (Project for Public Spaces). Areas of open space or wooded areas have differing amounts of complexity through their ability to have, or not have, a multiplicity of functions.

Levels of Interpretation: Aesthetics and Three-Dimensional Space	Making Sense: Legibility and Coherence	Involvement: Complexity and Mystery
<ul style="list-style-type: none"> -Seasonality -Open Space -Trees vs. Lawns -Attractiveness -Organization -Distance 	<ul style="list-style-type: none"> -Accessibility -Seating -Pathways -Parking -Open Space 	<ul style="list-style-type: none"> -Communal Spaces -Trees vs. Lawns -Porches -Multiple Uses -Open Space

Discussion

Both Environmental Awareness Surveys and Interviews enabled us to collect background perspectives of space utilization and environmental awareness from the Skidmore College community. We tried to gather a diverse number of participants to “work across rather than within [traditional] social networks, to bring together participants ... to work on setting agendas for community development, and to strengthen relationships across ethnic, socioeconomic, and age groups” (Schaller, 2005). Our hope in gathering Environmental Awareness Surveys and Interviews from a diverse group of participants is to acquire a better understanding of how the Skidmore community perceives the campus landscape and the overall built and natural environment. Although we involved a diverse group of individuals in our study, we found that dividing participants up by age, race, gender, or major did not specifically answer our research question and ultimately did not include those variables in our final results and conclusions. In future studies of space use on Skidmore Campus, these variables concerning the identity of participants will be crucial to build off our findings.

In our analysis of the Environmental Awareness Surveys and Interviews we found that language, and the ways individuals interpreted terms like green space and development, made a large impact on our results. Language allows us to describe our subconscious relationships with space. Throughout our interviews, we discerned which spaces illicit the most emotion. Ideas of what makes an effective space, a favorite space, or a place that needs improvement are all dependent on the individual’s unique description and definition of a specific space.

The effectiveness of space is contested through participants’ responses as individuals define effectiveness in very different ways. For example, on the second question on the Environmental Awareness Survey, the Skidmore population noted that green space could be used more effectively. However, effectiveness to some participants meant physically developed, while to others it meant leaving space alone untouched by human contact. Michael Marx, director of the Environmental Studies department, stated that green space, especially the North Woods is “essential to the personality of our campus”, but he also noted the North Woods could be more effectively utilized.

While participants often defined the effectiveness of green space differently, environmental awareness was also brought to the forefront. Through probing participants about

how much time they spend outside and whether or not they consider the environmental impacts of their actions, participants' illustrated their environmental ethic. The majority of Environmental Awareness Surveys and Interviews noted that individuals were unsure of how much time they spent outside on average because the amount of time fluctuated so much depending on the season. In the winter, very few individuals noted that they spent anytime outside, while in the spring and summer, individuals craved the outdoors and would make time to go outdoors everyday. The environmental ethic of participants was shown through their response to whether they think of the environmental impact of their actions. The majority of participants found that they actively thought of the environmental consequences of their actions, and in further questioning, the participants noted that the Skidmore Community is, overall, aware of the environmental costs or benefits of their actions.

The notion of accessibility created a tension in our findings and results. The Environmental Awareness Survey forced participants to choose answers that fell within a numerical system; however, their answers to the same notion of accessibility and ease of navigation often differed. Accessibility, in terms of able-bodiedness, was not what most thought of during the Environmental Awareness Survey process. Though in the interviews, when participants had more time to think on their responses, there were discrepancies between Survey responses and Interview responses. The campus was thought to be accessible and easy to navigate on the Surveys, but during Interviews the majority of participants noted that the campus would be incredibly difficult to get around if physically disabled. Also, there were conflicting responses about the ease of travel across campus and the effectiveness of the existing pathways. The responses to the Surveys and Interviews also illustrate the fact that most people stray from existing pathways, which emphasizes the lack of accessibility and ease of travel for those who are not able-bodied.

Our final question for participants during the interview probed the individual to think back on their favorite outdoor space from anytime in their life. The question, following a medley of other similar questions, allowed for us to more aptly describe what makes an ideal space. However, an ideal space, we discovered, is very personal and unique to each participant. There were evident themes, for instance whether a space was open or confined, that allowed for a sense of legibility, security, and complexity that defined an individual's ideal space. In many cases, participants chose between an ocean setting or a forested setting to describe their favorite space. These results highlight the notion that enclosed spaces and open spaces draw individuals in for varying reasons like privacy or human interaction. Participants conceptualization of their favorite outdoor space was based on their identity. The Skidmore campus is highly complex in terms of the populations' conceptualization of space. However, the Skidmore environment could be immensely improved through utilizing the community's thoughts and perceptions of what is an effective or ineffective space.

Overall, the data collected through the interviews and Environmental Awareness Surveys highlight areas of use and disuse ultimately creating a more complex dialogue about functional spaces on Skidmore's Campus. The results point to two main conclusions that the campus is not easily accessible and that seasonality plays a large role in the amount of time spent outside. Skidmore College might look to construct more pathways, especially with wheelchair accessibility in mind, and create more covered walkways to make them usable in all seasons.

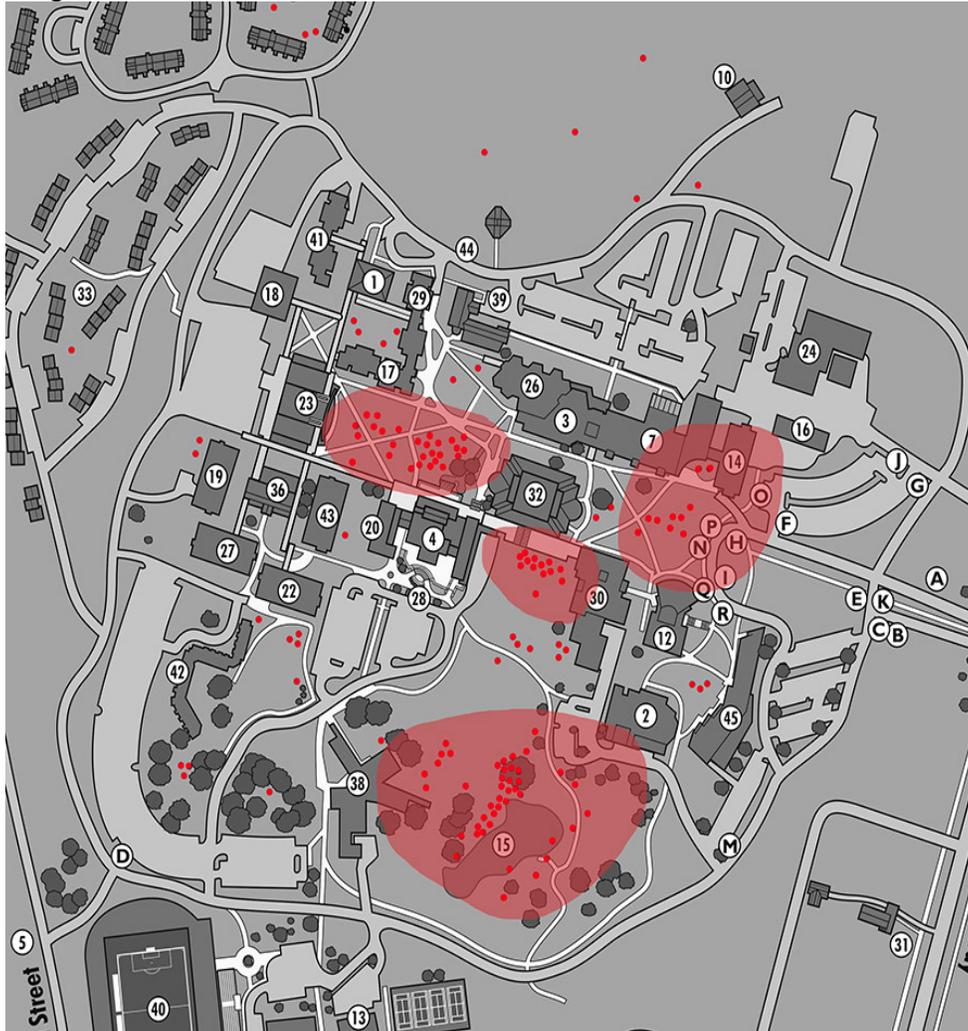
Points of Interest and Improvement

Methodology

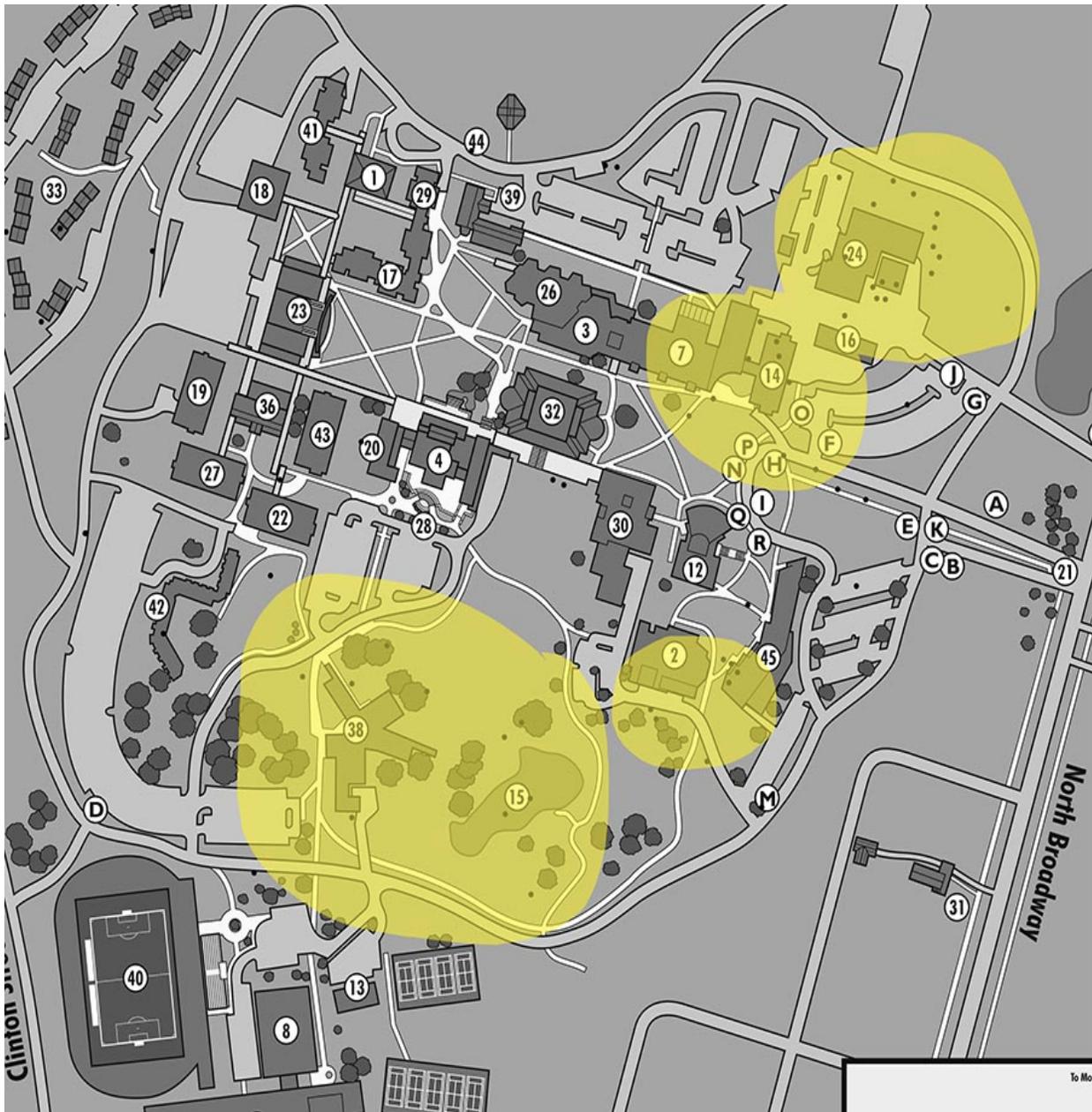
To further our understanding of effective and ineffective spaces on the college campus, we printed three large maps of Skidmore to create dot distribution maps. Dot distribution maps are maps which utilize participant-created markers to highlight areas that have characteristics associated with a particular question. We polled students, faculty, and staff in high trafficked areas on campus and asked them to place a dot on each map representing their response to our questions. We had three prompts we posed to our participants. Each prompt corresponded with its own campus map. The first map's prompt was to, "put a dot where you would like a picnic table." The second map's prompt was, "put a dot on a space that you never or rarely go." The third map's prompt was, "place a dot in a space that you think could be improved, and put a number next to it." For the third map, we chronologically numbered the dots and asked participants to write down their number and what they thought was wrong in the space they indicated or how the problem could be fixed.

Results

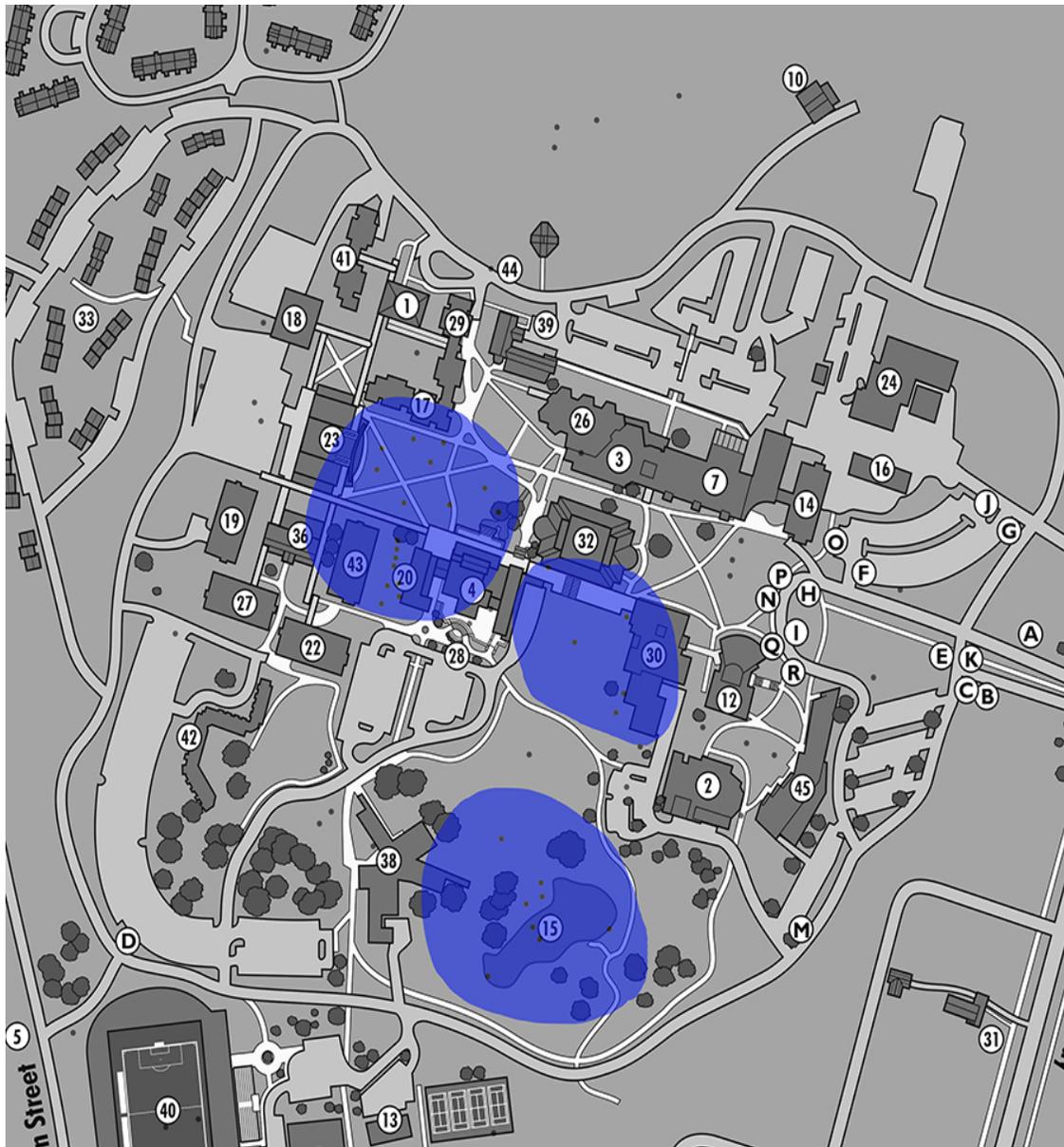
Each map showed unique clusterings of dots based on responses from the three prompts. Clusters consist of four dots or more in a specific area. Areas with less than four dots were deemed insignificant to our study. The first map, areas best suited for picnic tables, had 138 responses showing five areas with significant clustering (indicated in red). There were 27 dots by Haupt Pond, 9 dots on the Library Green, 7 dots on Case Green, 5 dots in the wooded area outside of Burgess/Case Center and 4 dots in the North Woods.



The second map, avoided or unfrequented areas, had 76 responses showing three areas with significant clusters (indicated in yellow). There were 15 dots placed by North Hall, 9 dots by the Broadway Entrance and 8 in the area between Zankel and JKB Theater.

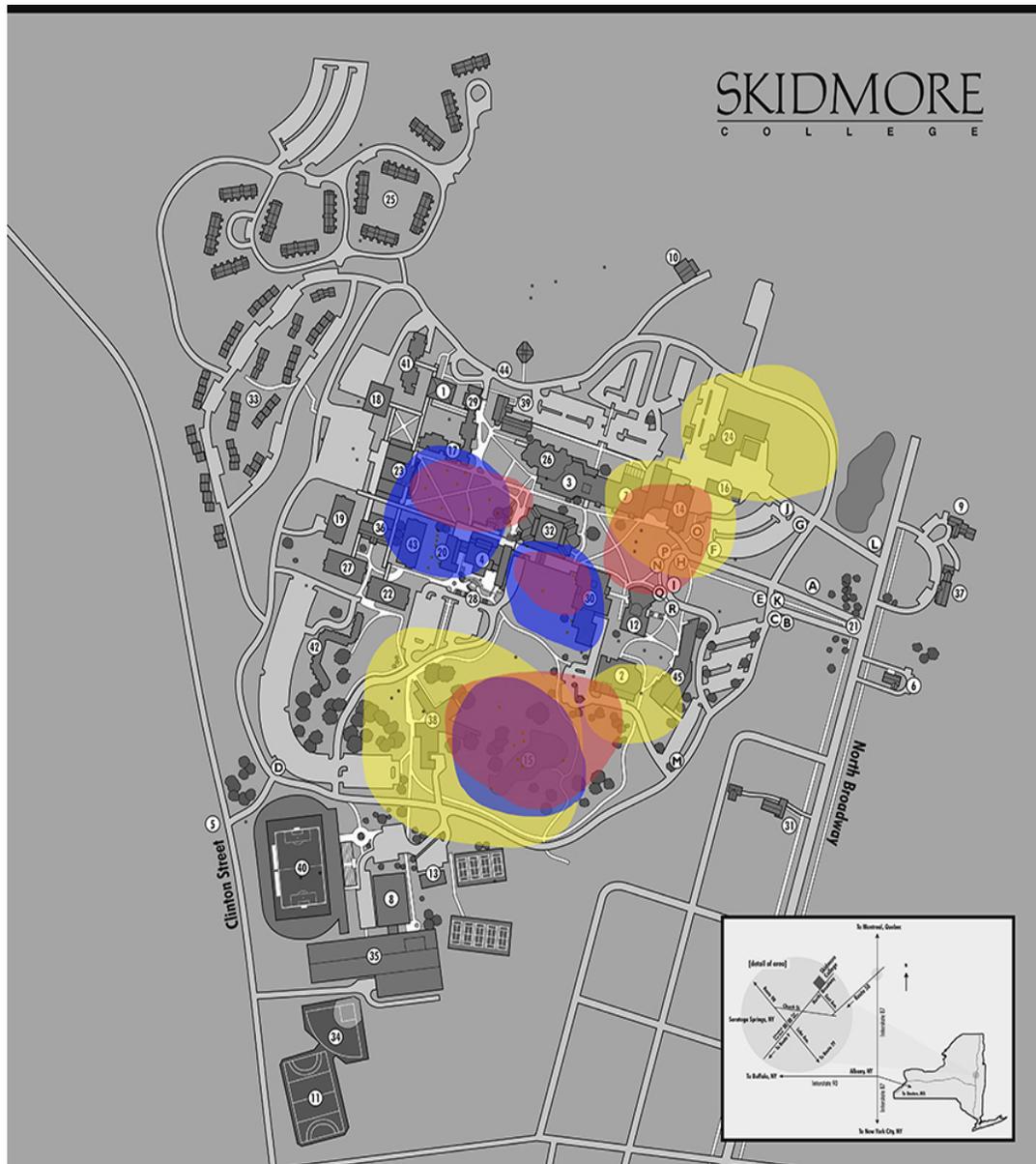


The third map, areas that should be improved, had 66 responses showing six areas with significant clusters (indicated in blue). There were 8 dots placed by Haupt Pond, 7 dots on Case Green, 7 dots in the space between Ladd and Wilmarth, 7 dots on the Library Green, 4 on the green between Dana Science Center and Saisselin Art Building, and 4 in the space by JKB Theater and Filene Theater.



Discussion

The dot distribution maps revealed several apparent trends. The majority of campus is not found just within the core: the Library, the Dining Hall, Case Green, and Case Center. Places that people mark as spaces they rarely go to are on the periphery of campus, such as outside Harder or North Hall. This could be due to the fact that the core of campus is within close proximity to dorms and classrooms. It may also allude to the idea that these spaces are not offering the amenities, such as coffee and benches, or aesthetic appeal to draw people to them. There are also many spaces that are rarely mentioned at all and do not fall in any of the clusters, such as behind the Dorms or near Zankel. This points to the lack of awareness the Skidmore community has about specific spaces. The map shows the layering of all three mapping results and highlights the significant correlations.



The purple areas are where the points of preference overlap and bring attention to spaces that could be made more effective and better utilized. An emerging trend we found is that places that participants look for improvement greatly overlap with the spaces marked as spending the most time. These areas include the pond, case green, and dining hall that are all are favored and indicated that need improvement. Responses showed that case green and the library green might be improved and made more effective with something as simple as picnic tables, adirondack chairs, or hammocks. The benefit of adirondack chairs is that people can pick up chairs and change the space to tailor the space to an activity. Another trend that appears with the overlapping maps is that where people want picnic benches are also where people indicated where they never go and looking for improvement. These spaces are more or less frequented in relation to the season. The Skidmore community also pointed to the inaccessibility for people with disabilities to get around campus. For example, getting from the Northwoods Apartments to the Tang is nearly impossible, requiring people to go all the way around Case Center. Participants also mentioned the flickering lights by Zankel and poorly planned paths going

through Dana Green. A complete list of recommendations from the points of preference maps are in Appendix C.

Conceptualization of the Campus Landscape

Methodology

Mental mapping is a qualitative research technique well suited for describing the social constructions associated with a particular landscape. The technique asks participants to draw an interpretative representation of space. How individuals illustrate space reflects specific personal interactions and relations with certain spaces (Tversky, 2003). From Feb 5 to May 30, we collected seventy-five mental maps from students, faculty, and staff of Skidmore College. We had 30 underclassmen, 30 upperclassmen and 15 staff for a total of 75 participants. Participants were selected through convenience and random sampling techniques. Our polling took place in the Dining Hall and Case Center and formulated the majority of our participant group.

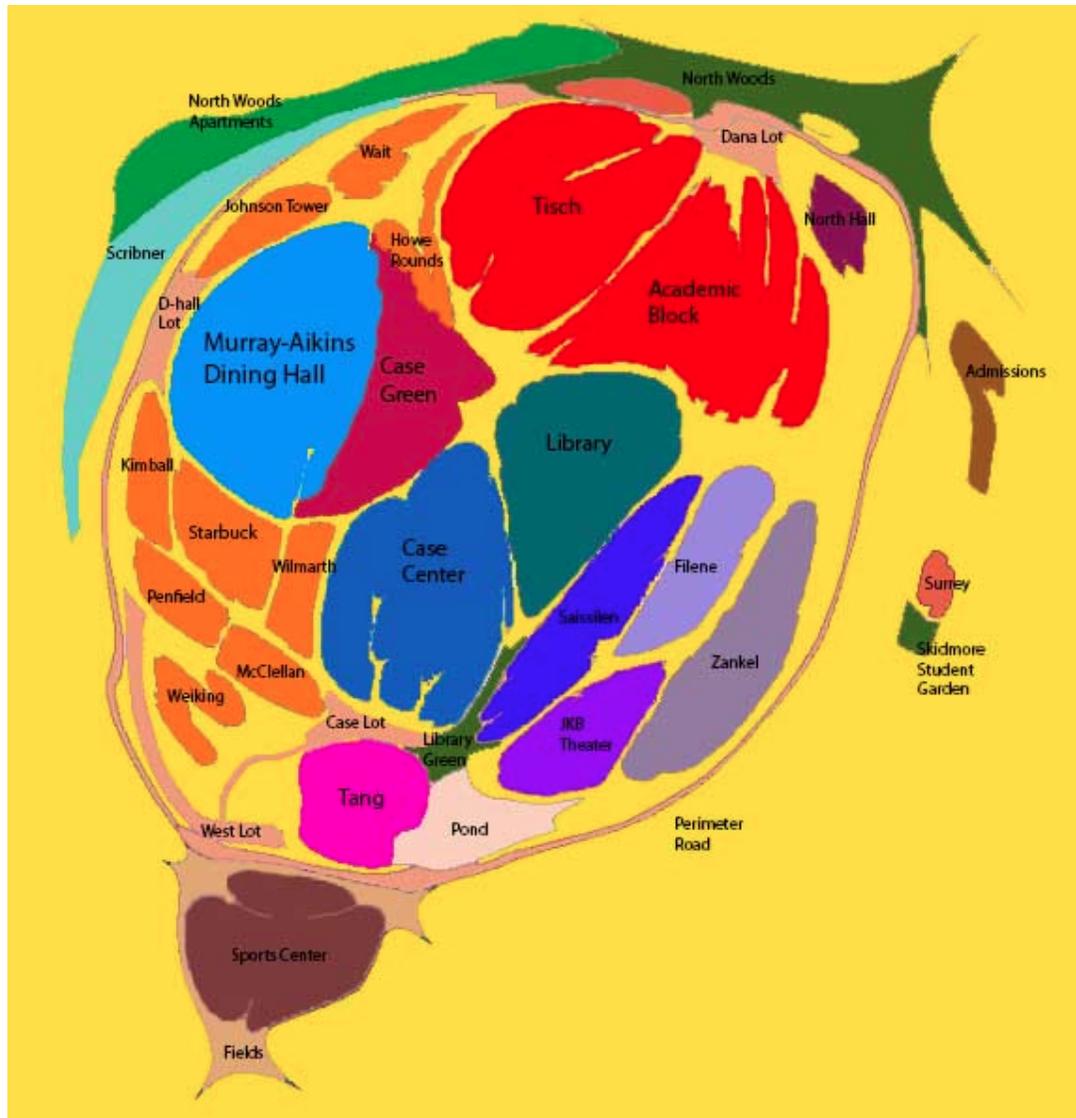
We designed our mental mapping protocol using open-ended and intentionally vague terminology in order to gain more authentic answers from our participants. There have been many other studies that utilize mental mapping in order to highlight areas of importance and interest. Our protocol was based on these previous studies including the Matei's Los Angeles study (Matei, 2001). The protocol used in Matai's study involved the collection of 215 mental maps of the southern third of Los Angeles to indicate where residents felt most comfortable or fearful, and then compared the sketches to GIS maps of the LA area.

Branching off of past methodology, we utilized iPad technology and the Showme application, an interactive whiteboard, to allow the mental maps to be recorded as they were drawn and as they were explained. Participants used the iPads and the Showme application to respond to four questions that gauged their view of space on campus (Appendix B). We first ask the participant to draw a map of Skidmore campus, then we ask about their favorite spaces, places that should be improved, and about their daily commute around campus. The response to each question was drawn in specific colors to provide a clearer visual representation of participants' answers.



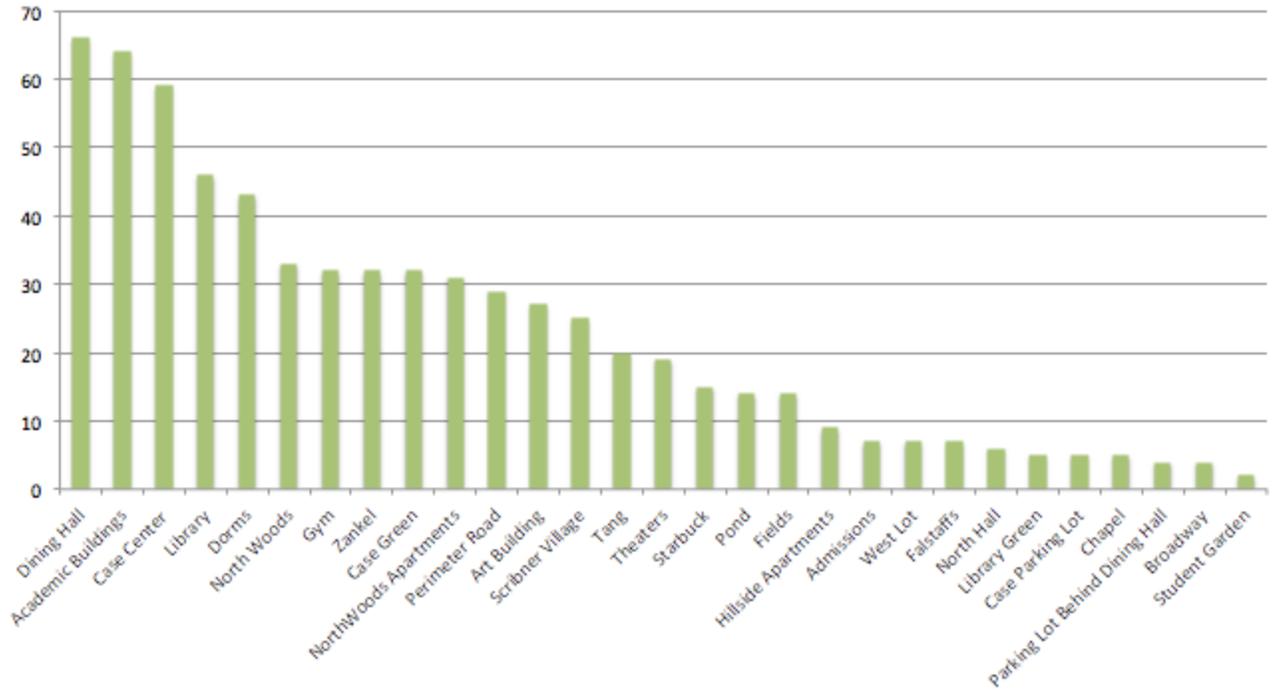
Example of Mental Map: Xavier '14

To analyze the data gathered through the 75 mental maps, we input all of the spaces mentioned by participants into an excel sheet. We then acknowledged the spaces on campus that were mentioned the highest number of times. Based on the number of times each space was mentioned in participants' mental maps, we exaggerated the sizes of the spaces to create a cartogram of the campus. Cartograms "distort a geographical map by distorting the area of a region according to some variable of interest (e.g. population) while keeping the map, as much as possible, recognizable" (Henriques, Bacao, and Lobo, 2009).



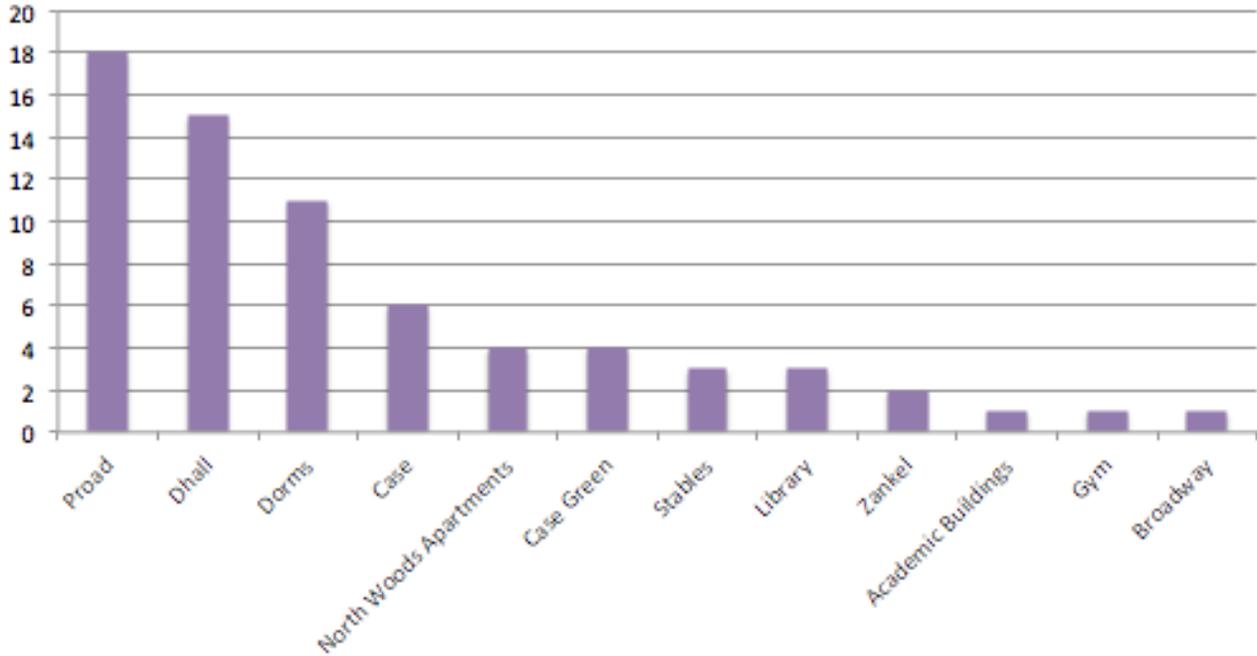
Mental mapping allowed us to rank the top spaces mentioned by our participants. The Dining Hall was mentioned in 88% of the maps that were drawn, with a total of 66 mentions. The Academic Buildings, Case Center, Library, Dorms and the North Woods were the next most frequently mentioned spaces on campus. There were a total of 38 spaces mentioned in the 75 mental maps we collected.

Spaces Mentioned



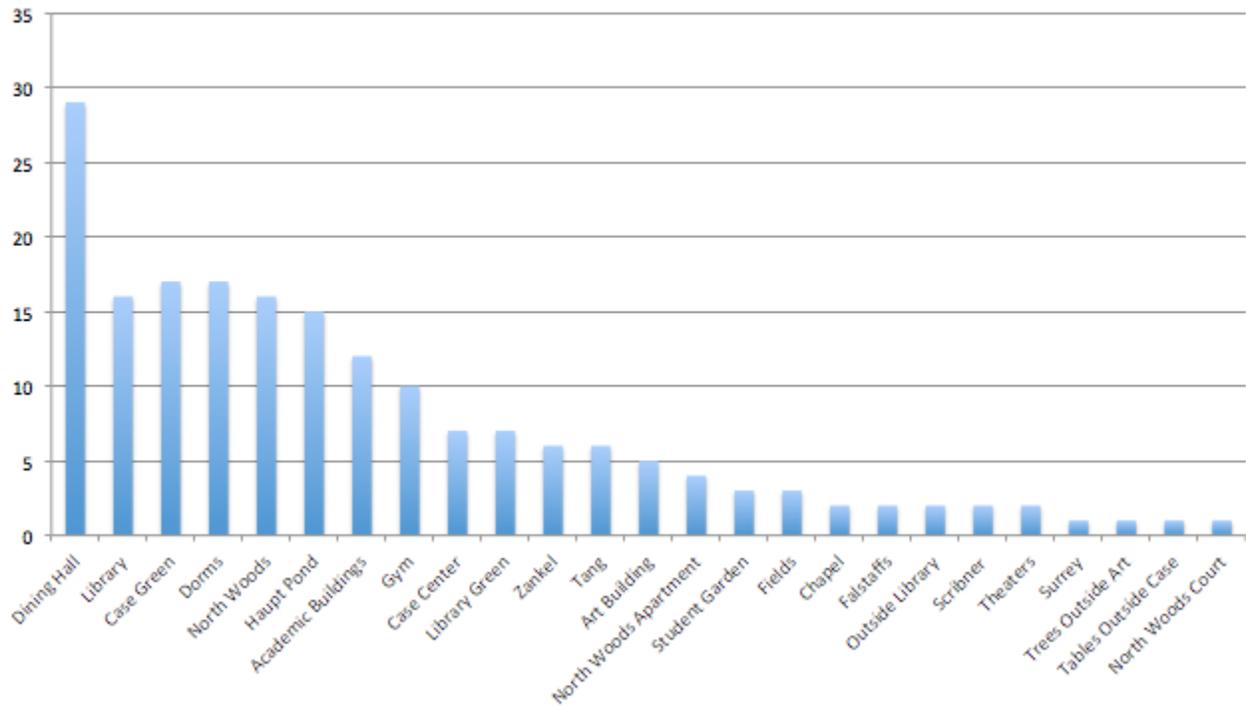
We also noted the spaces that participants drew first in their maps and counted the number of times those spaces were mentioned first. The Library was drawn first in 36% of the mental maps. Perimeter road was the second most frequently drawn first space. Perimeter road was drawn first in 22% of the mental maps. The Dining Hall was the third most frequently drawn space, and was depicted in 20% of the mental maps.

Spaces Mentioned First



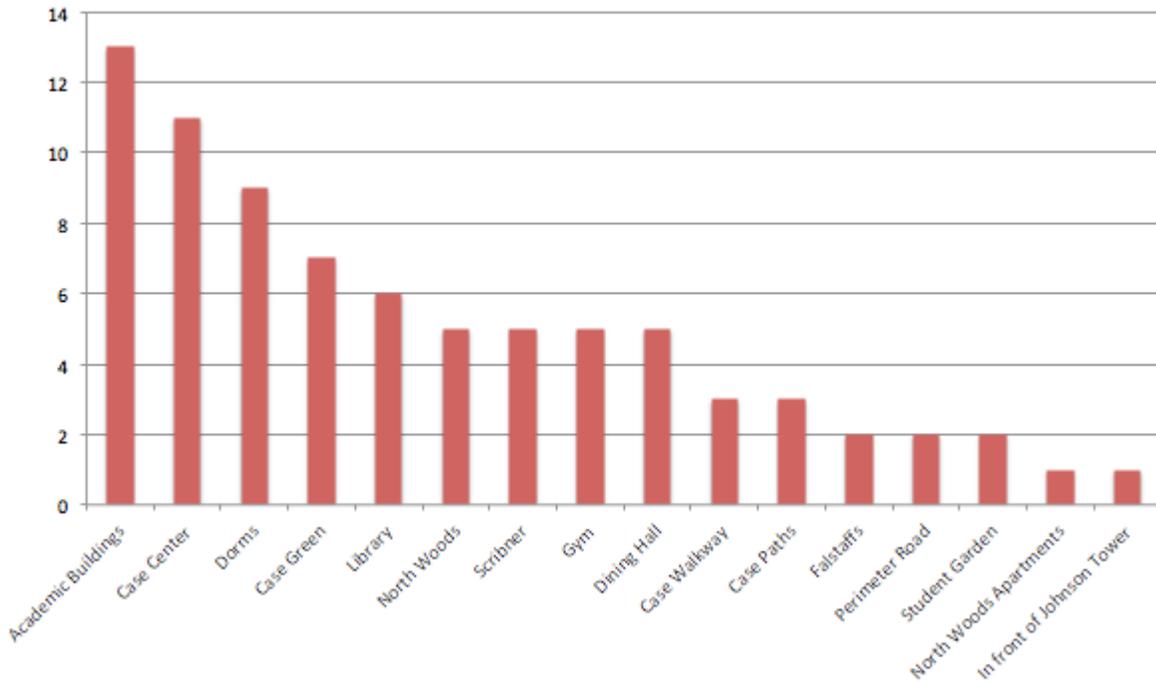
There were a total of 27 spaces that were indicated as favorite spaces on campus. The Dining Hall was favored the most as was stated in 37% of the mental maps. The Case Green, the Dorms, the Library, the North Woods and the Pond were the next most favorited spaces, and were mentioned in an average of 21% of the mental maps.

Favorited Spaces



There were 33 spaces that were mentioned as needing improvement. The spaces that were indicated as spaces that need improvement the most frequently were the Academic Buildings, Case Center, Case Green, and the Library. The Academic Buildings were indicated as needing improvement in 17% of the mental maps, and Case Center, Case Green and the Library were mentioned as needing improvement in 20.7% of the mental maps.

Improvements



Discussion

Cognitive maps act as “frames” for individual’s conceptualization of space, allowing for feelings and emotions to be visually quantified. By asking participants to create mental maps, we made their complex relationships with their environments comprehensible. Urban designers and campus planners can gain great insight through this means of data collection and can change the discourse of how an area should be organized. “The integrity and visibility of landscapes may be so commonplace that their inherent potential to prompt synthetic discovery has been ignored or trivialized” (Nassauer, 2012). People often ignore or do not notice the elements of their environment that make a space effective or ineffective. By prompting them to recall a space from memory, the complex relationships they have with the space and the spaces that are in their blind spots are inherently illustrated.

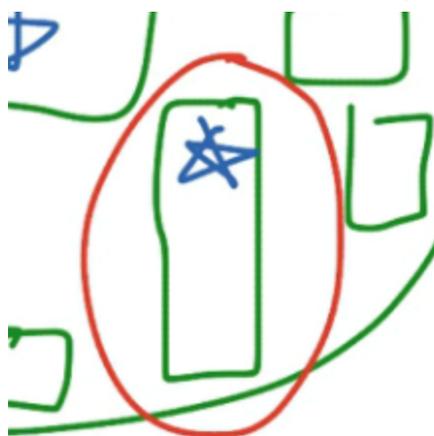
There were many spaces mentioned consistently throughout the mental maps. All of the top mentioned spaces correspond with the center of campus: the Library, the Dining Hall, the Academic Buildings, and Case Green. The center of campus was noted the most frequently because these spaces are used for everyday activities like eating, going to class, and studying. However, there are also several spaces within the main area of campus that were not described or drawn. Many of the outdoor spaces in-between buildings were indicated by extension of drawing buildings that surround them. For instance, the Library Green was often depicted by outlining buildings surrounding it, but there was no acknowledgement of the green space itself. These outdoor spaces that were not labeled while the participants were drawing reflects cognitive

recognition of the spaces. Outdoor spaces are often more difficult to label as there are no well-known names of many spaces; however, outdoor spaces that were more heavily utilized or well known like Case Green, the North Woods, or the Pond were mentioned frequently. Unlabeled outdoor spaces are significant in demonstrating that there are spaces that exist in the core of campus that are not well utilized. The green space in between Wilmarth and Ladd, for example, was never specifically drawn or labeled when participants drew a map of the campus. Skidmore may consider developing or improving that space, rather than expanding the campus outwards.

The spaces that participants used to begin their mental maps are significant for a myriad of reasons. Where a participant initially conceptualizes their mental image of a three-dimensional space represents a symbolic representation of Skidmore: the participant's home, the center of the campus, the most important part of campus, or the boundary of campus. Based on the information from the mental maps, we see that most people began with the Library, the Dining Hall, or Perimeter Road. The areas first noted on the mental maps were often edges or nodes. Edges, like the perimeter road, are significant because they illustrate the notion that the Skidmore community views the campus as an enclosed, holistic, space. Nodes, like the Library or the Dining Hall, are "major points where behavior is focused, typically associated with the intersection of major paths or places where paths are terminated or broken" (Bell, Fisher, Baum, and Greene, 1984). As we first asked the participant to draw a map of Skidmore Campus, edges and nodes often are spaces that orient an individual visually in order to draw a cognitive map.

In comparison to participants initial drawings of the campus, which focused on the core of campus, the spaces that were favorited did not necessarily correspond with the center of campus. The favorite spaces were evenly spread out across campus. This indicates that enjoyable spaces are subjective and there needs to be a variety of spaces to appeal to different types of individuals. Participants favorited the Dorms and the Dining Hall because that is where they spend time with their friends. However, participants also posited that the Academic Buildings were their favorite because that is where they have classes and study. The Surrey was mentioned several times as it is a unique place that most other people do not know about and allows for peaceful seclusion. By understanding the wide variety of, and meaning behind, different types of favorite spaces, Skidmore can generate a larger diversity of spaces for students to utilize and enjoy. The spaces that were indicated as needing improvement corresponded with the most frequently mentioned spaces overall.

The green between Wilmarth and Ladd was often forgotten in the mental maps, but was indicated as a place that needs improvement by 7 participants in our Points of Preference Map. The liminal space between these buildings could be greatly improved by a pathway, but would also benefit from better lawn maintenance, improved lighting, or even something as simple as a flower garden. This space is a prime example of an area close to the core of campus that was indicated as needing improvement but was forgotten when people were drawing their mental maps. It was forgotten because it was not unique enough to be remembered. The green between Wilmarth and Ladd is an interspace; people use it to walk between Case Green and the bus stop



without having to walk through Case Center. By recognizing why it was forgotten in mental maps and taking into account proposed improvements, Skidmore could transform this interspace into a unique, comfortable space.

Many of the spaces that were starred as favorite spaces were also circled in red to indicate that they could be improved.

The spaces that individuals spend a lot of time in are more likely to be embedded with memories and emotional ties. They are also more likely to be the spaces that people notice the most imperfections. The more someone uses a space, the more they are likely to confront ineffective aspects of the area. All spaces have aspects that could be improved, but those inefficiencies are much more apparent when people are consistently exposed to those flaws. Improvements in people's favorite areas can be minimal, but can have a great impact on the individuals that use that space daily. Case Green, for example, was one of the top five spaces that were favored, as well as one of the top five spaces that needs to be improved. This does not mean that Case Green is a totally ineffective space, but that small improvements could enhance that already meaningful space. The Skidmore community asked for more places to sit and aesthetic improvements like more flowers, water features, or fun structures such as a shelter or an art sculpture. While a teepee in the middle of Case Green may not be the best idea, these improvements speak to one common desire: something to do. Case Green is like a blank slate. By asking for these aesthetic improvements, it seems that the Skidmore Community wants more personality on this lawn in the center of campus. Based on our study, Case Green is an important space in the community's mind that could be enhanced by aesthetic improvements like flowers or water features.

Case Center is another space that was favored and indicated as needing improvements. It is a legible, coherent space that allows for many activities. This does not mean, however, that the Case Center is without flaws. It often came up in our research as a place that needs significant aesthetic and physical improvements. These changes would enable an increase in the number of activities and social spaces that the center has to offer. Case Center is highly utilized but is not as effective a space as it could be if small improvements were made.

Similarly, the pond area was a space that participants noted as an area that could be made more effective with small changes. The pond area is well liked and was indicated many times as favorite space, but there were many improvements suggested to make the area better utilized in the future. For instance, adding adirondack chairs, hammocks, or picnic tables would allow for more activities to take place and would add the complexity of the area. Other suggestions illustrated the importance of aesthetics, as many participants stated that they would spend more time by the pond if the pond itself was cleaner and the grass was better maintained.

Many spaces that need improvement are not memorable and thus are often forgotten on the mental maps. For instance, participants often drew paths but did not indicate them as a favorite space or a space that needed improvement. Participants noted in Interviews and Environmental Awareness Surveys that there was a lack of usable pathways, that the pathways were poorly maintained in the snow, and that some of the pathways were poorly located. Six people indicated on their mental maps that the pathways around Case Green and to Case center could be improved. By adding more direct routes to the Library and the Academic Buildings, keeping the pathways well plowed and well salted, or adding covered walkways to the Academic Buildings, Skidmore could connect different types of spaces more cohesively and effectively.

Conclusion

Effective space is imperative to create a well-balanced and environmentally conscious community. It can allow for more comfort in outdoor areas, enable a feeling of safety, and permit for more positive social interaction. To make an effective space, areas must foster certain qualities like coherence, legibility, and complexity (Nasar, 1988). Space must be understandable from a visual, three-dimensional, perspective. An aesthetically pleasing and/or well-designed

space will allow for the visual coherence of a space, which will allow for individuals to be initially drawn to that space. An effective space must also be legible and must allow for a feeling of safety. The legibility of a space means that an individual must be able to "read" the entire space from a glance, inferring the unseen parts of the space. The complexity of a space can be a hindrance or can give a space uniqueness that then will allow for more utilization and effectiveness. The Project for Public Spaces, a well-known landscape architecture organization, posits that "any great place itself needs to offer at least 10 things to do or 10 reasons to be there" (Project for Public Spaces). These ten offerings in a space allow for the complexity, and the uniqueness of that space, to be increased. The positive complexity of space will allow for a more diverse group of individuals and communities to utilize and feel comfortable in a space.

To create an effective space it is critical to understand the community's perceptions and conceptualizations of the space. The visualization of a space, including cognitive mapping, can illustrate the underlying social meaning of a space. Each individual and community member has a unique sense of the space, even if it is entirely subconscious. Thus, it becomes necessary to involve the community into the "place-making" of a space.

In the development of the image, education in seeing will be quite as important as the reshaping of what is seen. Indeed, they together form a circular, or hopefully a spiral, process: visual education impelling the citizen to act upon his visual world, and this action causing him to see even more acutely. A highly developed art of urban design is linked to the creation of a critical attentive audience. If art and audience grow together, then our cities will be a source of daily enjoyment to millions of their inhabitants (Lynch, 120)

In bringing together the community and the architect or urban planner a space can be reinvented to best suit the communities wants as well as what is needed. Truly effective spaces will only be created with strong community involvement.

Involving the Skidmore community was our main mission in understanding the campus landscape. We understood that students, faculty, and staff will only utilize a space if it is designed and made more effective based on their own ideas and visualizations. Assessing the Skidmore community's environmental ethic, specifically, was key to understanding space and creating an even more environmentally conscious population. Through our research we found that the Skidmore population generally considers the environment, even if the Northeast climate does not allow for much time outside during the school year. We see that same environmentally conscious perspective reflected in responses of participant's favorite spaces. Three out of the top six favorite spaces mentioned were outdoor spaces. This demonstrates the meaningful role that outdoor spaces have on the Skidmore College campus. Outdoor spaces are a way for people to interact with and learn from their natural environment, and are a crucial part of developing an effective college campus.

Our research focused specifically on outdoor spaces on the Skidmore campus, and through our data analysis and results we concluded that there are four specific locations that could be made more effective. Those locations are the Haupt Pond area, Case Green, Case Center, and the green between Wilmarth and Ladd. More generally, there are overarching themes from our research that might guide future improvements. For example, adding pathways, more lighting, and additional greenery to our campus will improve the overall aesthetics, the legibility, and complexity of our beloved campus.

The research on conceptual landscapes on the Skidmore College campus leads to a myriad of other project designs and gives a basis to others who seek to find out the perceptions of the Skidmore community. The methodology and results from our project is new to the environmental studies capstone, as we focus on environmental psychology and environmental sociology related fields. We also utilize technologies, the iPads and the ShowMe application, that previous years have not had access to. Our methodology allowed us to collect interesting and new data from the campus, which could be utilized in the future as a stepping stone for, not only future environmental studies capstones, but other research projects as well. For instance, as time constraints did not allow us to focus on the demographics of our participant population future studies could look specifically into their research population's year, gender or race. Our research also highlights that the conceptualization of the environment is crucial to understanding the physical environment itself. "The environment cannot be studied separately from the behavior, and the behavior cannot be studied separately from the environment, without losing valuable information" (Bell, Fisher, Baum, and Greene, 1984). In future studies, our project could be used to exemplify the importance of the behavior-environment relationship to bring credibility and backing to other mainly qualitative studies.

Throughout our research, we have found that, as a whole, Skidmore College is very lucky. The community is open-minded to different development ideas and tends to be very aware of the environmental impacts of their actions. The college has a plethora of land that goes undeveloped, left for the Skidmore community to enjoy as a natural environment like the North Woods. From our research, it seems that the community, as well as the college, would embrace the notions of looking inward to develop and create more effective spaces rather than looking outward. Making more effective spaces within the core and periphery of campus is imperative to creating a stronger community and more environmentally aware populations. Skidmore is fortunate because of the quantity and quality of the outdoor space it has already. However, we should not take advantage of these green spaces, the new land and the North Woods, without first looking at the underutilized and ineffective spaces we have in the center of campus. Skidmore has a luxury of space, and utilizing the space we have well, will further our community and environmental awareness on the campus.

Appendix A. Interview Protocol

- 1) What is your area of expertise/major?
- 2) How long have you been at Skidmore?
- 3) How much time do you spend outside? Please explain.
- 4) What changes, if any, have you observed here during your time on the Skidmore College Campus?†
- 5) What are your thoughts on the current renovations taking place on Skidmore Campus? ie Scribner/Northwoods/Slopeside
- 6) Do you think space is used well on Skidmore Campus? If so, why? If not, why not?
- 7) What areas on campus do you spend the most time? Please explain
- 8) How do you travel through campus?
 - 8a) Do you follow prescribed pathways?
- 9) Are there areas on campus that you would like to see changed? Please explain
- 10) Describe your favorite areas on campus. Why are they your favorite?
- 11) If you were given three picnic benches to place on campus. Where would you place them and why?
- 12) What first attracted you to Skidmore?
- 13) What are your favorite activities to do on Campus? Where do you generally do them?
- 14) Do you think Skidmore has a lot of “green space?”
- 15) Do you think that the “green space” on campus is well utilized?
- 16) Do you find Skidmore campus accessible and easy to use?
- 17) Here is a hypothetical situation: its the first day of spring and classes are cancelled! Where do you go on campus?
- 18) Imagine yourself in one of your favorite outdoor spaces from any point in your life (ie childhood). What things are you drawn to in these spaces? Why?

Appendix B. Mental Mapping Protocol

Participants will be asked to:

- 1) Draw a map of Skidmore in green.
(Label the Dining hall with a “D,” and case center with a “C.”)
- 2) Put a blue star on your favorite spaces on campus.
(If only buildings are labeled, ask “Please put a blue star on your favorite outdoor spaces).
- 3) Outline in red the spaces you think could be improved, and please explain how they could/should be changed.
- 4) Trace your daily commute in orange.

Appendix C. Points of Preference Improvements

Accessibility

Paths

- bike path and/or stairs
- path down to bus station

- any path here would be great
- walkway
- sidewalk by new scribner by road
- more paths to roadway
- its too steep and awkward
- safer walkway to NW lot!
- more paths in Northwoods separate from road

Other

- Park benches or something else to make the wooded area in front of case better
- change the door handles, and make them automatic.
- stairs here would be rad
- no speed bumps too big
- an official noticeable sign at the clinton entrance
- 24 hour parking lot
- less potholes on trails

Aesthetics

Grass

- more greenery in parking lots
- less asphalt around zankel
- grounds are really bad; needs grass!!
- improve green area around zankel
- better upkeep of grass in spring
- better grass
- more activities, nicer grass to sit
- pond needs to be cleaned, grounds (ditches, patches of grass)
- more flowers on the green in the spring time
- needs undergrowth improvement =) (better grass)

Other

- improved by art or sculptures in between the wooded area
- less dirty
- refined/beautified, ect.
- Garden? Water feature?
- more trees
- more trees too
- better maintained and more events planned here
- metals are getting rusty and gross
- trashcan
- graffiti on gazebo is ugly = (
- its ugly
- clean up the water
- water feature
- something more appealing for the main entrance than a parking lot and utilities building!
- more decor- seems bland.

Safety

- poorly lit, confusing, inaccessible
- fix flickering creepy lamp
- more lighting
- better lighting on walkway

Activity

- bring back the game room
- advertising/more events
- a chillout spot
- more places to sit
- better athletic facilities
- some kind of shelter
- more sitting areas and more security
- new turf field for athletic programs
- more stuff
- the area is not very well suited for outdoor activities
- love it, but it can be improved (not enough seating)
- more benches
- it would be awesome if we could turn the lights on the tennis courts
- something communal! (benches/volley ball court/etc.)
- more english classrooms
- starbucks (a real one) on campus!
- more local organic food in dhall
- More hammocks needed

No changes

- campus is great, no improvements
- no changes
- leave northwoods it alone

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