Students' Sense of Belonging in Study Spaces

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Abstract

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Students' Sense of Belonging in Study Spaces

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The ideal college campus provides a supportive, inclusive atmosphere for all students, enabling them to challenge their beliefs, extend their understandings, and engage in meaningful learning and knowledge production – inside and outside of the classroom. However, even on a single campus, students do not share uniform perceptions regarding the support and inclusivity of their campus environment (Smith, 2015). Students who identify with historical marginalized groups regularly report a lower sense of belonging and a less inclusive climate than their privileged peers (Hurtado, Alvarez, Guillermo-Wann, Cuellar, & Arellano, 2012). Students' sense of belonging is integral to student success and it is increasingly understood to be tied to social identity, particularly for students who identify with a minoritized group (Strayhorn, 2019; Vaccaro & Newman, 2016). Sense of belonging is also closely related to a student's perception of various campus environments. Students' most immediate experience with campus environments is via the components of campus in which they regularly interact (Strange & Banning, 2015) and an important component of the residential campus environment is the informal learning space - the places outside of the classroom in which students choose to do their studying and academic work (Painter et al., 2013).

Using a critical constructivist lens and an ecological development framework, in this basic qualitative research, I explore the relationship between a diverse group of

undergraduates' experiences in informal learning spaces (or study spaces) and their sense

of belonging. The findings indicate that students' navigation of study spaces can be

related to their minoritized identities and describe how the participants navigate campus

study spaces when experiencing uncertainty around belonging. Factors such as peer

anxiety, peer motivation, study space exploration, gendered spaces, group avoidance, and

disciplinary identity all played a role in participants' experiences in study spaces.

Recommendations for further research and to higher education practitioners such as

librarians, space planners, and student affairs staff are offered.

Dedication

This study is dedicated to the 31 students who graciously shared their thoughts and experiences about belonging and study spaces with me, and to all students who struggle to find their space on campus.

Acknowledgments

I am indebted to many people who have supported me in this endeavor. My committee members, Dr. Peter Mather, Dr. David Nguyen, Dr. Emmanuel Jean Francois, and most especially my chair, Dr. Laura Harrison, have provided valuable, earnest, and positive support and expertise throughout. Dr. Harrison's guidance has been invaluable, but it really was her course that opened my eyes to the impact qualitative research involving undergraduate students can have on the everyday operations of higher education.

Thanks to all of my classmates and all of my co-workers. Special thanks to Katy Mathuews who fits both of those categories and to whom I will be eternally grateful for her willingness to share her expertise and for being all-around inspirational. Thanks to the Patton College of Education Research and Graduate Studies Committee for the award and funding from the Graduate Study and Educational Research Fund.

Most importantly, I want to thank my family. First, to my partner, Dr. Chris Guder, thanks are not enough for your everlasting support and encouragement. I might actually have to do a load of your laundry now, but at least I won't have to hear jokes about how I will understand everything better once I have a PhD. Second, to my parents, who taught me to always be curious and to believe that knowing is possible. Finally, to my daughters, Katherine, Rachel, and Maggie, who not only bring me daily inspiration and joy, but also provided me with student perspectives I never would have otherwise received.

I began my doctoral program only knowing for sure that if I never started, I would never finish. Even though I have worked in higher education for 25 years, I learned something in every course and from every requirement that helps me do my job better. I consider myself extremely fortunate to have had this learning opportunity.

Table of Contents

List of Tables

Page

List of Figures

Chapter 1: Introduction

A White student at Yale calls campus police because a Black woman is napping with her schoolwork in the commons area of a residential building (Caron, 2018). A White college student attempts to launch her video blog career with a 3-minute rant about the "hoards" of Asian students at UCLA without "American manners" loudly using their cellphones in the library (M. Gutierrez, 2011; Lovett, 2011, para. 5). When we live in a society where incidents like these are commonplace, it should not come as a surprise that identity and space have a deep connection. Yet people often assume space is neutral and uncontested, especially spaces as seemingly innocuous as libraries and study lounges.

Scholars from a variety of disciplines, often applying a critical feminist lens, have articulated the social, political, and philosophical underpinnings of the relationships between hegemony, space, and identity (Knowles, 2003; Lefebvre, 1991; Lipsitz, 2007; Massey, 1993; McDowell, 1999). Dempsey, Parker, and Krone (2011) explained, "Control over the spatial organization of society is a crucial means for the reproduction of power relations, and a resource for social change" (p. 204). In their seminal work documenting life as an African American at a predominantly White university, Feagin, Vera, and Imani (1996) discussed "racial settings" on campus and noted, "Social relations are physically structured in material space, and human beings often view space expressively and symbolically. In most societies those with the greater power and resources ordinarily control the use and meaning of important spaces in society" (p. 49).

Questioning whether one belongs in a space is something with which most of us can identify. Who does not recall having some anxiety about fitting in and belonging

when stepping into an unfamiliar territory? One hopes on a college campus that this type

of anxiety is short-lived, as students find their place among peers. Unfortunately, that is

quite often not the case. Many American colleges and universities are dominated by the

cultural norms of the White, Christian, heterosexual, privileged young men for whom the

institutions were built (Cabrera, Franklin, & Watson, 2017; Feagin et al., 1996; Smith,

2015). As the previous anecdotes illustrate and as has been demonstrated repeatedly in

the literature, these cultural norms can create environments where students from

traditionally marginalized groups feel unsafe and unwelcome on campus (Cabrera,

Watson, & Franklin, 2016; Garvey, Sanders, & Flint, 2017; Harper & Hurtado, 2007;

Hong, Woodford, Long, & Renn, 2016; Hurtado et al., 2012; Smith, 2015). Students'

perceptions of the campus environment are shaped by a variety of components. These

include their understandings of the nature, purpose, and symbolism of campus spaces; as

well as the appropriate behaviors within spaces, not to mention the human interactions

they experience within them (Strange & Banning, 2015).

Diversity and Sense of Belonging

Over the years, college and university student bodies have become increasingly

more diverse due to an increased emphasis on recruiting students from traditionally

underrepresented populations, as well as the changing demographics of the United States

(Smith, 2015). A wide body of literature has documented the positive outcomes when

students from different identity groups interact (Smith, 2015). Yet, despite their growing

numbers, students who identify with a traditionally underrepresented identity group at

predominantly White institutions (PWIs) regularly report a less inclusive climate and a

lower sense of belonging than their privileged peers (Chun & Evans, 2016; Harper & Hurtado, 2007; Museus, Nichols, & Lambert, 2008; Rankin & Reason, 2005; Smith, 2015). An unwelcoming and unsupportive college environment has been associated with negative outcomes such as decreased academic performance, greater stress, and even health problems across a variety of social identity groups of students (Harwood, Huntt, Mendenhall, & Lewis, 2012; Woodford, Joslin, Pitcher, & Renn, 2017). Moreover, a positive sense of belonging has been shown to relate to academic persistence, success, and motivation (Freeman, Anderman, & Jensen, 2007; Hausmann, Schofield, & Woods, 2007; Hoffman, Richmond, Morrow, & Salomone, 2002). Research has also indicated that positive relationships with faculty and staff, support systems, friendships, involvement in extracurricular and co-curricular activities, and social acceptance are associated with improved sense of belonging (Freeman et al., 2007; Hausmann et al., 2007; Hurtado & Carter, 1997; D. R. Johnson et al., 2007; Means & Pyne, 2017; Pittman & Richmond, 2008; Strayhorn, 2019).

Not surprisingly, students' sense of belonging is closely related to social identity (Means & Pyne, 2017; Strayhorn, 2019). Strayhorn (2019) studied sense of belonging among a variety of student social identity groups, including Latino students, collegiate gay men of color, first year students, students of color in STEM fields, Black male collegians, and graduate students. The researcher determined that among seven core elements of sense of belonging, "social identities intersect and affect college students' sense of belonging" (Strayhorn, 2019, p. 37). Struggles with belonging in college are not limited to racial and ethnic minoritized populations. In a recent news item about

effective strategies to help first-generation undergraduates persist, a top administrator at the institution where I am employed stated,

> Developing a sense of belonging – challenging the belief that "people like me don't fit in at college" – is an important factor in our first-gen retention gap. Students who answered that they don't feel that they belong at OHIO have up to a 22-point drop in first-year retention. (Sayrs, 2018, para. 12)

Vaccaro and Newman (2017) examined how first-year students define, develop, and make meaning of a sense of belonging on campus and also found it can be described in relation to students' identity groups. They have used this data to begin to develop models of sense of belonging based on students' social identity groups, including minoritized and privileged students, LGBPQ students, and students with disabilities (Vaccaro, Daly-Cano, & Newman, 2015; Vaccaro & Newman, 2016, 2017). Additionally, other researchers have demonstrated that socio-economic status is also related to students' sense of belonging (Means & Pyne, 2017; Soria & Stebleton, 2013).

Furthermore, research on students' sense of belonging shows that it is quite dependent on complex environmental contexts (Hurtado et al., 2012). Strayhorn (Strayhorn, 2019) argues that the importance of belonging to individual students is contextual. For example, sense of belonging is heightened when one is a newcomer to a context and it "changes as circumstances, conditions, and contexts change" (Strayhorn, 2019, p. 34). Students also can feel a sense of belonging among their own subculture while at the same time feeling alienated from the larger institution (Garcia, 2017; Hurtado et al., 2012; Loo & Rolison, 1986; Villalpando, 2003). While the importance of the

environmental context to sense of belonging has been established and connected to social identity, specific environmental contexts have yet to be deeply explored.

How do students determine whether their campus environments are accepting and supportive? Likely, this would be through their everyday experiences. Students' most immediate experiences with campus environments are the components of campus in which they regularly interact (Strange & Banning, 2015). For undergraduates on a typical residential campus, this includes residence halls, classrooms, socialization spaces, and academic or study spaces outside of the classroom. Lowe, Byron, Ferry, and Garcia (2013) examined "the ways that race, the institutional climate, and interracial interaction in various campus locales operate simultaneously to shape students' perceptions of their university's racial climate" (p. 570). They found that neither the frequency of interracial interactions in the classroom nor in the residence halls were significantly related to student perceptions of the racial climate, but when students spent more time in the campus dining hall eating with students of a different racial group, they tended to have a better opinion of the campus racial climate (Lowe et al., 2013). The researchers attributed this to being outside the serious classroom environment, sharing a meal and engaging in conversations across differences that challenge stereotypes but do not escalate to the high-stakes or polarizing experiences the students explained happening in the classrooms and residence halls (Lowe et al., 2013).

What of study space? In their study of Latino college students' perceptions of campus racial climates, Hurtado and Carter (1997) found "a strong relationship between students' sense of belonging in college and reports of frequent discussions of course

content with other students outside class" (p. 334). Yet, examinations of students' belonging experiences in campus spaces have nearly universally ignored the spaces students choose to study. What can we discover about the role of these spaces in the academic experiences of undergraduates? Given the importance of the tasks students are expected to accomplish in these spaces, the significant time they spend in them, and the resources institutions invest in making them functional and attractive, one would presume some potential to influence students' perceptions of campus and their sense of belonging within it.

The Importance of Informal Learning Spaces

According to student reports via the National Survey of Student Engagement, college students spend about 15 hours per week studying, preparing for class, rehearsing, completing assignments, and reading course related materials (McCormick, 2011). This is about equivalent to the average amount of time full-time, undergraduate students are supposed to be in class earning 12-15 credits. The only activities college students do more, on average, is sleep and socialize (Strayhorn, 2019). Along with efforts to create inclusive classroom and co-curricular environments, university administrators should also be examining students in the places and spaces where they are spending this significant portion of their time performing tasks essential to their academic success.

Furthermore, Boys et al. (2014) found that where students went between classes and whether they could negotiate a space that accommodated their study and social needs had "a direct impact on levels of attendance as well as on a sense of engagement" (p. 13) with subsequent classes. Students described situations where they had to travel back to

their rooms to find the space they needed between classes and this made it difficult to be

motivated to come back to the classroom for the later scheduled course (Boys et al.,

2014). Creating spaces where students can accomplish their goals between classes and

maintain motivation throughout the day should be of interest to all institutions, but

especially to residential institutions, where students pay premium dollars for the

immersive college experience.

Study spaces, or informal learning spaces (more precisely defined later in this

chapter), make up a consequential portion of valuable campus real estate. One study of

informal learning spaces on a U.K. campus estimated that they comprised 3.2%, while

classroom spaces made up 4.2% of their campus' built square footage (Pepper, 2016, p.

107). Unfortunately, in the U.S., the amount of study space on campuses is not

specifically tracked, but we do know that higher education institutions invest resources in

these spaces. Institutions rely on these spaces to help both attract and keep undergraduate

students, and to maximize efficiencies in tight budget times (Toutkoushian & Paulsen,

2016). This is demonstrated by a recent story in the trade literature aimed at facilities

administrators. Tafoya (2017) discussed a current trend in architectural design in higher

education:

> Designers have begun to focus on how to make the most of each and every space
>
> in the campus setting. Instead of being restricted to the traditional classroom
>
> alone, modern design makes use of previously unlikely places, such as corridors,
>
> rooftops, outdoor areas, entryways and staircases as opportunities for students to
>
> meet, collaborate, study and relax. (para. 2)

Commons areas are now routinely and purposefully designed in new builds and remodels of campus buildings to maximize student-to-student and student-to-instructor interaction potential (Boys, 2015; Dugdale, 2009). Temple (2014) suggests that a well-designed university "stimulates high-quality interactions," creating "locational capital" which can be transformed into social capital (p. 11).

Campus libraries increasingly serve as the primary and preferred informal learning space on the residential campus (Marmot, 2014). These facilities are not only thought of as the heart of campus, but ever since Thomas Jefferson created the Rotunda at the University of Virginia, which housed that university's library in 1820, libraries are also often literally located in the center of campus – the most valuable real estate of all (Gyure, 2008; Marmot, 2014). Universities annually invest millions of dollars in these facilities (B.-L. Fox, 2004, 2017), no longer to hold books, but as student-centered learning spaces (Boys, 2015; Lippincott, 2013). Allocations of space in academic libraries have pivoted from 50% of square footage taken up by collections, 25% by staff, and 25% for library users, to 50% of square footage designated for library users, 25% for staff, and 25% for collections (Blackburn, 2016). Seat counts as a percentage of the total student body in library renovations and constructions have steadily increased, as has gross area per student FTE (G.A. Smith, personal communication, May 10, 2018). Furthermore, library study spaces are also increasingly available 24 hours, thereby requiring expanded institutional investment in security, electricity, custodial services, and general wear and tear (Johnson & McCallister, 2015).

Scholars of learning spaces and libraries acknowledge the importance of the institutional investment in these spaces with an increasing interest in discovering the relationship between these spaces on student success, but research demonstrating connections is slim (Bennett, 2005, 2006, 2007; Boys, 2015; Jamieson, 2003, 2009; Jamieson, Fisher, Gilding, Taylor, & Trevitt, 2000; Nitecki, 2011; Temple, 2008; Webster, 2008, 2010). Most research on these spaces has been concentrated on the discovery and documentation of aggregate student preferences and habits within these spaces (Painter et al., 2013). While not examined at the individual student level, researchers agree that best practices in design of informal learning spaces take into careful consideration the mission and culture of the specific institution (Lippincott, 2009; Montgomery, 2014; Ojennus & Watts, 2017; Webb, Schaller, & Hunley, 2008). What is appropriate for one institution may not work for another, as the characteristics of the student populations differ (Applegate, 2009; May & Swabey, 2015; Webb et al., 2008). Unfortunately, none of the research looking at variances in students' needs and preferences for study space has considered social identity. It has only examined and suggested differences related to residential versus commuter students, institution type (research, technical, etc.), and students' discipline of study (Applegate, 2009; May & Swabey, 2015; Webb et al., 2008).

In summary, informal learning spaces are important because they are important to both students and to higher education institutions. Students spend a significant amount of time in study spaces and appropriate, convenient, welcoming study spaces may help student motivation throughout the day. Institutions continue to invest in these spaces by

increasing their availability on campuses in expensive campus real estate such as libraries and elsewhere. Higher education institutions should strive to improve the positive influence these spaces have on all students. If some student populations do not feel as if they belong in these spaces and cannot therefore reap the benefits of the institutional investments, universities have failed to accomplish their goals. Despite the importance of the work students do in these spaces to their success in college, and the amount of time students spend at these tasks, the relationship between students' experiences in informal learning spaces and their sense of belonging has not been seriously explored.

Connections Between Sense of Belonging and Informal Learning Spaces

Over a decade ago, Ibarra (2005) posited that academic libraries may have, in response to changing student needs, begun to develop spaces that work toward more inclusive environments than other places on campus. Back then, the sociologist was impressed by the cultural shift he saw within academic libraries, presumed to be in response to the growing ubiquity of the internet, which "spurred many campus libraries to become more user-friendly and community-oriented than ever before" (Ibarra, 2005, p. 3). This was evidenced by relaxed food and drink policies, the presence of cafes within libraries, and the transformation of "catacomb-like reading rooms" into noisy, group study-oriented learning commons (Ibarra, 2005, p. 3). Delving deeper into the changing demographics of college students and the history of libraries, Ibarra (2005) then argued that the recent changes – the cafés and group study rooms, were perhaps only the latest in a long string of incremental changes libraries had made in reaction to the increasing

presence of traditionally underrepresented populations on campus, dating back at least to the influx of women and people of color during and after the war in Vietnam.

Supporting this notion, there is evidence that underrepresented students groups and women use spaces in their campus libraries more than the typical White male college student (Applegate, 2009; Elteto, Jackson, & Lim, 2008; Grimes & Charters, 2000; Kuh & Gonyea, 2003). Whitmire's (2004) study on African American students' use and perceptions of academic libraries led her to suggest that academic libraries can be "a racially neutral space for students of color – a counter-space" (p. 376). Indeed, the contemporary literature on academic libraries offers a great many examples of the ways libraries work to promote inclusivity to underrepresented student populations in their spaces. These include: creating prayer rooms for the convenience of students of all faiths, (Wachter, 2018); offering free menstruation products in library restrooms (Editorial Board, 2017); providing lactation rooms (Porter & Oliver, 2016), providing gender-neutral and family restrooms (Banush, 2016; Droll & Sullivan, 2016), ensuring gender diversity in library maker-spaces (Droll & Sullivan, 2016), and eliminating overdue fines and hosting food pantries (Booth, 2018), not to mention a great variety of programming and recruitment efforts aimed at promoting racial diversity in the workforce and positive, constructive communications across racial differences (Association of Research Libraries, n.d.).

However, in a recent examination of academic libraries through a critical lens, Brooke, Ellenwood, and Lazzaro (2016) pointed out that scholarship on library spaces "contains no substantive discussion of the systematic exclusions of non-White notions of

space, study, navigation, language, signage, and architecture that have constituted the construction of library spaces" (p. 260). The authors note the perpetuation of normative Whiteness through professional library building standards that suggest the existence of an ideal "neutral one-size-fits-all type of space" – that "inviting," "intuitive," and "accessible" mean the same for everyone (Brook et al., 2016, p. 260). They conclude that despite all of higher education's efforts in general, and all of the efforts of academic libraries specifically, "academic libraries still fall short of their intention to be spaces of empowerment and growth for marginalized community members, especially people of color" (Brook et al., 2016, p. 247).

Agreement with Brook, et al. (2016) does not necessarily contradict Ibarra (2005). Even though academic libraries may have failed to fully address their shortcomings regarding inclusivity, they may be more welcoming than any other informal learning spaces in the academy. Informal learning spaces other than libraries have been examined even less than library spaces. Only a few studies have investigated the relationship between students' perceptions of campus inclusivity and campus spaces other than classrooms and residence halls (Garcia, 2017; V. Gutierrez, Mendenhall, Harwood, Huntt, & Lewis, 2010; Lowe et al., 2013; Whitmire, 2004). However, specific campus spaces surface repeatedly in qualitative research on campus climate and belonging, including libraries, campus cultural centers, and dining halls (Linley, 2017; Sturm, 2016; Vaccaro, 2012; Vaccaro, Daly-Cano, et al., 2015). Lack of research helping to understand the role of campus spaces in the lives of students led Samura (2016a) to conclude, "Especially in the fields of higher education, there is still little clarity on how

space operates and limited work on the relationship between built environments and diverse students' interactions" (p. 126).

If predominantly White colleges and universities are serious about valuing diversity and creating inclusiveness, we need a better understanding of the actual experiences of students in campus spaces. Samura (2016a) argues for an "updated approach" to examining diversity in higher education which "emphasizes the spatiality of diversity and subsequently how students navigate physical and social spaces of higher education" (p. 126). Additionally, Samura (2016a) found that the notion of space can facilitate discussing problems stemming from otherness, One student's story about a residence hall restroom "became a moment when space served as a proxy for race; that is, she talked about space as a way of discussing her belonging (or lack of) in the residence hall" (Samura, 2016a, p. 138). Using space as a proxy for discussing students' sense of belonging yielded information the researcher may not have otherwise elicited from student participants. A purposeful exploration of student experiences in informal learning spaces could yield valuable information about the nature of campus built spaces, the human interactions within those spaces, and how either may influence students' sense of belonging.

Theoretical Framework

An appropriate framework for an exploration of student experiences in campus space is to apply an ecological model (Bronfenbrenner, 1979, 1993; Renn, 2000). This model encourages a holistic investigation of the setting and the environment, as well as the student, and the dynamic interrelationships between all (Chun & Evans, 2016;

Strange & Banning, 2015). The ecological model includes a variety of nested components that provide a structure for an examination of the student experience with consideration of a range of influences, including the student's family values and peer influences, the perceived purpose of and appropriate behaviors in a space, societal and cultural influences, as well as the human interactions that take place. The model is increasingly used as a framework for examining a wide variety of college student social identity groups, including sexuality and gender identities (Vaccaro, Russell, & Koob, 2015), African students (Stebleton & Aleixo, 2016), and Latinx students (Garcia, 2017), although none have focused on specific built environments within the campus context.

Statement of the Problem

The ideal college campus provides a supportive, inclusive atmosphere for all students, enabling them to challenge their beliefs, extend their understandings, and engage in meaningful learning and knowledge production. However, even on a single campus, students do not share uniform perceptions regarding the support and inclusivity of their campus environment (Smith, 2015). Students who identify with historical marginalized groups regularly report a lower sense of belonging and a less inclusive climate than their privileged peers (Hurtado et al., 2012). Students' sense of belonging is integral to student success and it is increasingly understood to be tied to social identity, particularly for students who identify with a minoritized group (Strayhorn, 2019; Vaccaro & Newman, 2016). Sense of belonging is also closely related to a student's perception of various campus environments. Students' most immediate experience with campus environments is via the components of campus in which they regularly interact (Strange

& Banning, 2015). An important component of the residential campus environment is the informal learning space - the places outside of the classroom in which students choose to do their studying and academic work (Painter et al., 2013). Despite the importance of this work to their individual success, the amount of time students spend at these tasks, and the resources institutions invest in these physical environments, the relationship between student experiences in informal learning spaces and students' sense of belonging has not been seriously explored.

Purpose of the Study

The purpose of this study is to explore a diverse group of undergraduates' experiences in informal learning spaces on a residential, predominantly White, Midwestern university campus in order to better understand how these microsystems promote or impede students' sense of belonging.

Research Questions

The research questions addressed in this study were:

Research question 1: How do students' experiences in informal learning spaces relate to their sense of belonging?

Research question 2: How does social identity shape students' experiences in informal learning spaces?

Research question 3: How do the ecologies of informal learning spaces relate to students' sense of belonging?

Significance of the Study

This study builds on the growing body of literature examining a variety of student social identity groups' sense of belonging on campus. This study makes a unique contribution to the understandings of campus environments and students' sense of belonging by exploring students' experiences in a particularly important campus space – informal learning spaces. Perhaps most importantly, this study offers a new approach to examining the vexing problems of minoritized students' success on predominantly White campuses.

Despite the gains affirmative action policies and other admissions practices have had in matriculating a more diverse pool of people into college, there is a disconnect in performance and persistence that cannot be satisfactorily explained by preparation or other factors educational researchers typically examine (Carnevale & Strohl, 2013; Smith, 2015; Tinto, 2012). To address this, institutions have typically focused on increasing the structural diversity of the faculty and staff (although limited to sex and race); crafting and promoting value statements regarding inclusion and diversity; requiring a diversity-related curricular component for undergraduates; and hosting a variety of opportunities for all persons on campus to improve their understandings of people different than themselves (Smith, 2015). It has been nearly 20 years since Bowen and Bok (1998) identified what we today refer to as the achievement gap and yet it remains, along with regular news headlines and research reports that clearly demonstrate that minoritized students struggle with acceptance and belonging on traditional campuses (Chun & Evans, 2016; K. M. Goodman & Bowman, 2014).

This lack of progress has led many scholars to call on institutional reforms at a deeper level. According to Ibarra (2005, p. 6), "The real problem in achieving diversity today is linked to the origins of our institutional culture" in the values, norms, and cultural practices of the dominant Eurocentric-male. Contemporary scholars suggest this can only be overcome by changing the very fabric of our institutions (Hurtado, 2015; Smith, 2015). Similarly, Eckel and Kezar (2012) call for deep, transformative change that truly reflects a shift in values and assumptions and has a measurable impact on campus climates. Change of this nature will require a much deeper understanding of the lived experiences of our students.

This study uses a critical constructivism perspective to examine the experiences of minoritized students' sense of belonging in informal learning spaces. Critical constructivism can reveal realities about higher education environments that are typically not apparent in the dominant narrative (Kincheloe, 2008). It offers an "alternative rigor" which adds to and complements previous work and can provide new insights (Kincheloe, 2008). At the same time, relying on the ecological model of student development provides a framework for this examination that seeks to offer a holistic picture of students' experiences in informal learning spaces by examining the broader environmental influences of built environments, as well as the human interactions within them.

While commonplace for the typical undergraduate, these environments are rarely examined for their impact on student success, even though maximizing the benefit of all campus spaces for student success is increasingly important to higher education officials

and funders (Boys, 2015). While quantitative research has provided an abundance of information about the inability of higher education to level the playing field for the minoritized students, as a critical constructivist qualitative study, this research offers an alternative approach which can add to and complement previous work (Kincheloe, 2008). This study seeks to discover how people interpret their experiences and make meaning of their world (Merriam & Tisdell, 2016). The results of this study will provide new insights into the experiences of undergraduate students that will be useful for diversity scholars, librarians, and higher education planners.

Definitions

First, it is worth noting definitions related to social identity, as they are key to understanding to complete picture of belonging experiences. Throughout this study, when referring to research on specific populations characterized by their social identity or other demographic, I will refer to them using the labels used by the author(s) of the publication being cited. Otherwise, I will refer to populations of people by the labels defined below or by a label selected by an individual research participant to describe his/her/their own person.

Privileged: Students from historically dominant social identity groups who typically have enjoyed a system of advantages with "access to power, resources, and opportunities" and who enjoy the 'psychological freedoms' associated with 'being the norm'," especially on predominantly White college campuses (D. J. Goodman, 2011, pp. 18–23). Typically, these students identify as American, White, Christian, middle/upper class, heterosexual, and without a disability (Vaccaro & Newman, 2016).

Minoritized: Students who represent historically oppressed social identity groups on predominantly White campuses. This term denotes the "social construction of underrepresentation and subordination" of individuals as minorities in the predominantly White campus environment (Harper, 2012, p. 9). "Persons are not born into a minority status nor are they minoritized in every social context . . . they are rendered minorities in particular situations and institutional environments that sustain an overrepresentation of Whiteness" (Harper, 2012, p. 9). While Harper (2012) was specifically discussing people who do not identify as White, other scholars have adopted this terminology to describe a broader swath of people including LGBTQ+ students, first-generation students, low-income students, and students with disabilities (Chun & Evans, 2016; Linley, 2017; Vaccaro & Newman, 2016). Additionally, in this study, I include international students for whom English is not their first language who have chosen to enroll at the site of this study. These students are often minoritized on predominantly White college campuses in much same way as other minoritized identities (Killick, 2017; Kim & Kim, 2010; Stebleton, 2011; Stebleton & Aleixo, 2016; Stebleton, Soria, Huesman, & Torres, 2014).

Ecology: The dynamic interaction of person-environment components that "creates the overall quality and force of students' immediate experience of any particular setting," (Strange & Banning, 2015, p. 279). These components range from the architecture and design of the immediate surroundings and the people nearby to the greater culture ideologies at play during a particular time.

Informal learning spaces: Three categories of spaces on college campuses: study areas within libraries; gathering spaces that accommodate informal interactions such as dining

areas, student unions, and outdoor campus spaces; and corridors and transitions between various formal learning spaces, such as lobbies and hallways in academic buildings (Painter et al., 2013). The "informal" designation is in opposition to the spaces where "formal" learning take place, that is, classrooms (Painter et al., 2013). Throughout this study, the terms "informal learning spaces" and "study spaces" are used interchangeably.

Sense of belonging: Whether, when, and why a student feels like he/she/they fit-in, belong, and can be their comfortable, true self in a place or space. Grounded in basic human needs, Strayhorn (2019, pp. 29–40) suggests students' sense of belonging includes at least six core elements. First of all, sense of belonging is a universal, basic human need. It is also a motive sufficient to drive students' behaviors. It takes on a heightened importance in certain contexts, at certain times, and among certain populations. It is related to mattering and it is influenced by one's identities. When a student feels a sense of belonging, it can lead to positive outcomes and success. Finally, it must be satisfied as conditions change.

Methodology

The purpose of this study was to explore a diverse group of undergraduates' experiences in informal learning spaces on a residential, predominantly White, Midwestern university campus and improve understandings about how these microsystems promote or impede students' sense of belonging. A critical constructivist epistemological framework guided this qualitative exploration. The focus of this study was on meaning and understanding. Therefore, a basic qualitative research approach was used to study how undergraduate students of varying self-identified social identities

interpreted their experiences in informal learning spaces and what meaning they attributed to those experiences (Merriam & Tisdell, 2016).

The setting for this study was a single institution in which the researcher has convenient and on-going access to students and informal learning spaces. Currently enrolled undergraduate students who have attended the main campus at this institution for at least two semesters served as the unit of analysis. Participants were recruited through email and purposeful sampling was used to explore different social identities, perspectives, and experiences. Data was gathered through a demographic survey and in-depth interviews, as well as through analysis of documents related to and artifacts within the informal learning spaces identified by the participants. Related documents could include policy statements, historical documentation, or news items pertaining to specific spaces. Related artifacts could include art, signage, portraits, decorations, graffiti or other visual or architectural elements within an identified space.

Scope and Delimitations

This study was comprised of traditional-aged college undergraduates attending a single, predominantly White research university located in a rural setting in the Midwestern United States. Several delimitations bound the scope of this study. First, this study examined students' experiences at only one institution. This simplified and narrowed the scope of the research to make it manageable within the timeframe of this research. Examining only one institution also allowed the researcher time to concentrate on a robust exploration of the ecology of spaces within this single campus environment and triangulate data collected through multiple methods. The significance of context on

belonging is such that this study's focus on one institution was appropriate for an initial exploratory study. Research demonstrates that students may experience a belongingness in a particular setting on campus while at the same time not experience a sense of belonging to the institution at large (Strayhorn, 2019). For this reason, the researcher probed experiences across multiple study spaces within the institution with each participant. Second, all participants must have completed at least two full time semesters of study on this campus. In order to have relevant experiences to share with the researcher, participants must have spent some time on the selected campus, negotiating non-classroom spaces available for academic study. Finally, this study was specifically investigating informal learning spaces in which students choose to do academic work, that is, study, prepare for examinations, and work on assignments. While campus areas such as dining halls meet the definition of informal learning spaces provided by Painter et al. (2013) and may even be used on occasion by students for study purposes, this research is interested specifically in environments built for academic purposes outside of the classroom.

Limitations

There were two limitations to this study. First, this study attempted to explore the experiences of students from a variety of social identity groups, rather than focusing on a deep exploration of the experiences of any particular social identity. While a deep exploration of one social identity could offer valuable information for the formation of theory, the purpose of this study was to explore and document differences and similarities related to belonging experiences across social identities in informal learning spaces, not

to formulate theory. The literature demonstrates that students from different social identities experience sense of belonging differently (D. R. Johnson et al., 2007; Le, LaCost, & Wismer, 2016; Means & Pyne, 2017; Vaccaro, Daly-Cano, et al., 2015; Vaccaro & Newman, 2017). By exploring experiences across identity groups, I was seeking to identify any similarities and differences in participant experiences in informal learning spaces and how participants understand and explain those experiences. Furthermore, including a variety of types of social identities and permitting students to define the importance of those identities in relation to their experiences in informal learning spaces also allowed for intersectionality to surface in ways that may not be possible if I focused on a single identity group (Means & Pyne, 2017; Renn, 2000).

The second limitation in this study was the researcher herself. As a White, middle-aged librarian, with extensive professional experience in Midwestern university libraries, I acknowledge that I brought a perspective to this study for which I must exercise thoughtful reflexivity. My positionality is discussed in more detail in Chapter 3. Some might conclude that due to my extensive years working in academic libraries, I may have had some hypothesis regarding the interplay between informal learning spaces and students' sense of belonging. To that, I can only say that students occupying space in the periphery of my work has been a constant, but like most people in higher education, I rarely stopped to think about how specific spaces and interactions within those spaces might relate to a student's success or academic behavior. In libraries, I have witnessed and been involved with negotiating conflicts between groups of students, even an occasional cultural difference (the "Greek" students complaining that the African

American students are too noisy and vice versa). I have heard White library staff worry about how they might be perceived by racially minoritized students when enforcing behavior rules in the library. I have spent time thinking about when it is and isn't appropriate and practical to set aside highly valuable and sometimes very scarce space for specific populations of students, e.g. students who desire private lactation spaces, student veterans, student athletes, and students who desire private prayer spaces. Students have told me they study at the library because it helps them be serious about studying since everyone else is too. Students have also told me they never use the library to study. I have only recently been able to formulate the research questions for this study because of my diversity studies and exposure to literature offering critical examinations of space and power relations. I did not have any preconceived notions about the relationship between specific informal learning spaces and students' sense of belonging, but I did have many questions.

Chapter 2: Literature Review

The purpose of this study was to explore a diverse group of undergraduates' experiences in informal learning spaces on a residential, predominantly White, Midwestern university campus in order to better understand how these microsystems promote or impede students' sense of belonging.

The research questions were:

1. How do students' experiences in informal learning spaces relate to their sense of belonging?

2. How does social identity shape students' experiences in informal learning spaces?

3. How do the ecologies of informal learning spaces relate to students' sense of belonging?

This literature review is organized around the concepts of diversity, informal learning spaces, and belonging. After a brief review of the importance diversity on college campus, I summarize current understandings of these experiences for both privileged and minoritized student populations. This is important because this research demonstrates that diversity experiences influence these populations in different, sometimes opposing, ways.

Figure 1 is a graphical representation or concept map of the relationships between the remaining concepts covered in this literature review (informal learning spaces,

students' sense of belonging, and the ecological model of development). In this figure, green nodes are the key concepts being

explored. Gray child boxes are important aspects related to my research questions. Solid arrows connect known relationships and

dotted arrows connect unknown or suggested relationships from the literature.
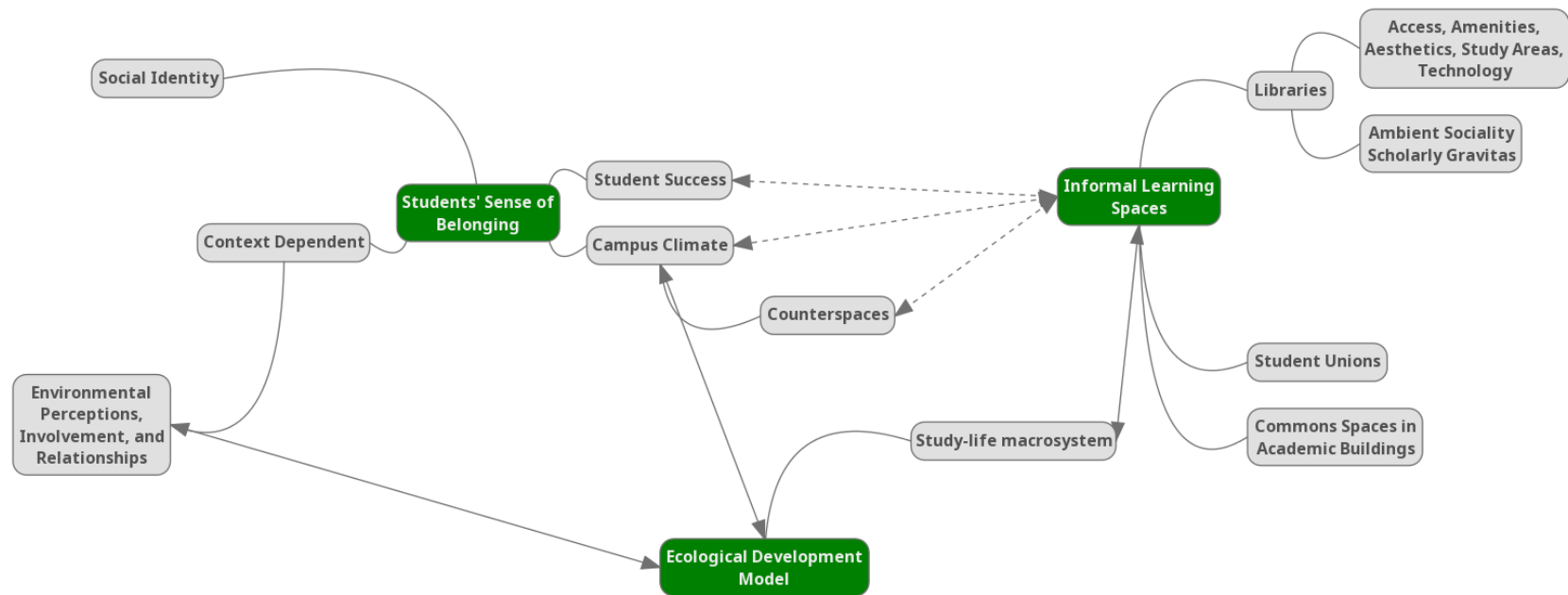
Figure 1. Concept map of the literature review.

In the next section, I review literature on informal learning spaces, in which scholars have expressed increasing interest in exploring how built campus environments influence student success. Next, I discuss a specific aspect of the research on informal learning spaces in libraries characterized as "ambient sociality," (Crook & Mitchell, 2012, p. 136) which has potential to inform my research, as it appears to relate to both the purpose of a built space and the interactions within it. I then move on to discuss the literature regarding students' sense of belonging as a component of student success. Here again, I highlight recent research that has demonstrated differences between the ways privileged and minoritized students think about and understand belonging. Because of the limited amount of research looking at the relationship between informal learning spaces and belonging, and because students' sense of belonging is closely linked to campus climate, I examine research that touches on belonging, campus climate, and specific campuses spaces, including counterspaces. This chapter then concludes with a review of the theoretical foundation of this study, Bronfenbrenner's (1979) ecological model, and how it has been applied in the examination of students' experiences related to their social identities.

The Importance of and Problems with Diversity at PWIs

A significant body of literature on the value of diversity in higher education began to emerge in the late 1990s in response to the legal challenges to affirmative action practices in admissions (Smith, 2015). By the mid-2000s, this research consistently demonstrated positive outcomes when students from different identity groups interacted (Smith, 2015). These positive impacts include a variety of desirable student success and

learning outcomes, such as critical thinking, openness to diversity, and citizenship engagement (Cole, 2007; Gurin, Dey, Hurtado, & Gurin, 2002; Hurtado, 2001; Milem, Umbach, & Liang, 2004; Pike, Kuh, & Gonyea, 2007).

However, as this area of study increased and became more nuanced, questions surfaced about the effectiveness of diversity-related institutional practices across all groups of students (Engberg, 2004). Because the emphasis of early higher education diversity studies was to document the benefits of diversity to all students, they primarily examined benefits in the aggregate, which reflect the privileged student population (Smith, 2015). These privileged students certainly benefit from diversity efforts, but when examined more closely, some campus diversity practices are found to be less impactful to the minoritized student and may even be harmful (Bowman & Brandenberger, 2012; Linley, 2018; Loes, Pascarella, & Umbach, 2012; Roksa et al., 2017). The harmful effects of diversity efforts can be especially pronounced for minoritized students at predominantly White institutions (PWIs), where these students report experiencing microaggressions, invisibility and exclusion, as well as being hyper-visible with added stress and anxiety from feeling the need to represent their entire group to the privileged student body (Cabrera et al., 2017; Smith, 2015). Harwood, Huntt, Mendenhall, and Lewis (2012) explain, "The experience of PWIs as unwelcoming and unsupportive for students of color has been associated with adverse outcomes: poor academic performance, greater stress, and poor mental health problems" (Harwood et al., 2012, pp. 159–160).

New motivations for understanding the value of diversity in higher education began to emerge after the turn of the century when it became apparent that the population of United States is rapidly becoming "minority-majority," that is, by 2020, more than half of the children in the United States will not identify as White (Colby & Ortman, 2015). Additionally, as the corporate marketplace has grown increasingly competitive on a global scale, employers have emphasized a need for graduates with intercultural skills and abilities (Hurtado et al., 2012). Finally, in recent years, research on intersectionality and multiple identity in student development has also increased, improving our understanding of the complexities of the diversity experience, but complicating the path to understanding the effects of institutional practices and environments on students (Hurtado et al., 2012; Smith, 2015).

In sum, diversity in higher education institutions is proven desirable and necessary, yet predominately White institutions struggle to create college diversity experiences which lead to improved student outcomes for all and which don't make minoritized students feel alienated, stressed, and unwelcome. Diversity scholars today argue for a variety of new approaches to enable progress. Smith (2015) calls for reframing institutional diversity efforts from a component of an institution's strategic plan, to central to the institutional mission, equating it with technology and suggesting the integration of meaningful considerations of diversity and inclusiveness in every decision, as well as the support to enable that and assessments to measure progress. Focusing on student development and diversity, Chun and Evans (2016) argue for "the development of a cohesive institutional approach across curricular, cocurricular, and

service-learning domains" that focuses on problematized diversity competence development in students over and above simple cultural competence (p. 10). Cabrera, Franklin, and Watson (2017) suggest that only through a critical exploration of Whiteness can PWIs disrupt and transform the normative situation and shape improvements to higher education policy and practice. The common thread connecting all suggestions is an improved understanding of student experiences across all similarities and differences.

Informal Learning Spaces

In a meta-analysis of the literature, Painter et al. (2013) noted that research on informal learning spaces primarily focused on their physical qualities and took the form of observational case studies examining student use patterns in specific spaces or ethnographic investigations into student preferences for study space, particularly in libraries. Recent treatises on designing spaces for the future of learning on academic campuses underscored this emphasis on libraries (Boys, 2015; Harrison & Hutton, 2014; Walton & Matthews, 2016). In discussing informal and self-directed learning spaces, Boys (2015) noted that "early innovations in learning space design (both physical and virtual) has tended to come from outside 'conventional' academic activities, that is, have been initiated by library and student support staff on one hand, and by learning technologists, on the other" (pp. 95-96). While Harrison and Hutton (2014) reviewed contemporary thinking about the impact of the Internet and technology turning "almost any space outside the classroom into an informal learning space" (p. 140), an entire chapter is devoted to discussing the evolution and future of libraries as informal learning spaces. Walton and Matthews (2016) edited a collection of essays devoted entirely to

informal learning spaces in universities, primarily from a facilities management and campus planning perspective which included references to libraries in every chapter.

The growing interest in libraries as informal learning spaces stems from the shift in the emphasis of librarianship from collections-centric to learner-centric and the evolution of campus pedagogies which increasingly emphasize active learning and group work (Bennett, 2006; Cox, 2017; Nitecki, 2011; Yoo-Lee, Lee, & Velez, 2013). The results of numerous studies on informal learning spaces in libraries provide a general understanding of the flexibility, amenities, support, ambiance, accoutrements, and technology students in the aggregate prefer when selecting spaces for study, as well as some notion of what students do in these spaces (Applegate, 2009; Beatty, 2016; Brown-Sica, 2012; Cha & Kim, 2015; Cox, 2017; Crook & Mitchell, 2012; DeClercq & Cranz, 2014; Foster, 2013; Foster & Gibbons, 2007; R. Fox & Doshi, 2013; Harrop & Turpin, 2013; Khoo, Rozaklis, Hall, & Kusunoki, 2016; McCullough & Calzonetti, 2017; Painter et al., 2013; Pepper, 2016; A. L. Steele, Haines, & Critchley, 2016; Tabur & Cunningham, 2012). Ojennus and Watts (2017) identified a consistent set of themes in the literature discussing recent library building projects: "technology, hours/access, study areas, aesthetics, and amenities" (p. 322).

An additional interest in informal learning spaces can be found within a limited body of scholarship looking to improve campus space planning on the whole (Boys, 2015; Boys & Hazlett, 2014; Boys et al., 2014; Painter et al., 2013). Driven by demands for accountability and improved efficiencies from government and the public, and with an interest in the process of learning, this emerging scholarship seeks to understand the

relationship between the built campus environment and student success (Boys, 2015; Jamieson, 2003, 2009; Jamieson et al., 2000; Temple, 2008).   Connecting physical library spaces to measures of student success is similarly called for throughout the scholarship on libraries (Bennett, 2005, 2006, 2007; Head, 2016; Nitecki, 2011; Webster, 2008, 2010)

Student success and informal learning spaces. Despite its agreed upon importance, research connecting campus spaces outside of the classroom, specifically informal learning spaces, to student success is extremely limited.

While not focusing exclusively on the use of physical spaces in libraries, Kuh and Gonyea (2003) used data from nineteen years of the College Student Experiences Questionnaire (CSEQ) to demonstrate that while "library experiences" did not appear to contribute directly to gains in information literacy and other desirable student outcomes, "the library appears to be a positive learning environment for all students, especially members of historically underrepresented groups" (p. 270). In this study, using the library to study or read, were just two components of an 8-item scale used to measure library experiences (Kuh & Gonyea, 2003). The researchers also included use of library collections and tools and information literacy-related items such as developing a bibliography or making a judgement about the quality of information in their scale (Kuh & Gonyea, 2003).

One study investigating campus facilities and another looking at student involvement experiences each surfaced student use of libraries for study space as important to the success of one racially minoritized student group. Flowers (2004)

investigated the extent to which student involvement experiences impacted educational

outcomes using the responses of nearly 8,000 African American students from 192

institutions to the CSEQ. This study revealed that the African American undergraduates

who reported "using the library as a quiet place to read or study" saw gains in four areas:

personal and social development; understanding science and technology; thinking and

writing; and vocational preparation (Flowers, 2004, p. 638). In a study to determine if

the use of certain campus facilities at the University of Maryland, including the library

and the student union, predicted retention, Mallinckrodt and Sedlacek (2009) found, "For

Black students, the only use of academic facilities that predicted retention was studying

in a campus library" (p. 569).

Bennett (2011) attempted to measure how different campus spaces foster learning

by administering a questionnaire which asked students and faculty at six institutions

whether specific spaces on their campuses supported important learning behaviors.

These learning behaviors were selected from the National Survey of Student Engagement

(NSSE) and reflect student behaviors which typically occur outside of the classroom,

such as "collaborative learning," "studying alone," "studying along," and "discussing

material with other students," (Bennett, 2011, p. 771). The specific campus spaces listed

on the questionnaire included "residence halls," "dining halls," "common spaces in

academic buildings," "libraries," "student union," "outdoor spaces," "computer

laboratories," and "information/learning commons" (Bennett, 2011, p. 777). Overall,

Bennett (2011) concluded that institutions "narrowly and unevenly" provided supportive

learning spaces beyond the classroom with one exception (p. 765). "Both student and

faculty respondents most frequently regarded libraries as fostering learning behaviors important to them" (Bennett, 2011, p. 776). Furthermore, "no other campus space comes even close to the library in the frequency of affirmative student responses" (Bennett, 2011, p. 776).

Matthews, Andrews, and Adams (2011) also used a student engagement framework (the Australian Survey on Student Engagement, an adaptation of NSSE) to examine the relationship between a specific informal learning space and student engagement after initial research revealed that students who used the Science Learning Center (SLC) at the University of Queensland reported higher levels of engagement in comparison to those who did not. The informal learning space in this study was not part of a library but similarly offered "a variety of comfortable furniture, wireless access, power points, whiteboards, meeting rooms with presentation capabilities and a small kitchenette" (Matthews et al., 2011, p. 108). Data from observations and interviews of more than 100 students who used the space was analyzed to determine how it impacted the student experience (Matthews et al., 2011). Although clearly used as a study space, the SLC was characterized by the researchers and participants as a "social learning space" where "serious studying" would not be appropriate (Matthews et al., 2011, pp. 111–112). Students commented about how this space increased their sense of community and togetherness (Matthews et al., 2011). The researchers concluded that informal learning spaces like the one they studied "can contribute to enhanced student engagement by fostering active learning, social interaction, and belonging" (Matthews et al., 2011, p. 105).

Montgomery (2014) reported using NSSE as the basis for a pre- and post- library survey on learning behaviors at one small colleges library with an intent to determine if student interactions, conversations, and collaborations changed as a result of study space renovations. The findings "showed that users' learning behaviors did not dramatically change in this space" but nevertheless, student use of that library increased 15% per month (Montgomery, 2014, p. 73).

Montgomery (2017) also edited a recent book on library space assessment includes three studies examining the relationship between specific library spaces and some aspect of student success. Lock, Webb, and Champlin (2017) reported on their study to determine whether undergraduate "use of library resources, spaces, and services correlates with greater self-efficacy in student-defined measures of success" (p. 88) at Wake Forest University. Not surprisingly, the researchers found that "when the library does not provide an easily navigable, flexible space for students with sufficient and appropriate seating, lighting, and electrical outlets, we fail at what they consider of primary importance" (Lock et al., 2017, p. 103).

In the same volume, Dodd and Lackeyram (2017) presented a case study from the University of Guelph that examined programming from their library which provides space and peer-mentoring services to student athletes. Measures of academic performance, participation rates, learning skills profiles, and student perceptions all indicated that "the library's state-of-the-art learning space and academic skill resources have transformed student-athlete learning" by creating an environment for them to study and access academic support (Dodd & Lackeyram, 2017, p. 119).

Finally, the book presents a case study which examines first-generation undergraduate students' experiences and perceptions of the main library at Oklahoma State University (Neurohr & Bailey, 2017). Ten undergraduate, frequent users of the main library who were the first in their family to attend college participated in in-depth interviews, as well as a photo-elicitation project and time-use diary (Neurohr & Bailey, 2017). Participants were diverse in race/ethnicity, age, year in school, gender, and major field of study (Neurohr & Bailey, 2017). The researchers found that the participants "perceive the library as a place of enduring academic knowledge that is signaled through the historic architecture and the grandeur of design, and support their academic success" (Neurohr & Bailey, 2017, p. 171). These frequent library users also reported finding a sense of community in their library spaces, telling the researchers that it can be "like a family- or friend-style support system" and that they perceive the library cares about their success because it provides the spaces with furnishings (study rooms) and resources (printing) they need (Neurohr & Bailey, 2017, p. 173). The researchers conclude that the library represented part of these students' sense of identity and belonging in a community of learners (Neurohr & Bailey, 2017).

Ambient sociality and scholarly gravitas. Across the research examining student preferences regarding informal learning spaces, the idea of library spaces as intentional spaces of study among others is repeatedly manifested. Crook and Mitchell (2012) characterized this as the "ambient sociality" of study space in a library and noted that it "seems particularly potent and under-theorised" (p. 136). A variety of studies report students appearing to be motivated to study and do academic work by merely

being among others with the same intent (Cox, 2017; Crook & Mitchell, 2012; Head & Eisenberg, 2011; Neurohr & Bailey, 2017). Head and Eisenberg (2011) reported that students valued the library as place because "they could witness other students engaged in 'hard work,' and this often was contagious for them" (p. 17). Cox (2017) emphasized not only the discipline afforded by seeing others engaging in similar tasks, but also the idea of being among friends.

This idea of studying among the presence of other students is often intertwined with the idea that specific campus spaces have specific purposes. This purpose is particularly salient for library spaces. Foster (2013) found that even when students in the library were not using library collections and resources, they wanted to study in the library because "they wanted to be in a place with the sort of scholarly gravitas that the library affords; they said it made them more serious" (p. 115). This holds true despite the omnipresence of the Internet and ubiquitous computing.

Research has demonstrated that student use of academic libraries as informal learning spaces has continued to grow, even though students no longer need to be physically in the library to access library content or even get help from librarians (Applegate, 2009; Fister, 2016). Cunningham and Walton (2016) asked students about their use of informal learning spaces inside and outside of the library on the main campus of Loughborough University. They found that students who used the informal learning spaces other than the library did so because of the convenience of their geographical location, but students who used the study spaces in the library saw it as "a destination of choice, despite a lack of proximity to their department/home" (Cunningham & Walton,

2016, p. 58). Students in multiple studies have expressed an appreciation of the scholarly nature of the library atmosphere (May & Swabey, 2015; Neurohr & Bailey, 2017).

This appreciation by students for the atmosphere of libraries may emanate from the historic image of libraries as symbolic repositories of scholarly knowledge (Jamieson, 2009; Tabur & Cunningham, 2012) and through the place attachment built by students as they navigate their educational experience and appropriate library spaces in connection with their academic success (Neurohr & Bailey, 2017). It also may be reinforced by the details of the built environments themselves. In a case study examination which focused on the material characteristics of a couple of small study spaces (furniture, spatial layout, color, etc.), Boys and Hazlett (2014) concluded that the type and quality of the built informal learning space can have an impact on engagement and belonging, in the sense that it tends to embody a certain atmosphere that suggests specific student behaviors or emotions. As discovered through their ethnographic study of libraries at the University of Maryland, Steele, Cronrath, Vicchio, and Foster (2015) nicely summarize the overall understanding of libraries as preferred informal learning spaces: "Students seek spaces that inspire them, stimulate their minds, and help them do their schoolwork through a combination of aesthetics, resources, and collegiality" (p. 34).

Unfortunately, with the exception of Neurohr and Bailey (2017) who exclusively studied first-generation students, each of these studies on students' preferences for and engagement in informal learning spaces were done without regard to student identity differences and without any detailed consideration of the broader ecological factors that may intersect with student identity. This is important because it means we can only

presume the results of these studies reflect the privileged majority student perspective.

Although Neurohr and Bailey's (2017) findings that first-generation students who

frequently use the library perceived it to be contributing to their academic success is a

good starting point for further inquiry, we cannot assume any of the other studies reflect

any minoritized student populations' experiences. Bennett's (2011) study especially,

approached student learning experiences outside of the classroom as the same for all

students, across multiple institutions, rather than something closely tied to individual

identity. One wonders, if we further investigated these informal learning spaces through

a lens of social identity, would the results hold? If we examine the notion scholarly

gravitas in libraries across student identities, would it be revealed as a luxury of the

privileged students, or some set of circumstances within libraries that all student

identities experience? What are the necessary components to create ambient sociality?

How might these components overlap with a students' sense of belonging?

Belonging

The notion of belonging ties back to psychologist Abraham Maslow's (1970)

hierarchy of human needs, where the bottom tier of need includes an individual's

physiological and safety needs, and once those needs are met, the next level up the

pyramid is belonging - being part of a community or in relationships with others.

Numerous frameworks have been used by scholars to study and explain the concept of

belonging for college students: Bollen and Hoyle's (1990) concept of perceived cohesion;

Tinto's (1993) model of integration; Hurtado and Carter's (1997) sense of student

belonging as part of a community; Nuñez's (2009) sense of belonging structural model;

Strayhorn's (2019) sense of belonging model; and most recently, a process of belonging model from Samura (2016c); and models of belonging for disabled students (Vaccaro, Daly-Cano, et al., 2015) and privileged and minoritized students (Vaccaro & Newman, 2016).

Strayhorn (2019) suggests seven core elements which provide a solid foundational definition. A sense of belonging:

- Is a universal, basic human need,

- Is a fundamental motive sufficient to drive behavior,

- Takes on a heightened importance in certain contexts, at certain times, and among certain populations,

- Is related to mattering,

- Is influenced by one's identities,

- Leads to positive outcomes and success, and

- Must be satisfied as conditions change (Strayhorn, 2019, pp. 29–40).

A large amount of research has linked college students' sense of belonging to a number of student success measures, including academic achievement, persistence, and engagement (J. Allen, Robbins, Casillas, & Oh, 2008; Freeman et al., 2007; Hausmann et al., 2007; Hoffman et al., 2002; Hurtado & Carter, 1997; D. R. Johnson et al., 2007; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006; Maramba & Museus, 2013; Strayhorn, 2019). Positive relationships with faculty and staff, support systems, friendships, involvement in extracurricular and co-curricular activities, and social acceptance have all been associated with improved sense of belonging (Freeman et al., 2007; Hausmann et al., 2007; Hurtado

& Carter, 1997; D. R. Johnson et al., 2007; Means & Pyne, 2017; Pittman & Richmond, 2008; Strayhorn, 2019). Research has also demonstrated that a lack of sense of belonging can negatively influence students (Strayhorn, 2019). Stephens, Fryberg, Markus, Johnson, and Covarrubias (2012) explained how the academic performance of minoritized college students is affected by their uncertainty regarding their fit in the university setting and how they experience "a chronic state of belonging uncertainty" in a PWI (pp. 1190-1191).

Research on belonging and racially minoritized students has consistently suggested that students from different social identity groups experience belonging differently and that minoritized students generally report a lower sense of belonging than their privileged peers (Hausmann et al., 2007; Hausmann, Ye, Schofield, & Woods, 2009; Hurtado & Carter, 1997; D. R. Johnson et al., 2007; Locks, Hurtado, Bowman, & Oseguera, 2008; Nuñez, 2009). Strayhorn (2008, 2019) found that Latinos and African American men report less of a sense of belonging at predominantly White institution than their White peers. Glass, Glass, and Lynch (2016) found that Asian-American students "reported less sense of belonging than their peers from all other racial groups" across a study of multiple institutions (p. 180).

Additionally, students' sense of belonging has been linked to socio-economic status (Langhout, Drake, & Rosselli, 2009; Means & Pyne, 2017; Ostrove & Long, 2007; Soria & Stebleton, 2013; Soria, Stebleton, & Huesman, 2013). Soria and Stebleton (2013) found not only did working class students feel less like they belonged than their middle- or upper-class peers, they also struggled to "develop relationships among staff,

faculty, and students" and these types of connections were important predictors of belonging and engagement (p. 148).

Glass and Westmont (2014) found that even though international students in their study reported more experiences with discrimination than their domestic student peers, these experiences exerted a smaller direct effect on the international students' sense of belonging than it did on the domestic students. The researchers concluded this may be due to within-group variation among the domestic student population - most likely students from underrepresented racial groups reporting discrimination having a direct effect on their sense of belonging (C. R. Glass & Westmont, 2014). Le, LaCast, and Wismer (2016) studied the sense of belonging in seven international female students from countries with relative restrictive roles for women. These women all reported a high sense of belonging to their institution in the middle of the United States and attributed it to feeling as if they could comfortably be themselves due to the progressive social norms of the American culture and feeling increasingly confident in their roles as students at the university (Le et al., 2016).

Perhaps the variance in the sense of belonging reported in these studies can be explained by Samura (2016c), who pointed out that earlier views of college student belonging, with the exception of Strayhorn, typically overlooked both "the fluidity and mutability of belonging," and "the role of students themselves in their processes of belonging" (p. 136). Samura (2016c) found that "belonging was not a state of being to attain; rather, it was a process that involved students remaking themselves, repositioning themselves, or remaking space to increase belonging" (p. 140). Accordingly, Samura

(2016c) suggests a model of belonging that is expressed as a process, where a student's sense of belonging is negotiated and iterative.

Similarly, Vaccarro and Newman (2016) examined the differences in the ways privileged and minoritized students make meaning of belonging and suggested that prior studies may have been flawed because sense of belonging was approached as if it were the same for all students. Their results indicated students' sense of belonging could be grouped into three themes: environmental perceptions, involvement, and relationships, but there were "vast differences in the ways students from privileged and minoritized social identity groups defined belonging and made meaning" within these themes (Vaccaro & Newman, 2016, p. 925). The minoritized students in this study included a variety of racial identities, as well as bi- and multi-racial students, LGB students, students with disabilities, and students with spiritual backgrounds other than Christian (Vaccaro & Newman, 2016). Concepts of safety, respect, and the ability to be one's authentic self, surfaced repeatedly for the minoritized students, yet ideas related to fun and friendliness dominated the narratives of the privileged students (Vaccaro & Newman, 2016).

Additionally, in a study of the sense of belonging of students with disabilities, Vaccaro, Daly-Cano, and Newman (2015) found that these students' understandings of belonging focused on relationship building, academic mastery, and self-advocacy skills in ways that closely aligned with their identity as disabled students. Vaccaro and Newman (2017) similarly studied sense of belonging in lesbian, gay, bisexual, pansexual, and queer (LGBPQ) first-year students at a mid-sized public research university and found that their sense of belonging was intricately tied to their LGBPQ identity, evolved over

time, and was multi-faceted, that is, students sought belonging at the university, group, and individual friend levels.

Students sense of belonging is also closely linked to campus climate (Hausmann et al., 2007; Hoffman et al., 2002; Hurtado & Carter, 1997; D. R. Johnson et al., 2007; Locks et al., 2008; Nuñez, 2009; Ostrove & Long, 2007; Stebleton et al., 2014; Strayhorn, 2019; Wells & Horn, 2015). Campus climate can be explained as being composed of a historical dimension (the historical practices of exclusion or in of groups of people), a compositional dimension (the number of people from minoritized populations), a psychological dimension (perceptions of hostility or tension), a behavioral dimension (the amount and nature of intergroup relations), and an organizational dimension (policies and practices) (Hurtado, Milem, Clayton-Pedersen, & Allen, 1998; Milem, Chang, & Antonio, 2005). In a 2012 review of the scholarship related to diversity and campus climate, Hurtado et al. (2012) found a strong relationship between compositional diversity and the psychological and behavioral dimensions of campus climate. Hurtado et al. (2012) also remarked:

> Most researchers are likely to regard sense of belonging as a proxy for a process of inclusion (or exclusion), and sometimes perhaps a proxy for the climate. Sense of belonging should continue to be studied as a mediating factor in retention, and as a separate construct from multiple dimensions of the climate. Changes in sense of belonging can be indicators of climate change, or more importantly, as features of campus subenvironments or "safe spaces" that foster community regardless of the overall campus climate for diversity. (p. 86)

Given the relationship between climate and belonging, and because of the limited amount of research investigating students' sense of belonging as it relates to specific campus spaces, it is useful to include here an examination of the scholarship on campus climate and specific campus spaces in this literature review.

Belonging, Campus Climate, and Campus Spaces

Research suggests that campus environments which are perceived by students culturally relevant and responsive to their own identities have a positive influence on sense of belonging and other student outcomes (Museus, Yi, & Saelua, 2016). However, with the exception of residence halls, specific campus spaces are rarely the focus of research on students' sense of belonging or perceptions of campus climate (Harwood et al., 2012; Hotchkins & Dancy, 2017; V. D. Johnson, 2003; Johnson-Durgans, 1994; Rodger & Johnson, 2005; Samura, 2016b; Spanierman et al., 2013). Only a few studies have specifically investigated the relationship between campus climate and specific campus spaces outside of the classroom and the residence halls (Garcia, 2017; V. Gutierrez et al., 2010; Lowe et al., 2013; Whitmire, 2004). That being said, certain campus spaces make repeat appearances in examinations of students' sense of belonging and students' perceptions of campus climate. These spaces include libraries, student unions, and dining halls.

In the results of a study by Solorzano, Ceja, and Yosso (2000) about racial microaggressions and campus climates at three universities, informal learning spaces are mentioned in a relation to both positive and negative experiences. First, one student is quoted,

Last time we went to the library ... to study ... obviously, it's finals time ... people

are going to study. But when we walked in there looking for somewhere to sit

down, it's like ... they've never seen Black people before in their lives, or they've

never seen Black people study before! (Solorzano et al., 2000, p. 68)

The researchers emphasized how this led minoritized students to feel as if "their very

presence in non-classroom campus settings was unwanted and assumed to be

inappropriate" (Solorzano et al., 2000, p. 68). Additional statements by participants led

the researchers to conclude that minoritized students created their own spaces to foster

learning (Solorzano et al., 2000). Another student is quoted saying, in part,

Even in terms of academics, I go study with the "homies" all the time. Go to [a

certain student lounge] and you're going to see a million African American faces,

and it's going to be cool.... You might not get that much studying done, but it's a

cool little network that's created because classes are so uncomfortable.

(Solorzano et al., 2000, p. 71)

The library quote from the Solorzano et al. (2000) study inspired Whitmire (2004)

to specifically investigate the relationship between the academic library and the campus

racial climate at one PWI. She surveyed over 1100 undergraduates attending a

predominantly White Midwestern research institution and found that students of color at

that institution did not observe a significant relationship between the campus racial

climate and the academic library (Whitmire, 2004).

V. Gutierrez, et al. (2010) used focus groups of students from racial and ethnic

minoritized populations to better understand the relationship between specific campus

spaces and student experiences of racial microaggressions. The findings touched on a variety of campus spaces, including the student union, which was characterized by some participants as "White space" due to the union's study space being dominated by portraits of top administers through history - all White people (V. Gutierrez et al., 2010). Another informal learning space in this study was also associated with microaggressions. The campus quad, a space surrounded by buildings named after White men which was popular in good weather with White students, but which, to the students of color, "represented a space of physical tension where they feel ignored and sometimes even mistreated" (V. Gutierrez et al., 2010, p. 21). Additionally, the researchers noted that participants in this study reported being part of a supportive network of students who shared information about the spaces and places on campus where each other might avoid "subtle or overt racial minefields" (V. Gutierrez et al., 2010, p. 27). Places where students of color were advised to "hang out" included the libraries and the cultural houses (V. Gutierrez et al., 2010, p. 28).

Similarly, Vaccaro, Daly-Cano, and Newman (2015) found that for students with disabilities in their study, sense of belonging was tied to their ability to integrate into typical collegiate spaces like libraries. For example, one participant "explained how she felt a sense of belonging when she studied in the library or at a coffee shop and knew that the other people around her were studying too" (Vaccaro et al., 2015, p. 679). In research on mixed race students' perceptions of campus climate at a PWI, Sturm (2016) found the library mentioned by multiple participants as both a place where they felt they could seek out diversity and a place that was important to their well-being.

Campus dining halls have also surfaced as campus spaces that may play a contradictory role in students' perception of the campus climate. Harper and Hurtado (2007) explored racial climates in a study across five PWIs, conducting focus groups with 278 students of varying racial and ethnic backgrounds. One of the themes which emerged related to the prevalence of self-segregated spaces, where the dining hall was noted by the researchers as a prime example (Harper & Hurtado, 2007). Vaccaro (2012) investigated the campus climate for LGBT faculty, staff, and students and found that perception of the climate was related to one's role on campus. The undergraduate participants in this study reported marginalizing attitudes and behaviors in a variety of campus settings, including a microaggression incident in the dining hall against an LGBT student (Vaccaro, 2012). On the other hand, Lowe et al. (2013) explored factors which influenced undergraduates' perceptions of the racial climate at a PWI and found that frequent interracial dining in the residence hall cafeteria helped to create positive campus racial climate perceptions, even more than interracial interactions in the classroom or residence hall.

Garcia (2017) studied belonging among Latinx students and their involvement in ethnic fraternities and sororities at a PWI. The findings demonstrated that all participants encountered specific campus settings in which they felt they belonged, for example a specific place within the library, as well as settings in which they felt they did not belong (Garcia, 2017). Perhaps more importantly, membership in their subculture, the Latinx fraternities and sororities, was closely tied to this sense of belonging in a variety of spaces around campus (Garcia, 2017). Garcia (2017) explains,

For instance, the members of Kappa Beta all felt a sense of belonging in what they called "Selena's spot" in the library. They associated this space with their sisters and felt that it was a place that felt safe and comfortable. However several commented that if their sisters were not there they would choose to study at their home or elsewhere. In this regard, the place was primarily important because of the people within it. (p. 303)

In summary, sense of belonging relates to campus climate, impacts student success, has different meanings to different students, and appears to be closely related to identity for minoritized students. Furthermore, some minoritized students will seek out and create spaces where they feel they belong (Hurtado et al., 2012; Linley, 2017; Nuñez, 2011; Samura, 2016a; Solorzano et al., 2000; Sulé, 2016; Vaccaro & Camba-Kelsay, 2016; Yosso & Lopez, 2010). These spaces are of particular interest to the study at hand and are examined in the next section.

Counterspaces

One of the repeated themes appearing in the literature related to campus spaces, belonging, and climate is the role of sub-spaces in the life of the student – referred to as subenvironments (Hurtado et al., 2012), microclimates (Vaccaro, 2012), ethnic enclaves (Lozano, 2010) or subcultures (Garcia, 2017). Sometimes, these are spaces described as hostile (Garcia, 2017). However, the literature also described many cases where minoritized students found or created spaces that bolstered their sense of belonging (Hurtado et al., 2012; Samura, 2016a; Stebleton & Aleixo, 2016). These are often

referred to as "counterspaces," where students seek refuge and relief from the daily stressors of being other (Linley, 2017; Solorzano et al., 2000; Yosso & Lopez, 2010).

In many cases, campus cultural or identity centers are singled out as the (sometime only) space on campus where minoritized students reported being able to be comfortable in their authentic self. In their study, Harper and Hurtado (2007) reported, "Beyond ethnic and multicultural centers on the five campuses, Asian American, Black, Latino, and Native American students found it difficult to identify other spaces on campus in which they felt shared cultural ownership" (p. 18). Students reported that despite institutional claims of inclusiveness, their identity was isolated in a single cultural center, office, or academic major and that activities and class readings were nearly all centered on Whiteness (Harper & Hurtado, 2007). Campus cultural centers have long served minortized students' as safe havens on predominately White campuses (L. D. Patton, 2010). A number of studies on students' sense of belonging highlighted the importance of campus identity-based centers (Garcia, 2017; Linley, 2017; Lozano, 2010; Means & Pyne, 2017; Stebleton & Aleixo, 2016; Yosso & Lopez, 2010). However, a few campus spaces in addition to the cultural centers have been reported to potentially offer similar respite and promotion of sense of belonging for minoritized students, including social-identity focused organizations such as cultural-based fraternities and sororities (Garcia, 2017; V. Gutierrez et al., 2010). Of particular interest to the study at hand is research that mentions study groups and libraries as counterspaces (Linley, 2017; Whitmire, 2004).

Solorzano et al. (2000) found African-American students established counterspaces within race-related organizations, African-American fraternities and sororities, and African-American student-organized academic study halls. Whitmire (2004) found that academic libraries could be a racially neutral space for students of color and commented, "Perhaps students of color do not view the academic library as a race-related space" (Whitmire, 2004, p. 374). In a later study of African American undergraduates' use of the library, Whitmire (2006) observed,

> One unanticipated finding came from one research assistant who observed that generally when African Americans undergraduates visited the library with non-African Americans; it appeared to be for academic purposes, such as meeting a study group or a study partner. When African American undergraduates were observed with other African American undergraduates, it appeared to be for companionship while studying with their own materials. (p. 65)

This finding perhaps reflects the previously mentioned research on student behaviors that demonstrated student preferences for studying in libraries because of the perceived ambient sociality (Cox, 2017). However, it is unclear whether the participants in Whitmire's (2006) study perceive that sociality about the library in general, separate from being there with friends from their identity group.

Yosso, Smith, Ceja, and Solórzano (2009) explored how Latina/o students experienced and responded to racial microaggressions at three selective universities. These minoritized students, as well as the Chicana/o students represented in early research by Yosso (2006), built supportive communities to navigate everyday

microaggressions through study groups and student-organized study halls (Yosso et al., 2009). The researchers found the minoritized students felt their intelligence had been questioned simply because of their race (Yosso et al., 2009). In response, especially with a lack of faculty and staff reflecting their ethnicity, the students created "academic counterspaces," through study groups and student-organized study halls.

> In academic counterspaces, students can struggle through a math problem or brainstorm about a literary essay without the additional pressure of being "on display" as the spokesperson for all Latinas/os. Building community here also means fostering each other's academic achievements and being accountable to help each other graduate. (Yosso et al., 2009, p. 677)

Similarly, in a qualitative examination of the value of LGBT centers on three campuses, Damschroder (2015) reports some students "found community in a gathering space adjacent to the Center. 'It's a quiet, nice space where, for the most part, queer people come to hang out at night and work on homework, or talk and not work on homework'" remarked one participant (Damschroder, 2015, p. 157).

In this research, microclimates, subenvironments, subcultures, or counterspaces are typically only loosely associated with a physical built environment and researchers certainly emphasized the role of the group and human interactions within these spaces. However, it can be difficult to differentiate the human aggregate environment from the physical environment (Strange & Banning, 2015). In these studies, the role of the physical environment is overlooked or assumed unimpactful. Can a counterpace be created anywhere students manage to come together with agency and feel at home in their

authentic selves? If so, in what ways can colleges and universities facilitate this creation

of spaces for belonging? In what ways do existing informal learning spaces on PWIs

promote or inhibit such coming together?

Theoretical Framework

This study relies on the ecological model of human development as applied to

college students. Using this model for examining student experiences in specific campus

spaces provides a framework which encourages a holistic investigation of the setting and

the environment, as well as the student, and the dynamic interrelationships between all

(Chun & Evans, 2016; Strange & Banning, 2015).

Ecological model. Psychologist Bronfenbrenner's (1979) ecological model of

human development focuses on person-environment interactions and outlines a

developmental process of continual adaptation. The model consists of four main

components and their interactions: process, person, context, and time (Evans, Forney,

Guido, Patton, & Renn, 2010, p. 161).

> The ecology of human development involves the scientific study of the
>
> progressive, mutual accommodation between an active, growing human being and
>
> the changing properties of the immediate settings in which the developing person
>
> lives, as this process is affected by relations between these settings, and by the
>
> larger context in which the settings are embedded. (Bronfenbrenner, 1979, p. 21)

The visualization of the model reflects the individual within various concentric systems

of his or her environment from the closest or smallest (the microsystem) through

progressively larger encompassing systems – mesosystem, exosystem, and macrosystem

(Bronfenbrenner, 1979). Later, time was added as an aspect of the macrosystem and is sometimes referred to as the chronosystem (Bronfenbrenner & Morris, 2006; Renn & Arnold, 2003).

Renn (2000) first applied Bronfenbrenner's (1979) model to the college student environment to understand the complexities of multiracial college student' identity development. This application of the model to the college environment is most helpful. Microsystems in the college student environment include immediate settings and individual roles, for example, students' classes, jobs, friends, and roommates (Renn & Arnold, 2003). The mesosystem acknowledges that microsystems are not independent and free from the influence of each other. The mesosystem encompasses the interactions and interrelations between the various microsystems in a student's world (Chun & Evans, 2016; Renn & Arnold, 2003). For example, parental influences on a student's selection of a friends group is an example of this interrelationship between the mesosystem and microsystems (Bronfenbrenner & Morris, 2006). The exosystem for a college student includes institutional policy, curriculum committees, aspects of any state or federal policy that might influence a student or their environment, such as financial aid and immigration policy, and even parents' workplaces (Renn & Arnold, 2003). Lastly, the macrosystem includes ideological influences on the student's environment and cultural understandings, including those related to minoritized campus populations (Renn & Arnold, 2003). "The macrosystem provides the structure and content of the inner systems and is specific to a given culture at a given moment in history. It is time and place dependent" (Renn & Arnold, 2003, p. 272). Examination of the college student environment through the

application of these system components provides a structure for interrogation of physical surroundings and the human interactions while accounting for an individual's unique place in the world.

Minoritized students and the ecological model. A number of scholars have followed the lead of Renn and Arnold (2003) in using Bronfenbrenner's (1979) model to both further develop theory or advocate for an ecological lens when studying minoritized student populations and/or diversity-related student outcomes.

Stebleton (2011) argued for the use of Bronfenbrenner's (1979) model, as applied by Renn and Arnold (2003), to better understand immigrant student populations and improve student advising. Outlining the many ways the model can shed light on immigrant students' experiences, the researcher explains, "Academic advisors can utilize the ecological framework as a lens to view the needs and issues of immigrant college students; its merit lies in the ability it gives one to explore interactions and processes rather than to explain outcomes" (Stebleton, 2011, p. 49).

In their attempt "to develop a more holistic model accounting for climate, educational practices, and student outcomes," Hurtado et al., (2012, p. 42) offer the multicontextual model for diverse learning environments, which relies heavily on the ecological model. This complex model touches on social identity development, as well as students sense of belonging in the curricular and co-curricular contexts (Hurtado et al., 2012). Unfortunately, there is not a place in this model for the student experience outside of the classroom and outside of a rather rigid description of the co-curricular context presented here:

Much of what students learn in college also occurs outside of the classroom, in campus-facilitated programs and activities made possible by cocurricular programming. The cocurricular aspect of the collegiate environment is equally important in advancing the education of students, affecting student development, and creating a positive climate on campus . . . Similar to the components within a classroom setting, the cocurricular aspect of a college campus mirrors the interaction of staff identities with student identities, programming for design of content, and practices centered on student development. (Hurtado et al., 2012, pp. 80–81)

There is a significant component of student academic life left unaccounted beyond the "campus-facilitated programs and activities made possible by cocurricular programming." The academically oriented student experience not captured by this model is the study-life of the student. This component of the student's academic experience is not captured through cocurricular programming. There may be opportunities for institutions to improve environments and practices within this area of student life, especially on residential campuses, but first we must know more about it.

Others have also built theory on Bronfenbrenner's (1979, 1993) models. Relying heavily on Hurtado et al.'s (2012) multicontextual model for diverse learning environments and the student ecological development model as presented by Renn and Arnold (2003), Chun and Evans (2016) advocate for rethinking the value of and approach to diversity competencies in higher education. Vaccaro, Russell, and Koob (2015) used campus climate models, Bronfenbrenner's (1993) bioecological development model, and

empirical literature about college students to articulate a model of student development for minoritized identities of sexuality and gender. They advocated for this model to be used by educators in various postsecondary institutional contexts to understand and support students with these identities (Vaccaro, Russell, et al., 2015). Allen, Vella-Brodrick, and Waters (2016) developed a socio-ecological framework based on Bronfenbrenner's (1979) work and argued for its application in primary and secondary schools to promote students' sense of belonging. Through a review of the literature, they identified a variety of microsystem and mesosystem practices associate with the promotion of school belonging (Allen et al., 2016).

Recently, studies have emerged using the ecological model as a frame for quantitative analysis of LGBQ and LGBTQ students' perception of campus climate (Garvey et al., 2017; Hong et al., 2016). More frequently, scholars have used Bronfenbrenner's model (1979, 1993) as a framework to make meaning of their qualitative research on sense of belonging in students who identify with minoritized populations, including African students (Stebleton & Aleixo, 2016), Latinx students' (Garcia, 2017), and LGBTQ undergraduates (Vaccaro & Newman, 2017). Finally, Cabrera, Watson, and Franklin (2016) used the ecological model in a critical Whiteness analyses of the literature on inclusion and safety. The researchers more fully explored this in their arguments regarding the impact of Whiteness on students of color at PWIs (Cabrera et al., 2017).

Conclusion

The human ecological model in the study of student development offers "a way to look inside the interactions between individuals and their environments to see how and why outcomes may occur as they do" (Evans et al., 2010, p. 161). As evidenced by the growing application of the model to improve understandings of campus environments for minoritized students, this model of college student development is well suited to the research questions posed in this study. These questions seek to understand the interactions between student microsystems within the specific built environments students select for study space. How does students' sense of belonging intersect with these specific spaces and experiences, that is, in these microsystems? Which microsystems are salient in student selection of an informal learning space and why? What role do students' identities play in the mesosystem surrounding informal leaning space experiences?

Chapter 3: Methodology

Purpose

The purpose of this study was to explore a diverse group of undergraduates' experiences in informal learning spaces on a residential, predominantly White, Midwestern university campus in order to better understand how these microsystems promote or impede students' sense of belonging.

The research questions were:

1. How do students' experiences in informal learning spaces relate to their sense of belonging?

2. How does social identity shape students' experiences in informal learning spaces?

3. How do the ecologies of informal learning spaces relate to students' sense of belonging?

These research questions lend themselves to qualitative research because they seek to explore the lived experiences of real people in actual settings and to understand how individuals make sense of their everyday lives (Hatch, 2002). Qualitative research examines real-life, in-progress, contemporary settings to gather accurate and in-depth understandings (Creswell, 2013; Merriam & Tisdell, 2016). Qualitative research seeks to understand the world from the perspectives of those living in it and with this comes the assumption that "individuals act on the world based not on some supposed objective reality but on their perceptions of the realities that surround them" (Hatch, 2002, p. 7). These research questions guided an exploration of undergraduate students' perceptions of

specific environments on campus and their connection to the students' sense of belonging.

Researcher Positionality

Acknowledging and making transparent my position in this study was paramount to understanding my interpretation and analysis. Creswell (2013) states that researcher reflexivity should include two parts – an explanation of the researchers' experiences with the phenomenon being studied and a discussion of how these past experiences shape the researcher's interpretations. My interest in the topic of this study came from more than two decades of professional experience in higher education, specifically in academic libraries. I have worked in three academic libraries, all of which are part of large, predominantly White universities in the Midwestern United States. In these settings, I have witnessed a general expansion of informal learning spaces across campuses, as well as an increasing interest by both librarians and academic space planners in understanding the impact of these spaces on students. I have participated in projects to design study spaces in libraries and attended professional development workshops and conferences specifically about creating library spaces for students. I have informally gathered information from students about their preferences regarding study spaces in libraries through observation and discussion. I have also been responsible for creating policy related to study spaces, as well as enforcing and training other librarians on enforcing policy.

Recently, through coursework, readings, and exposure to a variety of academically-oriented diversity initiatives, I became more aware of the burdens some

campus diversity initiatives have on minoritized populations, as well as their limited effects improving student success, changing institutional culture, or attracting and retaining minoritized faculty and staff. As a participant in the larger national conversation about the value of diversity, and as a White woman, I also felt a new compelling interest to identify how I could make a personal contribution to improving the campus environment for all student populations, but specifically for minoritized populations. I believe academic librarians often have a unique perspective on student life. With some exceptions, librarian-student encounters almost exclusively revolve around academic struggle, often high-stakes (from the student perspective). These are typically difficult assignments for which the students are seeking assistance, or during high-stress exam time where library spaces are filled to the brim with anxious and exhausted students. While socializing is certainly an aspect of study time, librarians do not typically see a lot of the social world of the student, nor are we privy to their classroom world or the extended contact they have with instructors there. Libraries are part of their world in between class and the social life. It seems reasonable that this part could be important to their academic success, yet we know so little about any influence anybody or any space might have on this part of their development. It seemed this was a rather obvious gap to investigate, given my expertise.

While my experiences certainly shape my personal biases, they also gave me an expertise that facilitates the investigation of these research questions. I also realized that my own experience is not the experiences of others. As a critical researcher, I reflected carefully, purposefully, and regularly on how my experiences manifest not only within

the research setting but also in my interactions with participants. Reflexivity on my part was required in order to "be attentive to and conscious of the cultural, political, social, linguistic, and ideological origins" of my perspective and voice and the perspective and voice of the participants of this study (M. Q. Patton, 2002, p. 65).

Epistemological Perspective

I approached this research with a critical constructivist paradigm. Under a constructivist paradigm, I studied "the multiple realities constructed by people and the implications of those constructions for their lives and interactions with others" (M. Q. Patton, 2002, p. 96). This perspective presumes that all of human knowledge and understanding is "contextually embedded, interpersonally forged, and necessarily limited" (Neimeyer, 1993, p. 1).

Constructivism is particularly well-suited to the application of Bronfenbrenner's (Bronfenbrenner, 1979, 1993, 2005) theory of ecological development. Based in ecological systems theory, the ecological model holds that one cannot make meaningful understanding of human development without examining the many contextual influences on the person, as well as their interactions with each other (Bronfenbrenner, 2005). Constructivism holds that knowledge emerges "from a dialectical relationship between the knower (subject) and the known (object)" (Kincheloe, 2008, p. 42). Through this paradigm, I examined the experiences of students, many of whom identify with a minoritized population, and aspired to present the experiences and perceptions of these students in a way that can provide new insights or opportunities for improvements in higher education.

Adding a critical component to the constructivist paradigm allowed me to give weight to the perspectives of the students who identify with minoritized populations and acknowledged the dominance of the privileged within the traditional collegiate culture. A critical orientation refers to an ideology that values the lived experiences of persons and holds power relations, inequities, and social justice as central concerns (Lather, 1992; Martínez-Alemán, Pusser, & Bensimon, 2015). Critical constructivism is interested in the process through which information becomes validated knowledge or is discarded as not worthy and the exaggerated role power plays in this process (Kincheloe, 2008). Through this lens, this study attempted to identify ways in which dominant cultural norms in traditional higher education institutions are at play within the seemingly innocuous spaces used by students every day, ways in which certain spaces mitigate or accentuate those norms, and the ways students navigate their own belonging within those spaces.

Research Design

This basic qualitative research used multiple sources of evidence to examine the real-life experiences of students in informal learning spaces and the meaning they make of those experiences (Merriam & Tisdell, 2016).

Institution selection. The selected campus was a place in which the researcher had convenient and ongoing access to undergraduates and their study spaces. This also allowed for easy access to information in support of understanding the broader institutional environment. Given the importance of context to the ecological model, selecting a single institution allowed me to interpret data within a local campus

environment and to scope my findings within this limitation. The study site was the main campus of a large, predominantly White, Midwestern research university with an enrollment of approximately 20,000 students. Nearly 18,000 of these students were undergraduates; close to 79% were Caucasian; 51% were female; just over 5% were international students (500 undergraduates and 800 graduate students); less than 6% were African-American, 3% Hispanic, and 3.5 % identified with two or more races. Approximately one-third of each of the recently entering first-year classes were labeled as first-generation college students, that is, neither parent had completed a bachelor's degree. Almost 60% of campus undergraduates were eligible for some type of financial aid, with nearly 30% eligible for a Pell grant. First and second year undergraduates were required to live on campus unless living with parents within a 50-mile commute.

Participants. Enrolled undergraduate students who had attended the main campus at this institution for at least two semesters served as the unit of analysis. After Institutional Review Board approval (Appendix A), participants were recruited through email and purposeful sampling was used to explore different social identities, perspectives, and experiences. An email (Appendix B) was sent to all undergraduates enrolled on this campus at the time (n=17,167). This email included an explanation of the purpose of the study and a link to a survey that gathered demographic information and included an initial inquiry regarding the student's choices for study space, as well as an informed consent statement (Appendices C and D).

Four hundred and thirty-nine students completed the survey. Of these respondents, 234 students indicated that had or maybe had felt like they did not belong in

a place where they were studying. These 234 survey responses were reviewed in detail to identify students to invite to participate in interviews. Looking for representation from a variety of social identities, perspectives, and experiences, I paid particular attention to their responses to the survey prompt, "please tell me about this place and why you felt like you did not belong," as well as their descriptions of their own identities. Students who replied that they had experienced a belonging problem in a study space with an explanation that was deeper than, "too crowded" or "too noisy," and whom also indicated a minoritized identity were contacted to invite to participate in an interview. Fifty-four students were invited to schedule an interview. Thirty-one students replied that they would be willing to participate in the interviews. A variety of interview times, including evenings and weekends, as well as a variety of interview locations were offered to potential participants.

All 31 students scheduled and completed an in-person interview between October 5 and November 9, 2018. Participants were compensated for their time and sharing their experiences with an Amazon gift card worth $20. The financial compensation was intended as an incentive to participate as well as an acknowledgement of the value of participants' time and willingness to share their experiences and perceptions (M. Q. Patton, 2002). Offering the financial incentive and as much participant control as possible on the timing and location of the interviews was intended to maximize the convenience of participating.

Data collection. The primary data collection method for this study was in-depth, semi-structured interviews, as is appropriate for basic qualitative research using a critical

constructivist approach attempting to understand the lived experiences and meaning-making of people in relation to power structures (Kincheloe, 2008). Additional data was collected through a preliminary survey and in a review of documents and artifacts related to the informal learning spaces identified by the participants. The survey was used to gather basic information as well as to identify potential participants for the interviews. The documents and artifacts were used to triangulate data gathered through the interview process.

Preliminary survey. A survey (Appendix C) was initially used to collect information from participants regarding basic demographic information (age, year of study, major, etc.), social identity, and choices for campus study spaces. In an effort to identify participants with experiences particularly useful to the research questions posed by this study, the survey also asked students how many hours a week they typically studied, if they have ever felt as if they did not belong in any particular study space on campus, as well as why they choose the study spaces they do. Answers to these questions informed the selection of individuals invited to participate in the in-depth interviews. This approach of maximum variation sampling, "increases the likelihood that the findings will reflect differences or different perspectives – an ideal in qualitative research" and is particularly well suited to help fully describe multiple perspectives within this study (Creswell, 2013, p. 157). Data gathered through this survey was linked with participant interview transcripts through the use of the participant-selected pseudonym.

Documents and artifacts. I investigated spaces revealed through the interview process to identify any potentially relevant documentation such as posted or publicized

rules or regulations, policy statements about behaviors and uses of spaces, and/or historical documentation or news items that may be related to the experiences or perceptions of the participants. These documents were captured and logged with appropriate metadata, e.g. location, time, context, etc. I also investigated these spaces for potentially related and relevant artifacts, including art, decorations, graffiti, signage, or other visual or architectural elements that may convey the history, purpose, or expectations of the space. Metadata and captured images from all documents and artifacts related to specific spaces were kept in a spreadsheet.

While the interviews identified a few specific informal learning spaces on campus perceived as unwelcoming by multiple participants, students never expressed any specific physical aspect of the space as contributing to those negative experiences. Nevertheless, I examined these spaces, took photographs, and captured posted rules and regulations. Figure two is an example of an artifact relating to a specific space in the campus library. It is a photograph of a third floor study space. In it, you can see the density of tables and chairs and the students within the space, as well as the stop light signage that indicates appropriate noise levels.

Figure 2. Photographic artifact. Students studying in a third floor study space of the academic library.

Interviews. The primary source of data for this study was through in-depth, semi-structured interviews with individual undergraduate students. Semi-structured interviews are somewhat open-ended and acknowledge that individuals define the world in unique ways and that those personal definitions are worth understanding through their own words (Merriam & Tisdell, 2016). Students identified through the survey responses to represent a variety of social identities, perspectives, and experiences were invited to participate in an interview.

The interview guide (Appendix E) includes questions about students' preferences for study spaces, their study habits, and their experiences "fitting-in" in general on

campus, as well as their sense of belonging outside of the classroom when participating in academic work. For example, I not only asked, "Do you believe this campus is inclusive and tries to make it so that everyone has a place," but I also asked, "Is feeling like you belong more important in the classroom or in your study space?" I asked about their experiences in specific informal learning spaces, as indicated by the preliminary survey responses. I also probed salient student microsystems related to their academic work outside the classroom, such as experiences with study groups. All interviews were recorded and transcribed. As recommended by many methodologists, I made notations and memos of my preliminary interpretations, as well as my immediate thoughts regarding my positionality in relation to the participants, during and immediately following each interview (Creswell, 2013; Merriam & Tisdell, 2016). I also sent a copy of the transcription of their interview to each of the participants and invited their feedback and corrections.

It was particularly important for me to try to establish a relationship of reciprocity with the interview participants so that they felt open to sharing their experiences with me, even though these may highlight unpleasant emotions or difficult experiences (Creswell, 2013). I attempted this by practicing good interview skills, such as active listening, as well as demonstrating respect for their time, cooperation, and privacy (Creswell, 2013). Participants' identities were masked by using pseudonyms of their own choosing.

Data Analysis

Analysis of data began simultaneously with the collection of the data, and continued recursively and dynamically, after data collection was complete, as is

appropriate and recommended for qualitative research (Creswell, 2013; Merriam &

Tisdell, 2016). Direct interpretation of the data allowed me pull it apart and present it in

a more meaningful way through my analysis (Creswell, 2013). Through multiple

readings and coding of the data, I look for recurring regularities, patterns, and

relationships in the data that may allow for categorization or illumination of themes

related to my research questions (Merriam & Tisdell, 2016). I paid particular attention to

the role played by components of the environment, including the physical, organizational,

and social (Strange & Banning, 2015), as well as aspects of student microsystems and

macrosystems as described by Bronfenbrenner (1993) – the physical, social, and

symbolic.

My analysis of the data involved using nVivo Pro to facilitate multiple cycles of

coding of the data from the surveys and the interview transcripts. The first cycle of

coding included attribute coding and in vivo coding, as a generic approach for a novice

qualitative researcher (Saldaña, 2016). Attribute coding "is appropriate for virtually all

qualitative studies," (Saldaña, 2016, p. 83) and consisted of logging the essential

information from the survey, as well as other key participant attributes captured during

the interview, such as year of study, change of major, and whether the student was a

transfer student. In vivo coding "refers to a word or short phrase from the actual

language found in the qualitative data record" (Saldaña, 2016, p. 105). Like attribute

coding, in vivo coding is also appropriate for nearly all qualitative studies, but also

Saldaña (2016) asserts that it is particularly well-suited for "beginning qualitative

researchers learning how to code data, and studies that prioritize and honor the participant's voice," (p. 106).

Next, I performed a cycle of coding using the eclectic coding method, as described by Saldaña (2016). This method of coding is similar to open coding and is "appropriate as an initial, exploratory technique with qualitative data," (Saldaña, 2016, p. 213). This method synthesizes the previous codes using a variety of methods to help categorize concepts compactly for further analysis. Table one offers a code map representing the various iterations of the coding for the first research question in this study.

Table 1

Code Map for Research Question 1

Research Question 1: How do students' experiences in informal learning spaces relate to their sense of belonging		
Final Themes		
Peer Anxiety	Peer Motivation	Peers & Space Exploration
Second Iteration: Groupings and Patterns		
being judged	social inspiration	need guidance
judging others	fear motivation	stay in my room
First Iteration: Initial Codes		
weirdo	slacker	don't know what it is for
loner	not smart enough	Am I allowed?
don't know the rules	competition	friends
studying wrong	studying mind-set	stick to what I know
disturbing others	social ambiance	someone showed me
in my head	we're in this together	convenience
		I found this!
		signs/directories

While a constructivist orientation required me to be open to the multiple realities constructed by and with my participants and to the idea that each of their realities is embedded within their own unique contexts and persons, I strove to make sense of participants' experiences in a way that elicits how person-environment interaction can inhibit or facilitate a student's sense of belonging. Furthermore, as I attempted to identify ways in which dominant norms are at play within everyday study spaces, in my analysis, I looked carefully for intersections of themes related to social identity, specific spaces, and belonging. As the literature has suggested, I looked for similarities and differences across identities in the experiences recounted by participants regarding personal encounters with others across differences in social identity (K. M. Goodman & Bowman, 2014), as well as environmental and climate factors which highlight identity differences within the higher education ecological system (Strange & Banning, 2015). The latter includes aspects of campus climate dimensions outlined by Hurtado, Milem, Clayton-Pedersen, and Allen (1998) and Milem, Chang, and Antonio (2005), including environmental microaggressions such as racist graffiti and perceptions of compositional diversity (the perceived numbers of minoritized populations within the institution). Finally, experiences within the predominantly White campus ecology also included how students interpret organizational practices and institutional policies that can be perceived as favoring the habits and culture of privileged students or dismissing or ignoring the culture and practices of minoritized populations (Barajas & Ronnkvist, 2007).

Trustworthiness

Trustworthiness in qualitative research refers to the extent to which the results presented by the researcher are valuable given that, unlike quantitative results, they are inherently not replicable. In qualitative research, results and data interpretations are valid when the researcher establishes credibility, transferability, dependability, and confirmability (Merriam & Tisdell, 2016). Merriam and Tisdell (2016) also maintained that qualitative researchers can use a variety of strategies to increase the credibility of their research, including triangulation and member-checking. Anfara, Brown, and Mangione (2002) centered the trustworthiness of qualitative research on the idea of transparency in the researcher's analytical thought process. They advocated demonstrating rigor in the qualitative process by demonstrating the relationship between interview questions and research questions, as well as by sharing the data analysis process through documentation like code maps (Anfara et al., 2002).

This study employed triangulation, making use of multiple and different sources of evidence to shed light on the questions at hand and illuminate findings across the data: survey data, interviews, and documents and artifacts (Anfara et al., 2002; Creswell, 2013; Merriam & Tisdell, 2016). As the interviews were the primary source of data collection, Appendix C maps the interview questions to the research questions as suggested by Anfara et al. (2002). I shared my findings with all of the participants and invited their review and feedback. I attempt reflexivity throughout this study and sought to clarify the bias I bring to the position of researcher in this study, both to the reader when presenting the findings, as well as to the participants when collecting data (Creswell, 2013). Finally,

this research also employs thick, rich description of the participants and the settings within this study, which is another method employed to offer evidence of the study's rigor and validity (Merriam & Tisdell, 2016). Through these strategies, the trustworthiness of myself as the researcher and the findings of this research can be evaluated.

Conclusion

This qualitative study uses a critical constructivist epistemological perspective to examine the experiences of undergraduates in relation to informal learning spaces on campus. The design of this study employs typical qualitative methods including collecting data from a survey, an interview, and documents and artifacts. Analysis of the data was iterative and occurred during and after the data collection process. Trustworthiness of the study can be revealed through the methods employed in the data collection, analyses, and presentation of results and includes triangulation of data, transparency in analysis, researcher reflexivity, and thick, rich description of participants and settings in the presentation of findings.

Chapter 4: Findings

In this chapter, I describe the findings of this basic qualitative research study that explored a diverse group of undergraduates' experiences in informal learning spaces on a residential, predominantly White, Midwestern university campus. Through this research, I sought to better understand how these microsystems promote or impede students' sense of belonging. The findings presented here include basic information about all of the individual participants in the study, physical descriptions of the spaces that played a prominent role in the experiences of many the participants, and narrative examples of the key themes encountered in the exploration of these research questions:

1. How do students' experiences in informal learning spaces relate to their sense of belonging?

2. How does social identity shape students' experiences in informal learning spaces?

3. How do the ecologies of informal learning spaces relate to students' sense of belonging?

Participants

Thirty-one students participated in this study. In order to qualify, the students had to be at least 18 years old and had to have attended the main campus of the selected institution for at least two semesters. Table 1 presents the frequencies of the personal attributes of these participants. The words used to describe the gender identities, race/ethnicities, and sexual orientations used in the table are the participants' own words. The groupings of similar concepts are mine, e.g. Nonbinary/Genderqueer/Genderfluid and Bi/Multi-racial.

Four hundred thirty-nine students completed the initial survey and 234 of them indicated that they had or maybe had felt like they did not belong in a place where they studied. Of those 234 students, only 44 (19%) identified as male. Of those 44 men, 34 (all but 10) identified with one or more minoritized identities (6 identified as a person of color, 6 identified as a person with a disability, 7 identified with a sexual orientation other than heterosexual, 14 indicated they had received a Pell grant, and 14 indicated that neither of their parents had earned a college degree). Of the 234 students who completed the initial survey and indicated that they that had or maybe had felt like they did not belong in a study space, 180 (77%) identified as female. Of those 180 women, 123 (68%) identified with one or more minoritized identities in addition to being female (26 identified as a person of color, 15 identified as a person with a disability, 48 identified with a sexual orientation other than heterosexual, 58 indicated they had received a Pell grant, and 61 indicated that neither of their parents had earned a college degree). This study is not a quantitative analysis and is not intended to be representational of any student body. Yet, given that so many of the survey respondents who indicated that they had struggled with a sense of belonging in study space also had minoritized identities, it may be something of particular interest for universities seeking to improve the minoritized student experience on their campuses.

Table 2

Frequencies of Key Participant Attributes (n=31)

	Attribute	Number of Participants
Age	18-22	28
	23-28	3
Year	Sophomore	12
	Junior	11
	Senior	8
Time studying per week	up to 5 hrs	2
	5-10 hrs	12
	11-15 hrs	9
	16-20 hrs	3
	over 20 hrs	5
Gender	Female	22
	Male	3
	Nonbinary/Genderqueer/Genderfluid	4
	Genderfluid Demifemale	1
	Demimale	1
Race/ethnicity	White/Caucasian	18
	Black/African-American	4
	Bi/Multi-racial	3
	Asian-American	3
	Latinx	2
	Native American	1
Sexual orientation	Straight/Heterosexual	16
	Bisexual	9
	Gay	1
	Pansexual	1
	Demisexual	1
	Demi-pansexual	1
	Queer	1
	No answer	1
Parents' educational attainment	Either or both have a college degree	19
	Neither have college degree	12
Pell grant recipient	Yes	15
	No	14
	Don't know	2

As described in the previous chapter, participants were invited to interview based on the information they provided in the initial survey about their belonging experiences in study spaces. The majority of interview participants were female, between 18 and 22 years old, and studied 5-15 hours per week. Almost half of the participants reported receiving Pell grants, an indication of financial need, and nearly 40% reported neither parent having earned a college degree. Fifty-eight percent identified as White or Caucasian and 52% as straight or heterosexual. There were twice as many participants who identified with non-conformist gender identities as those who identified as male.

Participant profiles. Below, each of the 31 participants are identified using the pseudonyms they selected and their own language to describe their race or ethnicity, their gender, and their sexual orientation. Other personal attributes are described if they surfaced as important to the participants' experiences during their interviews. Appendix F presents this information in table form.

Anita was a senior majoring in economics, although she began her college career studying engineering. She studied 11 to 15 hours per week and identified as straight, Asian-American, and female.

Anne was a sophomore majoring in history pre-law who studied 11 to 15 hours per week. She identified as heterosexual, Asian, and female.

Ash was a sophomore majoring in political science who studied 11 to 15 hours per week. Ash identified as genderqueer, Caucasian, and pansexual.

Beatrice was a junior majoring in women's, gender, and sexuality studies who studied five to 10 hours per week. Beatrice described their gender as non-binary, their race or ethnicity as White, and their sexual orientation as bisexual.

Brock was a junior majoring in political science who studied 11 to 15 hours per week. Brock identified as straight, Mexican or Latinx, and male. He also reported receiving a Pell grant and being a first-generation college student.

Eliza was a senior majoring in retail merchandising and fashion product development who studied five to 10 hours per week. She identified as White, bisexual, and female and also reported receiving a Pell grant.

Elizabeth was a sophomore majoring in communication sciences and disorders, although she started in the nursing program. She studied 11 to 15 hours per week and identified as biracial, gay, and female.

Haley was a junior majoring in social work, although she had only completed 2 semesters on campus. She entered the university with a year's worth of college credit from dual enrollment opportunities in high school and taking summer courses at a college near her home. She studied up to five hours per week and identified as straight, Native American, and female.

Jack was a senior studying environmental and plant biology who studied 16 to 20 hours week. Jack transferred to this university in the middle of his junior year. Jack identified as straight, White, and male. He also reported receiving a Pell grant.

Jay was a sophomore majoring in interior architecture who studied 11 to 15 hours per week. Jay identified as straight, Caucasian, Muslim, and female. She also reported receiving a Pell grant, and that Turkish was the first language she learned to speak.

Julia was a senior majoring in occupational hygiene and safety although she began college as an athletic training major. Julia studied five to 10 hours per week and identified as straight, Black, and female. She also reported receiving a Pell grant.

Katie was a senior double-majoring in management and international business who studied 26 to 30 hours per week. She reported receiving a Pell grant and identified as White, heterosexual, and female.

Lauren was a sophomore studying political science, although she began college as a chemistry major. She studied 11 to 15 hours per week and identified as straight, Caucasian, and female. She also reported receiving a Pell grant to attend college.

Liza was a junior majoring in psychology who studied five to 10 hours per week, but she began in college studying pre-medicine. Liza identified as bisexual, Caucasian, and female. She also reported that she received a Pell grant and that neither of her parents had earned a college degree.

Magnolia was a sophomore studying health services and administration who studied five to 10 hours per week. Married and 25 years old, she reported feeling older than most of her classmates. She identified as a White, Appalachian, bisexual and female. She reported having a disability, being the first in her family to attend college, and receiving a Pell grant.

Max was a junior studying media arts and studies, although he entered college as an honors history student. Max studied five to 10 hours per week and identified as multiracial, demi-sexual, and demi-male. Max also reported that neither of his parents had earned a college degree and that he received a Pell grant.

Nicole was a sophomore neuroscience major who studied 11 to 15 hours per week. Nicole identified as bisexual, White, and as a cisgender woman.

Pam was a junior majoring in biology pre-medicine who studied five to 10 hours per week. She identified as White, heterosexual, and female. Pam was also a student athlete and an international student. Finnish was the first language she learned to speak.

Rain was an undecided sophomore who studied five to 10 hours per week. Rain identified as Black, bisexual, and female. She also reported that neither of her parents had earned a college degree.

Ruth was a senior accounting major who began college an interior architecture student. Ruth studied 21 to 25 hours per week and identified as straight, White, and female. She also reported receiving a Pell grant.

Sage was a junior majoring computer science who studied more than 30 hours per week. Sage identified as White, demi-pansexual, and as gender-fluid demi-female. Sage also reported having a disability.

Sam was a junior majoring in biological sciences who studied 11 to 15 hours per week. She identified as Caucasian, heterosexual, and female. Sam also reported receiving a Pell grant.

Sandy was a senior honors student majoring in communication studies. She studied 21 to 25 hours per week and identified as heterosexual, Latina, and female. Spanish was the first language Sandy learned at home in Puerto Rico.

Sarah was a senior majoring in nutrition who began as a biology student. She studied 16 to 20 hours per week and identified as White, heterosexual, and female.

Summer was a sophomore studying biological sciences who studied over thirty hours per week. She identified as female and Asian, and declined to name her sexual orientation. Summer's first language was Telugu.

Tameka was a sophomore majoring in special education who studied five to 10 hours per week. She identified as Black, bisexual and female. She reported that her parents had not earned a college degree and that she received a Pell grant.

Tanner was a junior studying chemical engineering. Tanner studied 16 to 20 hours per week. He was also a student athlete who identified as straight, Black, and male.

Tina was a sophomore studying biology who had recently transferred to this university. Tina studied five to 10 hours per week and identified as bisexual, multiracial, and gender-fluid.

Tori was a junior sociology major who studied up to five hours per week. She identified as White, female, and heterosexual. Tori also reported receiving a Pell grant.

Veronica was a sophomore majoring in education who studied five to 10 hours per week. She identified as bisexual, White, and female and reported receiving a Pell grant.

Walt was a junior studying English. Walt reported studying five to 10 hours per week. He identified as queer and White with a non-binary gender identity, and also as a gay man.

All of the participants in this study shared information about their preferences and habits when studying and how those influenced their choice of study space. These generally centered on temperature, surface area, lighting, noise levels, convenience, familiarity, and the availability of electricity. Most students also discussed how their needs fluctuated depending on the concentration levels they believed they needed to accomplish the task at hand, for example, close reading might call for a more distraction-free environment than a review of lecture notes. As an interviewer, I used questions probing these ideas to get a sense of how in-tune the participants were to their own study habits and as a mechanism to establish comfort and trust. I looked to move beyond these topics for additional reasons participants chose specific study spaces or avoided particular spaces and how that reasoning may or may not be related to their sense of belonging.

Informal Learning Spaces

Participants reported using and avoiding a wide array of campus spaces, local businesses, and their own off-campus residences for a great variety of reasons, including distracting smells and people, access to natural light, convenience, and many, many more reasons. Across the 31 interviews, the campus library, the public library, the student union, two identity centers, seven coffee shops (including those in the library and in the student union), numerous residence halls, multiple individuals off-campus apartments, a couple of sorority houses, and at least 18 academic buildings were mentioned by study

participants. By far, the campus spaces most often commented upon by participants were the campus library, the student union, one specific academic building (referred to in this report as the ESS (Engineering Study Space)), and one specific off-campus coffee shop (referred to in this report as coffee shop A).

      Informal learning space profiles. Below, each of these often-mentioned spaces are physically described.

      The campus library was a large, seven-story facility located near the center of campus. The building opened in 1969 and additional wings for more space were added in the early 1970s. With the exception of the book stacks on the top two floors, the remaining floors have undergone varying levels of renovations over the years. Each floor contained study spaces as well as resources such as books and computers and often a variety of office and meeting spaces, some available to students, some only available to library staff. Individual floors, with the exceptions of the second and fourth floors could be difficult to navigate because each were unique and consisted of a variety of halls, rooms, books stacks, and offices. However, the elevators and the main stairwell contained directory information, as well as information about expected noise levels in study spaces. Two of the floors were available 24 hours day, five days a week during the fall and spring semesters. Only two of the floors had public service desks. While staff were present in offices or working on other floors during business hours, they were typically only present on the two main floors of the building in the evenings, overnight, or on weekends.

The student union was a large, five-story facility located close to the campus library. It contained many meeting and study rooms, a great variety of lounge spaces, a ballroom, a theater, two galleries, a restaurant, a technology store, a food court, a coffee shop, and several student affairs operations, including the Women's Center, the Multicultural Center, and Student Accessibility Services. It was a highly traversed building for much of the campus community, not only to use the resources and spaces of the building, but in making their way from one end of campus to another.

The Engineering Study Space (ESS) was a building that was shared by engineering and medicine, and was widely known to students. It was located on the west side of campus near many science-oriented academic buildings and several large residence halls. It was physically connected to the engineering building by an enclosed walkway. In addition to classrooms and laboratories, it contained a café, an open atrium-style study space with about a dozen 4-person tables, some lounge furniture, and several enclosed study rooms. The building locked at midnight and the study spaces in the building were generally unsupervised by university staff.

Coffee shop A was an independent, locally owned and well-established business in the uptown area very near to campus. Located in an eclectically decorated old two-story building, its 4000 square feet had a living room feel and contained multiple rooms downstairs, including one with a stage, as well as multiple rooms upstairs, all with both lounge furniture and a variety of sizes of tables with chairs. The establishment employed many students and actively promoted social justice issues in it spaces and on its web site. They played alternative music on speakers throughout the space, and hosted open stages

on some evenings. Generally, during fall and spring semesters, the coffee shop was open until 12:30 AM. During final exams, it was open twenty-four hours. Participants in this study described it as "edgy," "hipster," and "the socialist coffee shop."

Informal Learning Space Ecology and Sense of Belonging

Overwhelmingly, participants' preferences and feelings about study spaces were based on their experiences and perceptions of others in those spaces and not about the physical space itself. Even when prompted to think about décor, graffiti, rules, procedures, or authority, only a few of the participants had any specifics to offer over and above descriptions of study lounges in residence halls and academic buildings that were gloomy and in dis-repair. Nicole's sentiment, "I like to have light and colors so that I can feel relaxed and happy while I'm doing my work instead of brick and darkness and sad [math building] vibes," was widely shared, as was the sentiment that noise levels are a foundational consideration in study space selection. That being said, a few themes of interest related to the built environment did surface. These were all related to signage and authority that tended to enhance or inhibit understandings of the purpose of the spaces and the behaviors expected within them.

Posted rules and regulations governing study space noise and availability were mentioned by several students as both needed and appreciated. Signage indicating acceptable noise levels in the library was mentioned by several students as valuable as they explored campus looking for space that fit their needs. Lack of signage about the availability or appropriate use of spaces also surfaced with multiple study participants. Ruth commented that she liked the study rooms in the business building but had been

frustrated to encounter them all locked at times and didn't know whether they could be reserved or if there were other limitations on their use.

In addition to problems caused by lack of signage, existing signage also caused problems when it was not thoughtfully approached. Two study participants mentioned confusion around a highly visible space in the student union with the prominent label "Honors Collegium." This space was located on a high traffic pathway directly across from the coffee shop at the top of the escalators near the main entrance of the student union. Both Beatrice and Rain mentioned noticing the space but not knowing if they would be allowed to use it since neither are honors students. Rain spoke about how the signage and the location is confusing,

> It's like right across from the [student union coffee shop]. So it's just like … it's not an honors lounge location. It's more in a public location. So it's like … it's kind of confusing. Is this a public place or is this for honors students only?

She told me about how she used the space for studying after a student group in which she was participating spontaneously met in that space. She said she would have never entered the space if she had not had this first experience or been specifically told she was allowed to do so.

Classrooms themselves as study spaces were also mentioned regularly as desirable spaces but some participants were unsure of the rules around their availability. Ruth explained a time when she was studying with classmates,

We needed a bigger classroom to review things. So we went in them and turned the lights on. We were like, are we supposed to be here? Are we gonna get kicked out? Is a janitor going to come yell at us?

Tanner similarly commented about being in classroom spaces all night, when the library is the only space he knew for sure was open all night long.

I know there are times I've pulled all-nighters and I've been in places other than the library the entire time … Yeah, there's people cleaning up and people locking doors and stuff. I'm not really sure if I'm still allowed to be there with them.

None of the participants in this study reported being evicted from a space, but while being interviewed in a library study room with a sign on the wall noting it was unavailable for reservation during certain times because of cleaning, Jack talked about being told to leave a study room in the library at his previous institution. He explained how that played into his larger experience there and his choice to transfer.

And then in their library I never felt comfortable, I just never did. And that was the same with the whole campus. I didn't ever feel comfortable even - and I mentioned earlier, that time I got kicked out of a room I thought I reserved? It's just like, "Why? Why? Just leave me alone." […] It was the assistant janitor, he's like, "Oh, well, I'm cleaning this room right now." I'm like, "I reserved this." And he's like, "No, I'm cleaning it right now."

Jack was animated and still visibly angry about this interaction and how unsympathetic the custodian seemed to be in interrupting his studies. He said, "I just never felt like I was a part of a group, I never felt like I belonged, and I hated it. I hated every day."

With the exception of the custodian evicting Jack from his study room, the only other authority figures who surfaced in the interviews were library staff. Veronica appreciated the time she witnessed a noisy group of student get approached in a library space.

> And they were just being loud and I just remember like someone who worked at [the campus library …] and was like, "Hey you're being too loud and this is a quiet floor, can you leave or take it down a couple notches?"

Veronica said she thought it was handled well, because the staff person wasn't' mean or negative.

Alternatively, Tameka expressed fear of library staff and frustration with some of her fellow students about being rowdy in the library.

> I could be on the second floor, and I would want to sit in the open, but all the other black students like to get together and be loud, and I be like, "Oh y'all going to get us kicked out the library. I'm going in the study room. I don't want to be with y'all. Y'all doing too much. I'm trying to work. I can't afford to get kicked out the library and my privileges revoked because of y'all."

Tameka said the students were not approached by staff at all, but it still worried her nonetheless and that she generally avoided similar loud gatherings of black students in the library.

Wayfinding in large facilities like the library also surfaced as one important ecological aspect to help students find appropriate spaces and be comfortable with independent space exploration. Elizabeth, a biracial student who had shared that fitting-

in during high school had been difficult for her because her family was not White and Christian, said that when she was in the library looking for a place to study, not knowing the purpose of a space made her "scared" and she left. When she saw a sign in the elevator that indicated there was a meditation room and quiet space on the fifth floor of the library, it comforted her and helped her feel okay about exploring this space. Over the semesters, she continued to use this space to study and commented, "I see a lot of Muslim students going up there and they like to study up there because they can pray."

Fortunately, none of the participants in this study reported bad experiences with graffiti, hate propaganda, or other environmental microaggressions in study spaces. Given the wide variety of preferences about the types of spaces students prefer and seek out, signage that did not clearly indicate the availability, purpose, and expectation of spaces caused some students unnecessary anxiety and confusion. Signage that helped with their understanding of the purpose of spaces helped them navigate to the spaces they needed. While authority in spaces was sometimes seen as helpful, in Tameka's case, library staff were also a source of concern.

Experiences in Informal Learning Spaces and Sense of Belonging

Peer anxiety. Peer acceptance loomed large in the students' explanations of space selection. Fear of being the "weirdo" surfaced regularly. Anne said, " … obviously you don't wanna be the one who's doing something weird, or you don't wanna be the one in the quiet room eating chips." Similarly, Anita said, "I walk into the [building A] or [building S] or wherever and just feel like oh god, everybody's judging me. Nobody wants to ... this is just weird. Everybody has their group, and I'm just not in

it." She admitted she didn't necessarily want to be included, but felt this othering nevertheless.

Some of the students talked about being afraid of being perceived negatively if they were alone. Sam said, "I feel like people notice that I'm alone, and like it's weird that I'm alone." As I interviewed Rain in a room in the campus library, she said, "Because sometimes I study here alone a lot, when I'm not with [my friend], so sometimes I'm like wow, maybe they think I'm lonely or something." Veronica also said, "… like do I look like a weird loner kid over here studying when everybody else is like socializing?"

Students also discussed a fear of being labeled as someone who doesn't know what they are supposed to be doing, specifically someone who doesn't know how to study. Anne said, "Sometimes I feel self-conscious about sitting down and studying around other people because I'm always like do I look weird? Am I studying wrong? Or something like that." Lauren explained this idea in more depth, and specifically related to the library.

> I had only been in the library once or twice, but it was just whenever I first
>
> walked in, I felt like the people at the tables were just ... it's like their natural habit
>
> to look up when you walk in, but what you immediately think is, oh, they know
>
> I'm not supposed to be here. I don't know what I'm doing. I didn't really know the
>
> floors that were the best, and it was just intimidating. If you walk around, and all
>
> the spaces are full, and then you gotta go find somewhere else, I just didn't really
>
> want to have to deal with it. When I was so comfortable with being in my room.

Sometimes participants related this idea of other people knowing "I don't know what I am doing" to feelings of intellectual inadequacy. For example, when describing using a space she believed to be dominated by graduate students, Pam, who spoke with slight Finnish accent, said,

> And also when I'm trying to read an article and focus on the article (this is very stupid) but I would start thinking like, "Oh my gosh. They see me reading this article and they see me not paying any attention to this." That they would be judging me reading that article because I'm an undergrad.

Pam admitted that this was unlikely to be the case and that other students would not be able to judge her intellectual productivity by watching her read.

Jack also described in detail the anxiety he felt when studying around other students. He said he started out in the library where it should be good because everyone is there for the same purpose.

> Everyone's got a goal, they're all studying, but then it started feeling like anxiety from it - I just felt like everyone was way more productive than I was and that's not a good feeling. And then it starts bogging you down and then you don't focus anymore.

He said he has a tendency to compare himself to others and when he sees other students being more productive than him, he gets even harder to concentrate and study

> I'll be coming in the fourth floor of [campus library], this library, and I'll walk past the people who have a book, they have another notebook, and then they have the stuff on the screen. It's all productive. I'm like, "Okay, I'm going to be

productive." So then I find a spot over here, and find a good spot, find a plug,

plug up my computer. Then like okay, I open up my tab from my Word

document, I start writing. And then I write for a little bit, get some stuff done, and

then I'm looking back and I see people next to me and behind me or whatever and

they're like grinding. And I see the person next to me has got this huge document

already written out. And I'm like, "Oh, crap." And then I just …

He understood that it is possible that a student with a large document could have been

working on it indefinitely.

But in my head, it's like, "Oh, man, they're writing so fast. Why am I not writing

that fast?" And so I had to get into the struggle of, okay, well I'll try to write

faster. But then my mind is not focused. You know how you can get into a zone

when you're writing? And it's just bam, bam, bam. But now that train has been

disrupted. It's not chugging along anymore. It's all other things. I'm thinking about

other people and how they're doing. And I'm not able to focus.

This competitive anxiety led Jack to find a study space in his girlfriend's church, where

he is nearly always alone, but it offers much of what he said he needs.

Peer motivation. While the anxiety induced by peers that Jack and others

described could be stifling, some of the participants in this study were able to use the

presence of their peers in a learning space as a motivator - through both inspiration and

fear. Some participants even described being purposefully very selective in their choices

of study peers.

Some students explained using their fear of being judged by their peers as a motivator in group study spaces. Sandy, a senior honors student, who was interviewed in the campus library, said,

> So if I am feeling that I need motivation and I feel like pushing something for a long time, one of the main things that I'm looking for, one of the aspects that I emphasize when looking for a place to study is people that are working hard on something. That would motivate me.

She explained that she would study alone, but "I want a space where I see other people just working hard too."

> I see them doing their own thing and I'm like, "Oh my god, I need to." It kind of puts some pressure on me, maybe a social pressure. It's kind of like feeling watched in a sense. I know that people don't necessarily pay attention to your computer, but it feels that being on YouTube, going to Facebook, I have to dim the lights on my computer when I'm in such a space because I don't want to be judged, like I'm just not studying or not being taken seriously. So that social pressure definitely works for me in a good way.

Nicole also described a social pressure.

> If I walk into a room and I can tell it's productive study time because that's what everyone else is doing, then I feel social pressure to also be productive. It's almost like someone's going to judge me if they look and I'm on Twitter. There's a social pressure to be productive.

Worrying that other students might think of them as slackers motivated Sandy and Nicole

to keep off social media during study time.

Other students described study spaces full of their peers as inspirationally

motivating. Rain said,

It's like you're in a room with other people that are studying too. It's like okay

you're getting stuff done. That's another reason why I like studying with my friend

[…] because we both get there - all right we need to get something done today.

Before we leave, we need to complete something. Just so when we do leave, we

can be like, "Okay we did this. We got it done."

Liza described it as a tacit agreement between both friends and strangers and she, too

evoked social media as a distractor.

It's that added pressure that you're watching me study, I'm watching you study, it's

a mutual agreement thing that we're both going to sit here, get our work done and

not bother one another. Because if not I would just sit and play on my phone.

She also said that should would avoid social media because she wouldn't want to distract

other students. Having others around also helped to remind her of her work. "So I

definitely think even if I don't know them just seeing other people working, I'm just like,

'Okay if they're working, what can I be working on?'"

Likewise, Lauren explained,

I feel like this place, this library, just fosters a sense of ... you just want to be

focused when you're here. At least, that's how I feel. You look around, and how

other people, especially if you're in a quiet area, nobody else is talking, so you

don't want to disturb other people. So, that helps you in return, by not getting yourself distracted.

However, this peer motivation sentiment isn't always tied to the library. Participants reported peer motivation in their residence hall study spaces, in coffee shops, in the student union, and in the ESS, in addition to the library. Rain said she had been able to find peer motivation in the study space in her residence hall and preferred that space to the library her first year of college because of its convenience.

Sandy and Tanner, both upperclassmen who reported studying far more than most of the participants in this study, spoke about how they had two distinct groups of friends: friends to hang out with and friends to study with. Sandy talked about her sorority sisters and her honors student friends. Tanner talked about his athlete friends and studying with his girlfriend as opposed to his engineering and pre-med friends. He explained,

> I have had a few chemistry classes with a few of my friends who are pursuing to be doctors, so studying with them definitely helps because either they're more focused on getting a GPA or better grades or I can learn a lot from them, and they'll push me to do better

Tanner said he doesn't like studying with his friends from the baseball team because, "Either I feel like what they're doing isn't as complicated or they don't study the same way that I need to in order to get my work done." He also talked about how he can't really study with his girlfriend "because she gets off topic and what she's doing isn't the same as what I'm doing, so it's harder to go on with both of it at the same time." He said he has friends to study with and friends to hang out with. "While I'm studying, I can only

associate with them [his study friends] because they get it. It's on a different level of the things that you have to do."

Sandy was even more straightforward and this seemed to be something she wanted to be sure I understood.

> So my friends at [this university]. So it's kind of divided, I have two main groups of friends. One of them, I met them in the honors dorms […] those are the type of friends that I usually go to the library with or go to [honors] events with. Then I have the friends that I met in more social settings, which are the ones that are from my sorority. They are ... How would I describe them? Yes, in terms of academic motivation, it's not at the same level as my other friends that I met in the honors dorms, however, I connect more with them in a way, like I'm rooming with them. But when it comes to going to the library and find a buddy to go with, they're not necessarily the group I can rely most on.

Both Sandy and Tanner were very serious and purposeful when describing their academic habits, but especially about who they studied alongside.

Peers and space exploration. Many of the participants in the study conveyed stories about how other students, often more experienced students, played an important role in their discovery of study spaces within the library and across campus. Ruth said her friends and classmates exposed her to study spaces in multiple classroom buildings. Rain talked about her friend telling her about a study space on the top floor of the library and Eliza spoke about how her roommate helped her find spaces in the library. As a transfer student, Eliza had a particular perspective about the difficulty of study space

exploration. She talked about how valuable the learning community first year experience was to her boyfriend, but that as a transfer student, she didn't' have that experience to help. She spent time on campus with family and friends before she transferred byt that also didn't help with understanding where to study.

> You don't know where to go. Even though I had so many friends, a family member that went here, it's like I can tell you where all the bars are because I was old enough, I can do that. I can tell you where to hike. I can tell you where our house - I know the streets but I didn't know where to study. I knew where coffee shops were vaguely, but I didn't know the ins and outs of [the campus library].
>
> And so to me just as a relocating student, I didn't find where to go for a while.

She said her friends and roommate were here "base" to help figure things out and to learn where to go study. "It was a lot of trial and error at first because I had no clue."

Other participants also emphasized the role of knowledgeable friends as guides for campus study space exploration. Veronica explained that her resident advisor showed her a study space in the library that fit her needs and through a professor, she and her classmates learned about reserving and using the group study rooms in the library.

> I think the hard part is a lot of kids, a lot of people, don't want to venture out of their comfort zone and they don't find the place that they belong because they don't leave the place that they're at. And so like for me, I stayed a lot in my dorm first semester. And it was an RA who, you know, they work for the university technically, and they got me out and took me to the library and that's where I found my place. But that doesn't happen for everyone.

Veronica was grateful and believed that not all students were as lucky as she.

Sandy, too, conveyed how, especially as a new student, she needed someone to help direct her study space exploration. She learned about using the upper floors of the campus library because access to them overnight was touted by academic leadership as a special perk for honors students. She learned from one of her friends that it was okay to use the classrooms to study.

> Now that I'm a senior, I feel more entitled to be in different places because I know what those spaces are intended to be for. When I was a freshman or a sophomore I was more scared to invade different spaces.

Over time and with increasing comfort and confidence in her place at the university, Sandy's initial hesitancy to explore on her own had diminished.

For the participants in this study, peers played an important role in both motivating and inhibiting successful experiences in informal learning spaces. General social acceptance was expressed by the participants as an important part of the study experience, as well as the social pressure and motivation afforded by study spaces where students gather. For some, motivation came from the people in the spaces by way of camaraderie, for others motivation came from avoiding bad study habits for fear of being judged by their peers. Both Sandy and Tanner described segmenting their friendships to those who provided the proper study partnerships and those who did not. For Jack, being around other productive students caused him so much anxiety, he retreated to a space where he could be alone. Peers also played an important role in helping students explore, discover, learn about, and feel comfortable and confident in study spaces.

Social Identity and Experiences in Informal Learning Spaces

Participants in this study expressed a variety of ways identity intersected with their experiences in informal learning spaces. In addition to students of color expressing the simple notion that it would be nice to see other people who looked like them, participants also discussed experiences related to their religion and gender, their perceptions of others' political perspectives, and differences related to their disciplinary identity.

Someone who looks like me. Many students from racially or ethnically minoritized backgrounds expressed a desire to be in spaces where they might "see someone who looks like me," as Tina, a multi-racial sophomore put it. Anita, an Asian-American senior, said she liked studying in an academic building where a lot of international students gather because she stands out less and can blend in, even though once past the surface, she has more in common with the "White girls" everywhere else on campus. Tameka, a black sophomore, talked about trying to study in the newly renovated academic building for her discipline:

> I've tried to spend time in [building M] one time. I don't know, I felt out of place. But like I said, it's not a lot of black students who come here . . . Because at [building M], I don't know. I don't mean to focus on race as much, but as a black person you kind of go somewhere, you look around like, "Is there more of me? Where y'all at?" And then I go in there, and I'm like, "Oh, there's no black people."

Students with visible minoritized identities like race or ethnicity did not have very many opportunities to simply be one of the crowd on this campus. However, even when a students' skin tone, hair, or features helped them blend, other differences can surface to make study space less than ideal.

Group avoidance. Many participants in this study spoke about the need to avoid spaces where large numbers of students gather. Sometimes participants were avoiding specific groups of students such as those who were perceived to be associated with the Panhellenic college culture or with specific political views. Other times, participants expressed the need to simply avoid any large group of students because of fear related to the visibility of their minoritized status.

Gatherings in study spaces of students who are perceived as representing the stereotypical fraternity life and college party culture have a negative impact on some students' experiences. Students of color, gay men, students who expressed non-conformist gender identities, and even students simply seeking a rigorous study environment reported avoiding or leaving study spaces because of the presence of students perceived to be associated with this sub-culture.

Eliza, a White, working-class and first-generation student, spoke about a space in the library that she said has a reputation of being populated by students associated with Greek life.

> This sounds very judgmental but I'm not going to want to sit by Sigma Kappa whoever who's on their phones talking about the kegger that they're going to. I'm going to take another lap and see if there's a table across the room because that's

… I don't want to be around that. And I will do that two or three times if I have to.

I avoid the third floor in general.

Avoidance of stereotypical Panhellenic groups was mentioned by other students, too.

Brock, a Mexican-American junior studying political science told me about how, mostly through social experiences and campus activism for Bernie Sanders in the 2016 presidential primaries, he learned to associate fraternity life with business students. He began by telling me about his avoidance of the business building. He said he had never studied in the business building and does not like to go there because, "business majors to me are kind of just tools, in a sense." He also said he believes if he did study there, "I just think I … I feel like I'd stick out. And I'd say that's because of my skin color, and I just don't look like a business major per se." This "kind of like a presence where I wouldn't want to study, or I wouldn't want to go" is in the business building and in certain parts of the campus library. He went on to tell me how this impacted his thoughts and behaviors about navigating space on campus.

When I'm around business majors in general, I always watch what I say, I'm hesitant on like what I express. I've got [political] pins on my book bag. And like I'm always, I'm not worried but like I'm always thinking when I walk past [the business building] or when I'm around business majors, like, "I wonder what they're saying in their head when they see this." I wonder like, yeah, I just wonder what they think.

He said he didn't think the business students typically would say anything or express

their dislike or disagreement with him, but he has witnessed them express their beliefs

and it makes him hesitate.

> I'm not like trying to like hide it but at the same time I'm not trying to throw it in
>
> their face. I kind of like, want to hide it, I just kind of ... I don't want them to
>
> associate me with my political views or anything like that. I just kind of want
>
> them to see me as an equal.

Brock said when he sees business students studying together, he will go somewhere else.

> Like nothing that has specifically happened, but just kind of like what I associate
>
> with them, it's kind of like a flight thing, it's kind of like get out of there. But not
>
> like I'm in panic mode, it's just like, okay, you don't want to be here.
>
> Elizabeth, a biracial sophomore began by contrasting the health sciences students

with the engineering and math students and expressing her desire for the disciplines in

her college, health sciences, to be more racially and ethnically diverse.

> I feel like the majority of people in [the health science building] are in nursing.
>
> That's all I see is people walking in scrubs, people doing this and that for nursing -
>
> nursing this, nursing that. It's like none of the other majors even matter. On top of
>
> that, there's no diversity within ... well, there's little to no diversity within each of
>
> these majors. Especially in the [health sciences college]. If I go into the [ESS] and
>
> see a bunch of engineering and math majors - they're so diverse! You see so many
>
> different kinds of people and I feel like they're all just ... I don't know … I
>
> definitely feel out of place. I don't know how to explain it.

Elizabeth was speaking of the racial and ethnic diversity she noticed in the ESS. She went on to associate the health sciences students (mostly nurses and mostly women), with Panhellenic life.

> Even when sitting in class it's just like a bunch of people and they're all in Rutabaga Pie sorority - I don't know what they're called anymore - and they're talking about this and that and I just feel like they're all kind of involved with the same things as each other and I'm not […] I like to study in [the health science building] when it's empty at night so I don't feel like that weird, out of place, like I have to be a nursing student and I have to be in Delta Omega whatever. […] There are definitely times where I prefer not to study in [the health science building] because of, let's say a giant group of nursing majors come out and they all sit down and it just makes me feel like I'm just sitting idly by and I'm not really in the space, I'm just kind of like ... I don't know. It's hard to explain […] When I'm studying, when I'm focused on academics, I don't want to also feel like I'm not a part of this campus in a way […] There's this culture of partying and Thirsty Thursday and Greek life and … all these things. When you make choices to not do those things, whether it be how you were raised or your culture or just your personal preference, you kind of feel like, since this is a smaller campus and it's not urban […] It's just hard to feel like this place is your home away from home when you're not part of the main culture. Do you see what I'm saying? *I don't want to continuously feel, like whether I'm studying or not, that I don't belong here.*

The intersection and overlap of discipline, ethnicity, race, and the college party culture impacted Elizabeth's choices of study space and her feelings and of belonging to the university.

Jay, a Caucasian sophomore and Muslim, didn't talk about specific space or discipline but expressed that her favorite study space wasn't a specific physical place, but anywhere she met with her women's scholars group because they were very diverse and accepting. She indicated that she had not experienced a lot of prejudice in college because her minoritized identity is invisible, but had experienced enough to learn how to navigate to avoid the pain of microaggressions. Jay said, "I haven't received hate towards me specifically." She said that was because she looked like "your typical White girl." Jay said she had experienced other students "bashing" on her religion and even though she is "not very religious," this made her angry and so she would speak up.

> And then they're like, "But you don't look like a terrorist." So I've gotten that […] I personally wouldn't go to a space where they have Trump meetings or Trump rallies. I just wouldn't want to go to that space because those are not the people that I identify with, so I wouldn't feel comfortable and there's no reason to kind of put myself out there to get emotionally hurt, so I just don't put myself in those situations.

General avoidance of certain groups was expressed by others, as well. Sarah, a White senior studying nutrition told me about avoiding certain spaces at certain times in the library where she has encountered groups of people who are loud and talk about sexual conquests, drinking, and drugs. She added, "I feel like in a lot of group spaces that

happens." The idea of playing it safe by avoiding spaces where large numbers of students gather, even just to study, was reflected in many of the experiences relayed by study participants with non-conformist gender identities.

Beatrice, Sage, Walt, and Ash all communicated stories of avoiding spaces where there might be too many people. These students weren't just avoiding rude, obnoxious, or offensive behaviors and language, they also had concerns about experiencing microaggressions, being confronted, or worse. In their survey response, Beatrice (who prefers they/them pronouns) stated that they used certain furniture in the library so that others couldn't see them because "If I am out in the open, I am always afraid that people are judging how I look, what I'm wearing, and whether or not I am going to be judged because I look queer." During the interview, Beatrice explained further,

> I used to study at the library a lot, and then when I started working at the LGBT Center I started going there more to study just because it was a quieter space and I knew that nobody was going to … it was just more comfortable for me to be there and exist there. Yeah, I used to study in the library a lot and it's not like the library was any inherent danger. It was just, I felt uncomfortable. There were usually lots and lots of people.

Sage had a similar story that also related to her gender.

> If I was studying, it was either in a remote place where a lot of people wouldn't go, because I was starting hormones, and I wasn't really ... I didn't really feel safe in the lobbies or whatever. And that kind of accelerated fourth semester, when I actually started estrogen, and I'd stay in my room quite a bit.

She stayed in her room because it was quiet. "I didn't go to a whole lot of designated areas like the library, just because it felt kind of ... It felt too open, like there were too many people."

Walt told me about hearing homophobic jokes in study space on the third floor of the library and about concerns regarding walking alone at night restricting his study space options. He avoided studying in the library on nights when there was an increased chance of encountering intoxicated groups of students while he walked home. Similarly, Ash, who prefers they/them pronouns, talked about whispers and looks from groups of students when they were in the library wearing nonconformist clothing. Ash specifically mentioned that when the library gets crowded during mid-terms and finals, they will have to study somewhere else even though studying in the library might otherwise be their habit.

Females in masculine spaces. The idea of "masculine" space as Nicole stated, or space where it is just harder to be female surfaced in discussions with Anita, Sage, Nicole, and Sarah about studying in the ESS and with Beatrice about the newsroom. Anita, who started as an engineering major and then changed to economics, talked about her experiences with study groups in the ESS before her major switch.

> I'm not good at engineering stuff. There's a reason I switched my major. So, as a female engineer, most of the female engineers in [the engineering building] and [ESS], they're the smart ones. You kind of have to be. To be taken seriously, you have to be the smart one. And I'm just, when it comes to some of that stuff (shaking her head side-to-side, negatively) … So it's like, "Yeah, I'm a girl, AND

I don't know anything." So, I'm just making the whole gender look awful. I'm just

reinforcing every stereotype that girls aren't good at math. So, yeah. I don't know,

I just felt weird about that.

Similarly, Nicole, a neuroscience major, felt the male presence in the ESS, which was the

convenient place for her this semester. "It's a very weird place. It's full of engineers, and

engineers are weird. First of all, it's just very masculine." She added that not being an

engineering major added another level of strangeness to the experience.

I feel like someone's going to look over and see me doing biology and be like,

'What does she think she's doing? This is for intense computer-scientist-type

people." I can imagine if I was a linguistics major, trying to work in the [ESS],

because then it would be like everyone would think I'm a joke even though

nobody's really paying attention. And I know that. But it's just like it feels weird

to be there.

Sage's anxiety about the ESS space was slightly different as a transgendered

person, but it was still related to the overrepresentation of men. Sage said,

If there was a group of people working on a programming assignment, or

something, which would be in the [ESS], or something like that, and I wanted to

join them to talk about it, a lot of the times, I feel like I wouldn't fit in, in terms of

my gender's different, and I don't know how accepting they'll be because I don't

necessarily know who they are. There's tons of groups of guys because women

are underrepresented in STEM.

Sarah, a senior nutrition major, answered the preliminary survey by stating that in the engineering building she, "felt like all the men studying around me were looking at me wondering why I was studying in their building." She explained further in her interview,

> I feel that it is a male/female thing sometimes, because I've met a lot of engineering majors, and I don't want to say that this is all of them, but they have some issues with social skills, I feel like. So, it's just uncomfortable to walk into basically an all-male study space, as a female, and sit down and you just get looks, side glances, things like that. Even though you're there for the same purpose they are, and you're not there to really distract or do anything that is crazy or anything like that, you're just there to study.

When I asked Sarah if she thought it would feel different if she were an engineering major, she said maybe she would "feel more entitled to be in that space perhaps, but […] at the same time, a lot of nutrition is STEM classes."

It wasn't just STEM spaces where the masculine presence dominated. Beatrice talked about how uncomfortable the campus newsroom could be.

> The newsroom was always super uncomfortable because [station XXXX] is very male-centered. I was in a class for LGBT media and I could tell that I was probably, or I was one of the only people in the room working on some aspect of diversity because a lot of it was sports stuff, and gridiron glory, and all of that.

Beatrice reported noticing this through aggressive behaviors in the space and believed that it went unchecked because of a lack of authority in the space.

There was usually a sports game on in the newsroom and it was a lot of very aggressive, enthusiastic sports behavior. Just talking about women, and women they've slept with, and how drunk they got last night […] There isn't really any authority which kind of sucks because kids can just do whatever they want. They'll use that space to just do whatever and it can get hard to get work done. Especially because the computers are super unregulated and they're the only ones that you have access to when you're trying to copy video information.

Beatrice experienced the newsroom as a place where male aggressiveness went unchecked. Anita and Nicole experienced the ESS as an unwelcoming place where they had to prove the intellectual ability of their discipline or for all women. Sarah felt unwelcome there because the men indicated her presence was disruptive and Sage feared their reaction to her being transgendered, as well as a woman.

Disciplinary identity. Many students emphasized the importance of being around students doing similar disciplinary work or avoiding being around students with different disciplines than their own. Sometimes this had to do with perceptions of rigor in the disciplines, like much of the sentiment about the male engineers, and sometimes it was related to perceived values or political positions.

The most obvious place disciplinary differences surfaced was in the ESS. In addition to Anita and Sarah's comments above that intertwined gender roles and disciplinary rigor, some of the other study participants commented that the ESS was uncomfortable due to fears of being judged because what they study is perceived to be intellectually less demanding. Liza, a junior psychology major who started in biology for

pre-medicine students, talked about the ESS as a study space she explored and rejected early in her time at the university. She was attracted to the space at first because it was quiet and convenient. "But it just didn't feel right to me being there, definitely after I changed my major it just kind of felt, kind of like, I don't want to say "wrong" but it was." Liza explained that most of the students in the space are studying engineering or medicine. "And you can tell who's who. And this is terribly stereotypical but I feel like they put themselves almost on a little pedestal." She said she, "just felt very pressured to not be there, and to hide myself more" because their work was more "advanced" than her work.

> I didn't want them to see my work because I'm like, they're doing really crazy things and here I am maybe working on a psychology paper. But to me that's obviously hard, and it's my work, but for them, pshsh - that's nothing [waving her hand dismissively] […] when I went in there I'd usually be in a group with my chem friends where we'd go there together to work on labs, and you could tell, people were like, that doesn't fit here. And you could see it when they'd look at us being like, "What are you doing?"

Liza quit studying in the ESS after that and found studying in the building that houses the psychology department was better for her.

Katie, a senior management and international business major said one of her business professors moved her class to the ESS and it made her feel uncomfortable and out of place to walk through the space. Referring to the people in the study space, Katie said she asked her classmate, "Do you think that they know? Do you think that they

know we're business majors just based on how we're walking or based on something?"

She also said that even though it would have been more convenient for her to study at the

ESS, she couldn't do it because she felt judged by other students for not only taking their

space when she wasn't an engineer, but also because of the stereotypes associated with

business majors. She felt that other students who studied in the ESS believed that

studying business was not intellectually rigorous. She also spoke about how some

students believed that people who major in business did not care about social justice

issues or world cultures but only cared about money.

Katie explained that this stereotype about students in the business disciplines

valuing money over equality and justice revealed itself to her in her on-campus job. She

worked every morning making salads for campus food services with other students who

were majoring in history, political science, and anthropology. Katie said she and her

fellow student workers talked "all the time" but then their perspective of her changed

when they found out she was a business major.

> We talked about all those things over the semester and then as soon as they heard
>
> that I was a business major, they were like, oh, you think this now instead of what
>
> I was actually saying maybe. I think that the stereotype is so powerful that it
>
> overrides getting to know the person.

When she tried to explain that she was studying the cultures of other countries, she

"thought it was kind of strange that they were like, 'Oh, all you care about is numbers.'

I'm like, "I'm literally learning about what it's like to move to Lebanon right now."

She also said she suspected, "every college or major is gonna have stereotypes about each other. I'm sure that most college business majors think that like probably humanities are pointless and stupid. So, you know, they're wrong too." Katie resented being labeled as neoliberal because of her field of study and also told me that there are study spaces where it is made obvious that the business students are not welcome because of their perceived association with this point of view.

From Katie's perspective, coffee shop A, which she labeled the "socialist coffee shop" had a specific culture that was also anti-business student. She said, "There's kind of like a rhetoric that is accepted there and not accepted." She said she used to study there more often when she lived on-campus, and explained further,

> I've definitely seen, I've been a part of business majors talking about something that's related to their homework and definitely seen some eyes pop up like, "What are you doing here," kind of a thing … Yeah I feel like there's a certain like way to dress, and a way to act, and a way to walk that, like, when you're in [coffee shop A] it's like different from [business building] for sure.

The way people dressed also came up in Sandy's story of feeling unwelcomed at coffee shop A.

Sandy was a communication major, not a business major, but also believed that coffee shop A had a culture that sometimes made her feel excluded. She told me about a time that she went to meet one of her honors student friends, "the more hipster type of people," at the coffee shop in the afternoon. Immediately, the "vibes of the people" made her feel that she was not "part of it or included." She explained that coffee shop A "is a

place where they do a lot of poetry, and improv, and people that are very liberal go there, that dress more liberally, that are more advocates for causes and more passionate about subjects."   Sandy said she know this because she met these students through student senate and living in the honors dorms. She said even though she knows these students she didn't feel like she belonged there "in the way that I dress, in the way that I am personality wise." She said it felt like she was "invading their space" and that during the day she can't blend in. She fits in better at night.

> I dressed more relaxed at night, so that kind of makes me feel like I can be part of
> the environment. Yeah, but during the day, definitely not […] I think I'm not as
> serious as them, or I don't feel like I portray myself as serious as them.

Sandy went on to explain she meant, "Seriousness in terms of political beliefs or something they're passionate about." She said a lot of student activists hang out there and she knows them and follows them on social media.

> I don't feel like even though I believe in the stuff that they advocate for, that I
> don't show it. Since I'm not a person that doesn't show it as much as they do, and
> they occupy this space a lot, then I feel like I don't belong or that I am not as
> serious as them in the beliefs of, let's say, pro-choice over pro-life. Even though I
> am and I do my own advocating in my own way, writing on my blog or being part
> of different organizations on campus, like supporting the fundraisers of those
> organizations. I mean that particularly, but these people just take the streets.
> Many of them that I usually see at [coffee shop A], they participated in the march
> there was the other day about rape culture, but I did not go to that. I feel like I'm

not taken as seriously when I am in a space where they usually dominate it and I

don't, I don't usually take part of their activities.

Her concerns about fitting in stemmed from her perception that they judged her for not

being engaged in specific causes in the ways that they were.

Liza described a hierarchy of rigor in terms of disciplines and talked about how

disciplinary spaces influence her choices for study spaces.

It's discouraged me from being in places before because a lot of times when

you're in a major, other people's majors definitely influence you. Because if I was

a bioengineering student I would be like, "Okay well I'm not at an engineering

level, like my stuff is lesser than their stuff. But at the same time I know that

there's … (this is going to be terrible because I hate when people do it to me) but

if I was sitting next to a music major I'd be like, "Okay, well my stuff - I'm doing

research reports and they're just like, doing music stuff" […] I hate that feeling of

when people do it to me because I'm a psychology major, but you almost can't

stop yourself from doing it to other people."

As a retail fashion and product design major, Eliza also spoke about how she won't do

some of her assignments in typical study spaces, like the library where she was being

interviewed, because they draw attention and appear to others to be easy tasks. She

explained that in her major, she might have project that requires working with croquis, or

fashion bodies and painting and she would never work on those in the campus library.

"You feel like you have peering eyes." When witnessing her working on assignment

with croquis and a mood board, Eliza's roommate, who was a chemistry major,

commented, "That's so easy." Eliza said, "It's *not* easy. Yeah, I'm cutting and pasting but I have to think about it." She said she wouldn't risk that in front of the other students in the library.

Elizabeth explained that she learned the hard way that many of the academic buildings are set up to cater to their exclusive group. She described entering the academic building that houses much of the college of communication,

I remember going in there as a freshman in a panic and I needed to print something and they had this whole printer room and I asked them why my thing wasn't printing and they were like, "Oh, yeah. It's only for communication majors." Why would you deny someone the ability to print? We're all paying. Either way. It just feels like a lot of resources are for that specific major and that's what made me kind of uncomfortable in there. I don't like buildings like that.

Contrastingly, disciplinary building identity also helped boost some students' sense of belonging. Liza, a junior psychology major who earlier described her discomfort with the ESS, talked about how the academic building that was home to her major helped her feel good about being in college and being part of a group.

If I'm there, not only am I seeing other people from my classes that happen to just pass by because we all have to be in that building, but it also is … if I see my professor walking by, we can have a conversation while they're on the way … So it not only brings me closer to the building and the place that I need to be, but the people that are there in the same space as me as well.

Liza especially appreciated the value of this space in contrast to how lost and unsure she felt her first year.

Ruth, a senior, also talked a lot about how important it was to her that she and her fellow accounting students had a space where they regularly studied together in the business building. Katie agreed that "a lot of the campus buildings have their own culture," and echoed that the academic building associated with her major helped her feel connected to the campus, especially as she advanced in her studies and more and more of her classes were held in that building. She said, "It felt more like home."

These students' gender, religion, ethnicity, and race all impacted and influenced their study space navigation. Frequently, participants' feelings of being othered also intersected with disciplinary identity. Sometimes this was due to experiences that happened in study spaces – jokes, whispers, looks, and exposure to unpleasant or unwanted conversations. Often it was carried into these spaces by the participants and came from their interactions with certain groups of students in the rest of life.

Participants in this study expressed a desire to see other students who looked like them and to blend in when their minoritized identities were visible. Some participants described in detail how they navigated campus study spaces to avoid groups of students they perceived to be part of the party culture, whether that was library space or disciplinary space. Sandy and Katie recounted the unwelcoming atmosphere in the local coffee shop where business students were associated with neoliberal ideals and where one needed to be an activist in order to be accepted. Multiple women described two unique masculine spaces on campus. Jay described how microaggression associating her

religion with terrorism influenced where she chose to be. Brock, Walt, and Ash all described fear of confrontation by another student who might threaten their safety as an influencer in their decision making about and choices of study spaces.

Importance of Belonging in Study Spaces

Students overwhelmingly expressed their belief that having a sense of belonging in their study spaces was critical to their success as students. They described how their productivity suffered when they tried to ignore feeling like they didn't belong while they studied. Some of them also stressed their strong belief that having a study space where they felt they belonged was an important component of their overall sense of belonging.

Many participants reported concentration and focus problems, and general declines in productivity when they attempted to persist in study spaces where they felt they did not belong. Eliza explained,

If I'm focused on my anxiety, I'm not going to retain information I'm looking at. It's just reading and reading and not comprehending anything of it. And I'm always just thinking about a way to change how I'm feeling. And if I have to do that then I'm not going to be studying. I'm just going to be there trying to figure out a way to get out of the situation I'm in.

Similarly, Sarah described it as an inability to focus. "If I don't feel that I fit in or that I belong there, then I can't really focus. I'm too focused on thinking about what other people think, whether they think I should be there or not."

Some participants even commented that a sense of belonging in their study space was more important than feeling as if they belong in the classroom, especially in large-

enrollment courses where it is difficult to connect with the instructor. Summer, a sophomore, explained:

> I feel like most of classes over freshman year and a couple this year have been really big lecture halls and I feel like in that case, no one really cares. Because there's so many people and the teacher is going on. They don't really care if you are paying attention and it's mostly up to your own initiative. Whereas studying outside [of class], it's more … I guess it's something that's expected for those classes. So feeling like you belong in one of those spaces can impact your productivity which then impacts how you do in the class as a whole.

Sandy agreed that not having a study space where she felt that she could belong would impact her academic performance:

> If you don't have that space where you can devote time and concentration to do what you're supposed to be doing, because I came to [this university] to graduate, have good grades, and if I don't have a space where I can actually do what I came here to do I wouldn't feel like I belong because I would be constantly looking for a place where I can do what I was meant to do, which was graduate with good grades and with honors. Those are my goals . . . I think I would've otherwise transferred because I think the space affects my grades and my performance, and it would've been reflected in my grades if that sense of belonging was not there.

> Like Sandy, Ash and Summer conveyed that feeling like one belongs in study

spaces is an important influencer in the how a student feels about belonging on campus in

general. Ash spoke eloquently about the relationship between having a sense of belonging in study space and having a sense of belonging to the university at large.

As much as college is about the social aspect, you're here to study. If you can't feel like you can belong in a place to study, it almost feels like you might not be able to belong. So if you don't feel a sense of belonging in the most basic aspects of college life then how can you expect to feel that sense of belonging in general?

Similarly, Summer concluded:

I feel like, in a way, the people you're around in study spaces and the location of the study space sort of reflects the campus at large. So if you feel like you belong in a study space, it's easier to feel like you belong in campus at a whole because I guess the sense of belonging sort of carries over, even though campus is really big, if you can find a small space where you belong, it carries over. Yeah.

Conclusion

In this chapter, I have shared the profiles of the study participants and detailed descriptions of the campus spaces that surfaced repeatedly in the experiences they shared. While interactions with and perceptions of other people dominated participants' narratives about their navigation of informal learning spaces, physical space attributes such as signage conveying behavior expectations and the intended purposes of spaces, as well as the presence of authority (or lack thereof), all surfaced as factors in the experiences of these study participants.

The perceptions and behaviors of peers played an important role in nearly all of the study participants' stories about sense of belonging and informal learning spaces.

Sometimes peers caused anxiety and fear of being discovered as not smart enough or not knowing proper procedures or behaviors. Other times, the presence of other students studying nearby was motivational and inspiring.

The participants in this study all identified with one or more minoritized identity. Often, that identity played a role in their belonging experiences in informal learning spaces, just as it does elsewhere in their lives. Participants reported a desire to see someone who looks like them physically and wanting to blend in. Identities and personal attributes of people associated with the typical majority on this campus also surfaced as a negative influencer for some students. Some participants in this study offered detailed stories about their experiences and feelings related to the party and Panhellenic cultures and how those impacted their navigation of study spaces. Gender identities, specifically the avoidance of male-dominated spaces in STEM areas and the newsroom, also surfaced in participants' stories.

Participants' disciplinary identity also played a role in their belonging experiences and stories about informal learning spaces. Sometimes beliefs about variances in rigor between fields of study was at the root of these narratives. Gender roles were also intertwined with ideas of rigor, especially related to the STEM disciplines and the study space dominated by engineering students. The ascription of certain values and political beliefs to specific disciplines also played a role for business students and for students who studied at a local coffee shop. Finally, nearly all of the participants in this study conveyed that feeling a sense of belonging in the space where they chose to study was tantamount to accomplishing their goals. Moreover, studying in spaces where they felt as

if they did not belong hindered their academic productivity enough to make them

ultimately seek out a different place even if it is otherwise less than ideal.

Chapter 5: Discussion

This basic qualitative research study explored a diverse group of undergraduates' experiences in informal learning spaces on a residential, predominantly White, Midwestern university campus in order to better understand how these microsystems promote or impede students' sense of belonging. Specifically, this study examined the following research questions:

1. How do students' experiences in informal learning spaces relate to their sense of belonging?

2. How does social identity shape students' experiences in informal learning spaces?

3. How do the ecologies of informal learning spaces relate to students' sense of belonging?

This chapter discusses the findings presented in the previous chapter and makes recommendations for future research, as well as practical recommendations to space planners, librarians, and other university staff responsible for the development, maintenance, and evolution of informal learning spaces in the university environment and librarians, advisors, and student affairs personnel responsible for student success support, programming, and initiatives outside of the classroom. This chapter also includes a reflection by the researcher on how conducting this study impacted my professional practice as an academic librarian.

System Influences

So often, literature about campus study spaces present it as neutral and one-dimensional, as if a picture of a space devoid of people tells everything one needs to

know about it. Furthermore, instruction offered to students about where to study typically only emphasizes individualisms and personal preferences, perhaps going so far as to remind students that sometimes studying around other people can be distracting. The participants in this study made it clear that quite often, what makes a space a good place for someone to study has to do with much more than their individual preferences regarding natural light and noise, and size of a table or cushion in a chair.

This study was approached as an investigation into the study-life microsystem of residential college students at a predominantly White institution. This was done through the application of the ecological model of human development which provides a frame and structure for interrogation of physical surroundings and human interactions while respecting an individual's unique lived experiences (Bronfenbrenner & Morris, 2006; Renn & Arnold, 2003). Participants relayed their experiences and feelings about study spaces through stories that explicitly and repeatedly referenced other people – what they looked like, what they wore, what they did, and what they said, and all of that was intertwined with perceptions and assumptions about assimilation, disciplines, rigor, political and religious views, and gender norms.

Most of the perceptions and assumptions of the participants in this study were developed outside of the study spaces – in microsystems like classrooms, co-curricular experiences, the social scene, and even on social media. They were also influenced by the students' meso-, exo-, and macrosystems. The mesosystem encompasses the interactions and interrelations between a student's various microsystems. For example Brock's experience with business students in the bar scene and as an activist influenced

his disdain of spaces in the library where he sees their presence, and Sandy's reluctance to study in the local coffee shop because she sees the activism of students who occupy that space on social media and believes they think she falls short, are both examples of their mesosystems at work. The exosystem encompasses more distant influences, but yet directly relate to the student's world, such as Elizabeth's experience of being denied printing in one space because of that college's policy to deny printing to students from outside their majors. Finally, the ideological influences of the macrosystem were also plentiful, like Katie bristling against students who presumed to know her values because she was a business major, and Jay stating that she wouldn't go to places where Trump supporters might meet. Figure two provides a visual representation of participants' specific system influences, inspired by the graphical representation of Bronfenbrenner's model by Renn and Arnold (2003, p. 268).
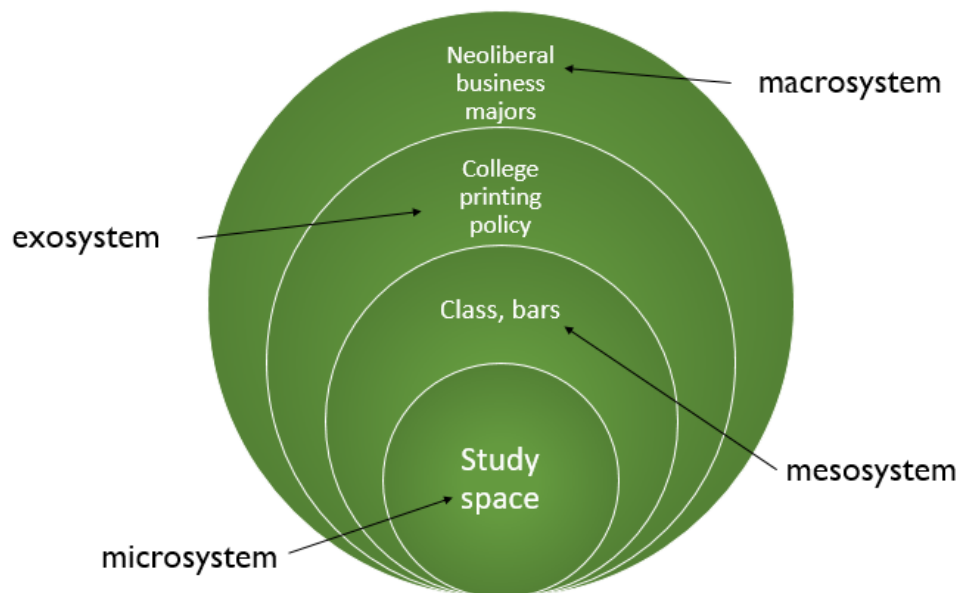

Figure 3. A systems' perspective of participant experiences in study spaces

It is impossible to separate participants' experiences in study spaces from the rest of their experiences on campus and in life. While these multi-layered system influences are often not even at play in the study spaces themselves, they absolutely drive student's navigation of space and impact the choices they have for study space. Tameka is not going to risk getting her privileges revoked by being associated with the other black students being rowdy in the library, and Walt is not going to use the library on nights when there's a good chance of running into drunken homophobes on his way home. Students have agency in the selection of their study spaces and they navigate to avoid the possibility of undesirable consequences in campus study spaces, just like the rest of life.

More than Wayfinding

Participants in this study indicated that understanding the purpose of spaces on campus and the expectations of behaviors in those spaces was an important component of their ability to not only locate spaces where they thought they would belong, but also feel confident in their choices. Elizabeth's experience of discovering the meditation room in the library in a quiet study space is a good example of how a library or other academic building can help students find spaces that not only fit their practical study needs, but also facilitate their sense of belonging. She discovered this through signage on the elevator directory which indicated to her an environment that might be more accepting of diverse identities than the academic building that houses the health sciences where her experiences were with predominantly White women she associated with the campus party culture.

Routine university business and a lack of explicit information about the intentions of seemingly innocuous campus spaces served to disrupt participants' concentration and caused uncertainty and anxiety about occupying spaces. A simple notice to Jack that he may be interrupted by custodial staff during certain hours when he reserved the study room could have helped to avoid a critical negative experience for him. Instead, he was apathetically interrupted and ejected in the midst of his work. Large workloads on custodial staff in combination with busy 24-hour building operations can cause logistical problems in keeping high-demand spaces clean, but there are certainly solutions that don't involve confrontation between stressed students and over-worked employees.

Likewise, spaces with names or labels that don't help students understand the purpose of the space and their relationship to that space only served to increase students' confusion and uncertainty about belonging. For example, the space named "Honors Collegium" in the student union caused Beatrice and Rain confusion and doubts about whether they might belong in that space. Similarly, signage or other means of communication indicating the availability of unoccupied classrooms as study space could have relieved multiple participants' anxiety and perhaps even signaled that the institution cares about students having productive study spaces.

Scholarly Gravitas

In most of the research outlined in chapter 2 that reported that campus library spaces play a part in student success, the contribution of the built environment (the architecture and space design) to student success cannot be separated from the people within those environments. Yet two of the studies attributed at least some of their

participants' preferences for the library as a study space to the built environment itself. Foster (2013) described this as "scholarly gravitas," or a serious, scholarly atmosphere among the book stacks that her participants found desirable (p. 115). Neurohr and Bailey (2017) reported the library in their study was perceived by their participants "as a place of enduring academic knowledge that is signaled through the historical architecture and grandeur of design," (p. 171). The idea of the library being a unique scholarly built environment did not surface in the present study.

While some participants in this study had a strong attraction to the campus library as their choice destination for study space, none of them attributed this to anything that is unique to a library. All of their explanations about the library as a favorite study spot circled around aspects that could be found in any campus building and in fact, some of the participants found academic sociality in study spaces outside of the library. Tanner found it in the engineering study space. Eliza found it in the study room in her residence hall.

However, the library in this study was of a characteristic mid-century brutalist design which emphasized stark functionality. There was no grand reading room typically associated with library grandeur. While the majority of spaces in this library were relatively inviting and offered a great variety of seating, it would be accurate to characterize this library as more utilitarian than aesthetically grandiose or even scholarly. Furthermore, the primary areas containing unique library scenery – books, were some of the least attractive and inviting spaces in the building. Perhaps libraries with more monumental and palatial designs would inspire studiousness in a way the library in the

present study could not. What is clear is that students don't study where they feel they

don't belong, no matter what the architecture or interior design offers.

Studying Wrong or Imposter Syndrome

It should not be surprising that peers play an important role in the belonging-

related informal learning space experiences of the college students. Social adjustment is

paramount in the high school to college transition (Chickering & Reisser, 1993).

However, the discovery that participants had a fear of being judged by their peers as

"studying wrong," was a surprise. Participants' indicated that they felt judged and

intimidated because they were inexperienced and did not know the appropriate

procedures and tactics for studying or for finding and using specific study spaces. While

there certainly are more and less effective methods for studying, and research has

indicated that some minoritized student populations are disadvantaged compared to their

privileged peers in knowing the more effective methods when they enter college

(Horowitz, 2019), it seems highly unlikely that other students would be able to assess this

knowledge simply by observing anyone in study space.

Is it possible that at least some of the fear of "studying wrong" is due to imposter

syndrome? Lauren said, "They know I'm not supposed to be here. I don't know what I

am doing." Despite the fact that these students were accepted to the university under the

same criteria as everyone else, Lauren and others expressed anxiety about being found

out that they don't really know the proper procedures and protocols. Perhaps anxiety

related to studying correctly and studying in the most appropriate space is exacerbated for

minoritized students who may lack the confidence and certainty that they belong in college in the first place, especially at a traditional predominantly White institution.

Study with Me and Space Exploration

If the findings of this research are not convincing that studying with peers is of critical importance to many college students, then consider that some who study alone are now using social media to proxy peer motivation. Last summer, the *Wall Street Journal* reported that, "In the U.S., views of so-called study-with-me videos tripled in 2017 from 2016," (Potkewitz, 2018, p. A1). These YouTube videos, as shown in Figure 2, can have millions of views and the people who create them can have hundreds of thousands of followers. Ranging from a few minutes to multiple hours, the videos feature a person quietly going about their academic work. "These study videos aren't tutorials. Their stars sit at their desks, sometimes without saying a word. And they aren't amateur study hour, either: many of the videos feature high production values, tight editing and multiple camera angles" (Potkewitz, 2018, p. A1).

Even if YouTube study mates can inspirationally motivate students to stay on task, it is highly unlikely they are contributing to a student's sense of belonging on a college campus. Furthermore, many of the participants in this study indicated that competitive anxiety or fear of being judged a slacker by their peers kept them motivated to be productive during study time. It is unlikely a recorded study mate would motivate in that way. Perhaps YouTube study peers are useful for students in online programs, but universities touting residential college experiences should strive for students to have authentic study-along motivation.
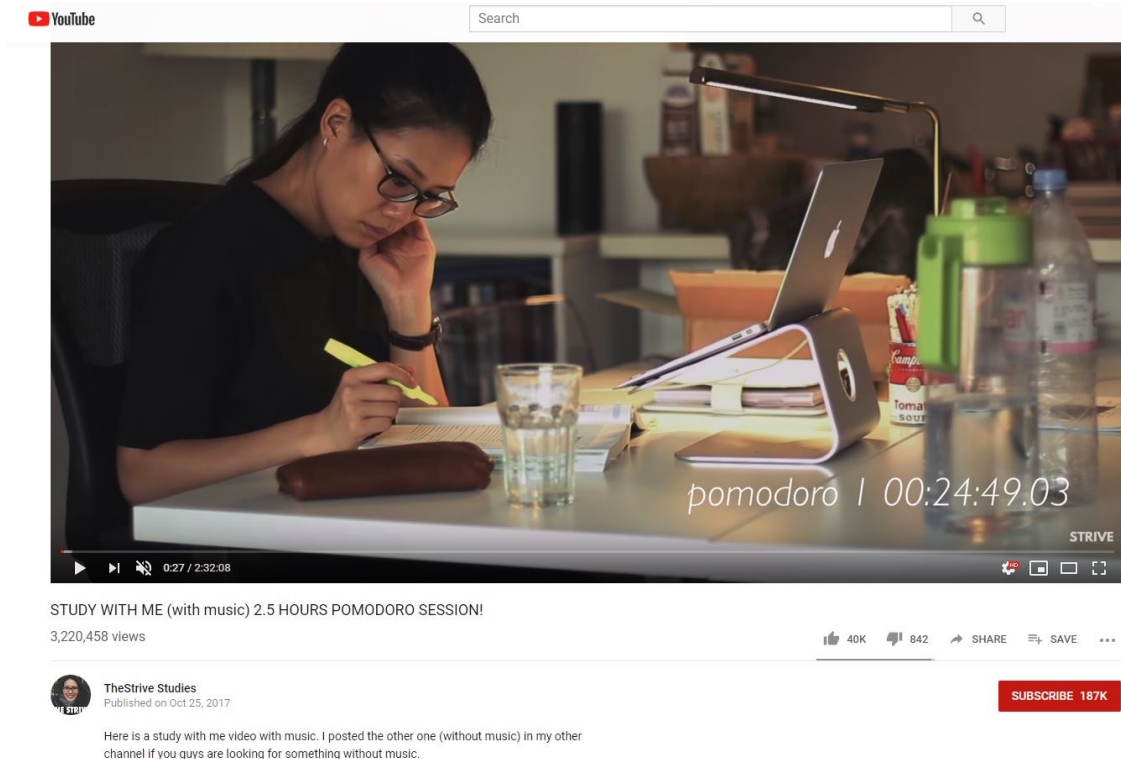
Figure 4. A screen capture of a popular "STUDY WITH ME" YouTube video. As of August 2019, this single video has been viewed over 3 million times (TheStrive Studies, 2017).

Like the limitations of YouTube study mates, students who feel they don't have options to study beyond their residence hall rooms also don't have the opportunity for that peer motivation. Some of the older participants in this study spoke about why they thought it was advantageous to go beyond their room to study. Veronica explained,

> First semester of my freshman year, I really stayed in my dorm and you know, it wasn't necessarily a bad decision but I have now found that I actually study better when I'm with someone else who is studying because they're studying so I feel like I have to study.

Similarly, Pam who was a junior, related that she had some advice for her first-year self, in retrospect.

I would have preferred myself to know that it's okay to go to other places and just try to find a ... not necessarily more convenient ... but just like a better place to study because then at the end of the day it would be me sitting in my dorm room pretty much from 5:30 to like, oh - to bed. Which then kind of made me feel uncomfortable because then I was like, "Well now I feel like I'm not doing anything else."

She believed she cut herself off and was less engaged in campus life by studying in her residence hall room almost exclusively her first two years of college.

Additionally, many of the study participants with non-conformist gender identities spoke of staying in their rooms to study and not actively exploring campus spaces. Unfortunately, this study demonstrated that wherever large numbers of students gather, including the study spaces in the library, some students face an increased chance of experiencing microaggressions or being harassed due to their minoritized identities. This resulted in these students avoiding study spaces and perhaps denied them the motivation and collegiality others are afforded by studying alongside their peers.

Most of these students also reported that they don't actively seek out alternative spaces. Walt, a junior, said he only explores spaces when he is forced to do so because his regular space is taken. Ash said, "I haven't at all explored around too much but I can't generally explore around too much in many facets of anything. So it's not a characteristic of me generally […] I'll just stick to what I know." Sage reported exploring very little her first year, but a little bit more in her second year, "because my room doesn't have quite the right setup all the time."

Many of the other participants in this study reported discovering study spaces through guidance from others. Friends, roommates, sorority sisters, classmates, a residence advisor, a professor, an orientation session, and student organizations were all mentioned by participants as catalysts for enabling study space exploration. These microsystems are extremely important to student navigation of campus study spaces. Unfortunately, students who have smaller numbers of influencers may not be receiving this guidance. The literature demonstrates that students' who struggle to develop relationships with others suffer from a lack sense of belonging (Soria & Stebleton, 2013). While studying is not commonly seen as an activity that is dependent on building relationships, perhaps it should be.

Disciplinary Identity, Majority Students, and Campus Party Culture

While there are benefits to carving out spaces for specific disciplines on college campus, as it can help students find their peers and increase some sense of belonging within their major, it also can exacerbate problems that surface when majority students gather together simply by providing a space for that. This may be particularly true for majors with large-enrollments or within disciplines where the gender difference is high.

The large enrollment majors at predominantly White institutions will inevitably be predominantly White and may then tend to embody the persona of the PWI, especially to minoritized students. The Panhellenic party culture described by some of the participants in this study was directly associated with large enrollment majors like nursing and business and this association carried over into the spaces where these

students gathered, be it the academic buildings for health sciences and business, or the spaces the "Greek" students occupied in the library.

Gendered study spaces also surfaced across disciplinary lines and can be seen in a similar light. The engineering study space was a positive place for Tanner, a Black male studying engineering, but nearly all of the women who had tried to use that space, reported a lower sense of belonging. The challenge is then to somehow create environments that allow students to develop an in-group attachment and sense of belonging without at the same time othering the out-group.

Campus Climate

Even though participants reported an obvious lack of compositional diversity that impacted their feelings of belonging in study spaces and a few even reported experiences of hostility from other students, the participants in this study generally responded positively to interview questions about the overall campus climate. Most believed the university was appropriately trying to create welcoming and inclusive environments, including study spaces. Even students who reported some of the most difficulty in finding a study space where they felt they belonged generally placed the blame on individuals and not on larger campus cultural issues. The participants who had experienced problems with students associated with Greek life discussed how they navigated study life to avoid them and felt relatively successful with their tactics. Many also reported their appreciation for the presence of authority in spaces that might mitigate some of the unwanted behaviors associated with larger groups of these students gathered in study space.

Hurtado et al. (1998) explain campus climate as being composed of multiple dimension, of which compositional diversity is only one. Other dimensions that comprise the larger concept of campus climate did not surface in this study. For example, institutional policies and historical practices beyond those associated with specific disciplines were not mentioned by participants. Despite the prevalence of the campus party culture theme in the participants' narratives, the participants did not associate the university itself with this culture. Even when asked if there were other things the university administration should be doing to ensure students have a place to study where they feel like they completely belong, participants never mentioned anything related to institutional responsibility for the party culture. These results generally support the assertion of Hurtado et al. (2012) that the presence of sense of belonging may be a feature of "campus subenvironments or 'safe spaces' that foster community regardless of the overall campus climate for diversity," (p.86).

Recommendations for Further Research

In addition to the topics articulated below, scholars interested in minoritized students' sense of belonging and navigation of study spaces could easily and usefully expand on the research presented here by focusing on the experiences of any specific identity. Delving deeper into the unique challenges and successes of any student population from first-generation students to students with visible an invisible disabilities would provide a richer understanding of the student experience. Examining students' study space navigation and their sense of belonging as they develop and mature through

college, as well as looking closer at disciplinary associations could lead to information to help institutions improve practices and ultimately, student success.

How to study. Given the reports from students in this study about their worries concerns understanding how and where to study, researchers interested in college student adjustment should examine whether these fears about being exposed as not knowing how to study are heightened for any categories of students. If this is the case, researchers should delve into the source of those fears and even more importantly, look to determine how students mitigate and conquer those fears. If fear of exposure as a person who doesn't know how to study is something that is less impactful for privileged students at predominantly White institutions, this research could lead to significant programming and strategies to benefit minoritized students at these institutions that especially struggle with minoritized student success.

Where to study. Having a better understanding of the most effective methods in helping students to explore campus study spaces early in their transition to college, as well as understanding how transfer or commuter students effectively tackle this knowledge would help practitioners focus programming and educational efforts. Participants in this study also demonstrated that their study space needs and experiences changed over time, especially as their identity matured and they developed an affinity with their discipline. As underclassmen, some of them studied alone in their rooms because of fear and avoidance. They later acknowledged this wasn't the best practice for either their social or academic growth. Understanding more about how students work through that understanding would inform institutional practices and help students to

become effective self-regulated learners who know how to create the appropriate study environment for their own success.

Psychological dimensions of built environments. Future researchers interested in exploring the role of built environments in motivating students to productive study should carefully examine library spaces reported by students to be architecturally inspirational. What about the students who select not to study there? Have they felt unwelcomed and now forego any inspirational advantage others reap from scholarly gravitas? On the other hand, perhaps grand architecture is not equally inspirational to all. The grand reading room may evoke scholarly motivation to one student and yet evoke a sense of imperialistic oppression to another. The biggest mistake is to assume it affects all students the same and that is it divorced from the actors within it.

Scholars interested in examining the relationship between space design and student success should also consider psychological dimensions such as place attachment (Wallin & Diller, 2019) in connection with students' social identities. Do majority students have a sense of belonging in study spaces that stems from what Sullivan (2007) calls "ontological expansiveness," or "the habit of White people to act and think as if all spaces—whether geographical, psychical, linguistic, economic, spiritual, bodily, or otherwise—are or should be available for them to move in and out of as they wish," (p. 233) whereas minoritized students suffer from imposter syndrome and need permission and guidance from others to feel confident exploring campus spaces? Do majority students have a psychological advantage that allows them to navigate spaces like the Honors Collegium and empty classrooms without belonging-related anxiety? If so, what

can institutions learn from that mindset to improve experiences and eliminate barriers for students who suffer from belonging uncertainty or imposter syndrome? When students don't suffer from these anxieties, how might we effectively capitalize on their comfort levels to improve the experiences of those who do?

Recent research on the relationship between the architectural design of residence halls on student outcomes offers yet another aspect to probe in relation to the built environment. Using data from across multiple years, Brown, Volk, and Spratto (2019), found that students who live in the corridor residence halls have higher GPAs than those who live in the more isolating apartment-style residence halls. They attributed this to the socializing nature of the corridor residences and argued that this architectural design provided students more of an opportunity for homophily, which is the "phenomenon whereby individuals tend to form friendships with persons like themselves," (Brown et al., 2019, p. 269). Friends were a core influence and an important component to the study space experiences of participants in this study. They helped with space navigation and study motivation. Are there ways study spaces on campus can be thoughtfully designed to increase homophily opportunity? What does homophily opportunity mean for serious academic students like Sandy and Tanner, who have friends to study with and friends to socialize with?

Gender identities and the disciplines. Researchers interested in the role gender plays in disciplinary choice and success may wish to further examine how students with different genders experience spaces dominated by an over-representation of one gender. For example, do successful female engineers at the institution in the present study spend

time in the male-dominated engineering study space? What techniques and/or

alternatives do they use to navigate study spaces successfully? Are there ways

disciplines wishing to attract more diverse genders can promote study space integration

and use that to mitigate the detrimental effects of over-representation of one gender?

Recommendations for Practitioners

     Signage. Campus facilities staff and building operations managers in libraries

and student unions should carefully consider more than simple wayfinding in the

development of building signage. An examination of whether students can easily

understand the availability and purpose of spaces and expectations of behaviors in spaces,

such as noise levels, rules and procedures, can help relieve student anxiety, help them

understand their options, and help them to navigate to places where they feel they belong.

Furthermore, devising procedures and workflows to minimize disruptions to students

when they are studying demonstrates respect and support for their purpose and existence

on campus and should not be optional. Even in high-demand student spaces like 24-hour

study rooms, cleaning and maintenance can be scheduled and reservation systems can

inform students of these times.

     Multicultural competencies. Given the valuable space academic libraries

typically occupy on university campuses, along with their disciplinary neutral

perspective, librarians should continue to play an active role in the promotion of learning

outcomes intended to increase students' multicultural competencies. Exhibits and

programming can expose students to study spaces at the same time as educating and

demonstrating value and respect for differences. This may not only help educate all students, but also help minoritized students feel positive and safe about library spaces.

Study habits and space exploration. Student affairs personnel, academic advisors, and librarians responsible for first-year and transfer student success programming should work together to provide robust educational opportunities to students new to the campus environment on developing study habits. These educational opportunities need to do more than review the typical top study tips, such as recommendations to attend class regularly and engage in note-taking during lectures, practice good time-management and organizational skills, but also help students understand that with practice, they will become more efficient and effective studiers. Students who feel a belonging uncertainty because of fear that they lack key knowledge about how to study need reassurance that all college students undergo a process of self-discovery related to what makes successful study habits and spaces for them.

Guidance to new students on campus about developing good study habits occasionally do mention that students should consider their study surroundings and study partners ("10 ways to improve your study habits," 2017). A good example is Lumen Learning's open course on college success, which includes a lesson on the impact of students' physical environment on time management and goal setting (Bruce, n.d.). It includes a video recommending students explore the variety of study spaces available in their library to find what is right for their personal needs. The lesson even asks students to complete an exercise assessing their own study space that includes determining whether their study partners are helpful or distracting.

It is important for academic librarians at predominantly White institutions to be cognizant of the effect of open study spaces where large groups of students gather. Their behaviors and interactions with others lead some individuals with minoritized identities to avoid those spaces due to fear, which should be unacceptable. Furthermore, any large group of "less serious" students can also impact students seeking more studious environments. Offering students safe, isolated environments as well as monitoring spaces with a visible presence may help to control large, open spaces.

A few universities have also leveraged technology to help students find study spaces across campus. Smith College, University of Minnesota, University of Washington, and Harvard have websites or mobile phone applications allowing students to search, sort, map, and see pictures of study spaces on their campuses (Fondren, 2017; Hickey, 2012; "Smithscape," 2017). These may be useful tools for new students unsure about exploring on campus. If a space is listed on the "app," students may feel more confident probing to see if it is the right spot for them.

Technological assistance, like the space finding "apps," and curricular additions are relatively easy ways institutions can provide guidance to students. Given participants' dependence on their campus microsystems for study space exploration, student affairs personnel, orientation leaders, and librarians should actively develop additional programming and opportunities for students to learn about and physically explore campus study spaces with their peers or via other campus connections like learning community leaders, residence advisors, and even instructors.

Relationship between printed text and scholarly inspiration. It is interesting for librarians to consider whether the strong decline in the use of print has already or will have any impact on the idea of inspirational study space for students. Foster (2013) specified that the key component of the scholarly gravitas reported by her participants was being close to journals and books, even though they weren't using them. As time progresses, our students have less and less experience with print and we remove more and more print to create more space for people and devices. As knowledge is increasingly disassociated with paper and can no longer be bound, held, and stacked, will libraries as places lose that specialness that put them in the center of campus to begin with?

Of course for librarians, this gets at the heart of our fears about the future of libraries. It is uncomfortable to think about being an academic librarian without a physical space called a library. We also want the future of the academic library to be more than a grandiose study hall. Academic librarians in the luxurious position of being able to be both practitioners and researchers should leverage their living laboratories to explore and assess how to facilitate students sense of belonging in their spaces and reduce the many barriers that impede students' sense of belonging.

Personal Reflection

During the past two years preparing for, conducting, and analyzing this research, my personal practice as a librarian has been altered in numerous ways. I no longer walk through a study space filled with students without thinking about how they are or aren't interacting with each other and whether or how that interaction is helping or hindering

their sense of belonging. When I interact with campus tour guides or other students, I ask where is their favorite place to study and what makes it special. When I consider the strengths of the university where I work, I wonder how I can contribute to making those strengths apply to all of the students who attend and not just to those who grew up confident that this institution, or one very similar to it, was in their future.

Because of this research, I have begun a new research partnership with librarians who examine place attachment and cognitive architecture theory using unique qualitative methods, like walking interviews, to gather student's experiences and perspectives about academic study spaces. The interviews with my participants also helped me to appreciate how much is missing when the perspectives of some identities are marginalized. This understanding enabled me the courage to reach out and establish a new relationship with a librarian of color who also shares a research interest in how to make positive spaces for minoritized students at PWIs.

Finally, many of the study participants expressed their sincere interest in this research and told me how important study spaces were to their student success. Some of them told me they thought my research was interesting and important. They also told me that they thought they could contribute and make a difference. Brock said, "I feel like I want to make my voice heard […] where I study is important to me […] better study space is important to me so I'd like to help that research." Sandy had a similar sentiment,

> This was a study that it was kind of personal in a way - that I am very attentive to the space where I study. I actually wanted to contribute something because study spaces for me, I take them so, so seriously. Who will I go to study, what it shows,

and I told you all the criteria about it. This was a study that I'm like, "Oh my god, I can share this. I really have valuable information that I think could be useful for the study."

Sage also had a personal contribution she wanted to make to the research.

A year and a half ago, it was still this, but I would not have admitted it, because I was still a little too scared. But right now, I feel like my point of view is important, especially in this political climate. Trying to get Trans ideas out there. Yes, I'm terrified of doing it, but I feel like it needs to be there. I have a hard time with the self-confidence and feeling like my voice matters, and that my creative ideas can potentially be useful. But with the help of my boyfriend, I feel like those things are starting to become important. People ignore Trans people, so if I can put my data into a survey, even if it seems like an outlier or a skew point, it's still there, as opposed to being invisible. I'm kind of getting tired of the invisibility.

It is motivating and inspirational to have students putting that kind of meaning into my research. Their enthusiasm and willingness to share their authentic stories deserve continued attention and seriousness.

Conclusion

In consideration of study space, college peers are central to the idea of "ambient sociality," that is, college students report being motivated to study and do academic work by being around others with the same intent (Crook & Mitchell, 2012, p. 136). The participants' experiences as reported in this study certainly support the notion that peers play a compelling role in the ways students navigate campus study spaces, both positively

and negatively. The recommendations for practitioners and researchers in this chapter ask them to incorporate a new understanding that students' approaches to study spaces vary and that some of this variance may be due to their minoritized identities.

Stephens, et al. (2012) explained how the academic performance of minoritized college students is affected by their "chronic state of belonging uncertainty" (pp. 1190-1191). The participants in this study shared their personal thoughts and experiences to explain how and why belonging uncertainty impacts their ability to accomplish their academic goals outside of the classroom. There is an obvious need for PWIs to not only create a great variety of spaces in the library and elsewhere, but also to help students find the spaces that work for their specific needs. Students spend significant amounts of time in these spaces and view them as critical components of their success.

References

10 ways to improve your study habits. (2017, November). Retrieved August 23, 2019,

    from Western Governors University Student Success Blog website:

    https://www.wgu.edu/blog/improve-online-study-environment1712.html

Allen, J., Robbins, S. B., Casillas, A., & Oh, I. S. (2008). Third-year college retention

    and transfer: Effects of academic performance, motivation, and social

    connectedness. *Research in Higher Education*, (7), 647.

Allen, K.-A., Vella-Brodrick, D., & Waters, L. (2016). Fostering school belonging in

    secondary schools using a socio-ecological framework. *The Educational and

    Developmental Psychologist*, *33*(1), 97–121. https://doi.org/10.1017/edp.2016.5

Anfara, V. A., Brown, K. M., & Mangione, T. L. (2002). Qualitative analysis on stage:

    Making the research process more public. *Educational Researcher*, *31*(7), 28–38.

Applegate, R. (2009). The library is for studying. *The Journal of Academic

    Librarianship*, *35*(4), 341–346. https://doi.org/10.1016/j.acalib.2009.04.004

Association of Research Libraries. (n.d.). What ARL members are doing to advance

    diversity, inclusion, and equality. Retrieved May 26, 2018, from Association of

    Research Libraries website: http://www.arl.org/component/content/article/6/3940

Banush, D. N. (2016, March 1). Advancing diversity, inclusion, and equality: Tulane

    University. Retrieved May 26, 2018, from Association of Research Libraries

    website: http://www.arl.org/component/content/article/6/3951

Barajas, H. L., & Ronnkvist, A. (2007). Racialized space: Framing Latino and Latina

    experience in public schools. *Teachers College Record*, *109*(6), 1517–1538.

Beatty, S. (2016). Students' perception of informal learning spaces in an academic library; an investigation into the relationship between learning behaviours and space design. *Proceedings of the 37th IATUL Conference*. Presented at the Dalhousie University Libraries in Halifax, Nova Scotia. Retrieved from http://docs.lib.purdue.edu/iatul/2016/spaces/1

Bennett, S. (2005). Righting the balance. In *Library as place: Rethinking roles, rethinking space* (pp. 10–24). Washington, D.C.: Council on Library and Information Resources.

Bennett, S. (2006). The choice for learning. *The Journal of Academic Librarianship*, *32*, 3–13. https://doi.org/10.1016/j.acalib.2005.10.013

Bennett, S. (2007). First questions for designing higher education learning spaces. *The Journal of Academic Librarianship*, *33*(1), 14–26. https://doi.org/10.1016/j.acalib.2006.08.015

Bennett, S. (2011). Learning behaviors and learning spaces. *Portal: Libraries and the Academy*, *11*(3), 765–789. https://doi.org/10.1353/pla.2011.0033

Blackburn, J. (2016, August). *Collaborating for a successful masterplan: Art and/or science*. Presented at the IFLA Library Buildings & Equipment Satellite Meetings, Illinois Institute of Technology, Chicago, IL. Retrieved from https://www.slideshare.net/DianeKoen/blackburn-collaborating-for-a-successful-masterplan-art-andor-science-ifla-lbes-2016

Bollen, K. A., & Hoyle, R. H. (1990). Perceived cohesion: A conceptual and empirical examination. *Social Forces*, (2), 479.

Booth, C. (2018, April). *Libraries, information equity, and economic justice*. Presented at the Coalition for Networked Information 2018 Spring Membership Meeting, San Diego, CA. Retrieved from https://www.youtube.com/watch?v=K75Y3j3PD3g

Bowen, W. G., & Bok, D. C. (1998). *The shape of the river: Long-term consequences of considering race in college and university admissions*. Princeton, N.J: Princeton University Press.

Bowman, N. A., & Brandenberger, J. W. (2012). Experiencing the unexpected: Toward a model of college diversity experiences and attitude change. *The Review of Higher Education*, *35*(2), 179–205. https://doi.org/10.1353/rhe.2012.0016

Boys, J. (2015). *Building better universities: Strategies, spaces, technologies*. New York, NY: Routledge.

Boys, J., & Hazlett, D. (2014). The spaces of relational learning and their impact on student engagement. In L. Scott-Webber, J. Branch, P. Bartholomew, & C. Nygaard (Eds.), *Learning space design in higher education* (pp. 37–51). Faringdon, Oxfordshire: Libri Publishing.

Boys, J., Melhuish, C., & Wilson, A. (2014). *Developing research methods for analyzing learning spaces that can inform institutional missions of learning and engagement*. Society for College and University Planning.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, Mass: Harvard University Press.

Bronfenbrenner, U. (1993). The ecology of cognitive development: Research models and fugitive findings. In R. H. Wozniak & K. W. Fischer (Eds.), *Development in*

context: Acting and thinking in specific environments (pp. 3–44). Hillsdale, NJ: Erlbaum.

Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development*. Thousand Oaks, CA: Sage.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In R. M. Lerner (Ed.), *Handbook of child psychology* (6th ed., Vol. 1, pp. 793–828). Hoboken, N.J.: John Wiley & Sons, Inc.

Brook, F., Ellenwood, D., & Lazzaro, A. E. (2016). In pursuit of antiracist social justice: Denaturalizing Whiteness in the academic library. *Library Trends*, *64*(2), 246–284. https://doi.org/10.1353/lib.2015.0048

Brown, J., Volk, F., & Spratto, E. M. (2019). The hidden structure: The influence of residence hall design on academic outcomes. *Journal of Student Affairs Research and Practice*, *56*(3), 267–283. https://doi.org/10.1080/19496591.2019.1611590

Brown-Sica, M. S. (2012). Library spaces for urban, diverse commuter students: A participatory action research project. *College & Research Libraries*, *73*(3), 217–231. https://doi.org/10.5860/crl-221

Bruce, L. (n.d.). Your Physical Environment: College Success. Retrieved August 24, 2019, from Lumen Learning website: https://courses.lumenlearning.com/lumencollegesuccessxtraining2/chapter/your-physical-environment/

Cabrera, N. L., Franklin, J. D., & Watson, J. S. (2017). *Whiteness in higher education: The invisible missing link in diversity and racial analyses*. Hoboken, NJ: Wiley Subscription Services, Inc.

Cabrera, N. L., Watson, J. S., & Franklin, J. D. (2016). Racial arrested development: A critical Whiteness analysis of the campus ecology. *Journal of College Student Development*, *57*(2), 119–134. https://doi.org/10.1353/csd.2016.0014

Carnevale, A. P., & Strohl, J. (2013). *Separate & unequal: How higher education reinforces the intergenerational reproduction of White racial privilege*. Retrieved from Center on Education and the Workforce, Georgetown Public Policy Institute website: https://cew.georgetown.edu/cew-reports/separate-unequal/

Caron, C. (2018, May 9). A Black Yale student was napping, and a White student called the police. *The New York Times*. Retrieved from https://www.nytimes.com/2018/05/09/nyregion/yale-black-student-nap.html

Cha, S. H., & Kim, T. W. (2015). What matters for students' use of physical library space? *The Journal of Academic Librarianship*, *41*, 274–279. https://doi.org/10.1016/j.acalib.2015.03.014

Chickering, A. W., & Reisser, L. (1993). *Education and identity*. San Francisco, CA: Jossey-Bass Publishers.

Chun, E., & Evans, A. (2016). Rethinking cultural competence in higher education: An ecological framework for student development. *ASHE Higher Education Report*, *42*(4), 7–162. https://doi.org/10.1002/aehe.20102

Colby, S. L., & Ortman, J. M. (2015). *Projections of the size and composition of the U.S. population: 2014 to 2060* (No. P25-1143). Retrieved from U.S. Census Bureau website:

https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf

Cole, D. (2007). Do interracial interactions matter? An examination of student-faculty contact and intellectual self-concept. *Journal of Higher Education*, (3), 249.

Cox, A. M. (2017). Space and embodiment in informal learning. *Higher Education*, 1–14. https://doi.org/10.1007/s10734-017-0186-1

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing amoung five approaches* (3rd ed.). Los Angeles, CA: Sage.

Crook, C., & Mitchell, G. (2012). Ambience in social learning: Student engagement with new designs for learning spaces. *Cambridge Journal of Education*, *42*(2), 121–139. https://doi.org/10.1080/0305764X.2012.676627

Cunningham, M., & Walton, G. (2016). Informal learning spaces (ILS) in university libraries and their campuses: A Loughborough University case study. *New Library World; London*, *117*(1/2), 49–62.

Damschroder, M. R. (2015). *The essential value of LGBT resource centers* (Ph.D., Illinois State University). Retrieved from https://ir.library.illinoisstate.edu/etd/446/

DeClercq, C. P., & Cranz, G. (2014). Moving beyond seating-centered learning environments: Opportunities and challenges identified in a POE of a campus

library. *The Journal of Academic Librarianship*, *40*, 574–584.

https://doi.org/10.1016/j.acalib.2014.08.005

Dempsey, S. E., Parker, P. S., & Krone, K. J. (2011). Navigating socio-spatial difference, constructing counter-space: Insights from transnational feminist praxis. *Journal of International and Intercultural Communication*, *4*(3), 201–220.

https://doi.org/10.1080/17513057.2011.569973

Dodd, J., & Lackeyram, D. (2017). Creating a learning culture for student-athletes. In S. E. Montgomery (Ed.), *Assessing library space for learning* (pp. 107–121). Lanham, MD: Rowman & Littlefield.

Droll, L., & Sullivan, M. (2016, July 1). Advancing diversity, inclusion, and equality: North Carolina State University. Retrieved May 26, 2018, from Association of Research Libraries website: http://www.arl.org/component/content/article/6/4060

Dugdale, S. (2009, April). Space strategies for the new learning landscape. *EDUCAUSE Review*, *44*(2), 51–63.

Eckel, P. D., & Kezar, A. J. (2012). *Taking the reins: Institutional transformation in higher education*. Westport, CT: Praeger Publishers.

Editorial Board. (2017, February 15). USG right to provide feminine hygiene products for free. *The Daily Campus*. Retrieved from http://dailycampus.com/stories/2017/2/16/editorial-usg-right-to-provide-feminine-hygiene-products-for-free

Elteto, S., Jackson, R. M., & Lim, A. (2008). Is the library a "welcoming space"?: An urban academic library and diverse student experiences. *Portal: Libraries and the Academy*, *8*(3), 325–337. https://doi.org/10.1353/pla.0.0008

Engberg, M. E. (2004). Improving intergroup relations in higher education: A critical examination of the influence of educational interventions on racial bias. *Review of Educational Research*, (4), 473–524.

Evans, N. J., Forney, D. S., Guido, F. M., Patton, L. D., & Renn, K. A. (2010). *Student development in college: Theory, research, and practice* (2nd ed.). San Francisco, CA: Jossey-Bass.

Feagin, J. R., Vera, H., & Imani, N. (1996). *The agony of education: Black students at White colleges and universities*. New York: Routledge.

Fister, B. (2016). Repositioning library space. In S. Bell, L. Dempsey, & B. Fister, *New Roles for the Road Ahead: Essays Commissioned for the ACRL 75th Anniversary*. Retrieved from http://www.ala.org/acrl/sites/ala.org.acrl/files/content/publications/whitepapers/new_roles_75th.pdf

Flowers, L. A. (2004). Examining the effects of student involvement on African American college student development. *Journal of College Student Development*, *45*(6), 633–654. https://doi.org/10.1353/csd.2004.0067

Fondren, P. (2017, October 17). New site aims to help students find study spots. *The Minnesota Daily*. Retrieved from https://www.mndaily.com/article/2017/10/new-site-aims-to-help-students-find-study-spots

Foster, N. F. (Ed.). (2013). *Studying students: A second look*. Chicago, IL: American Library Association.

Foster, N. F., & Gibbons, S. (Eds.). (2007). *Studying students: The undergraduate research project at the University of Rochester*. Chicago, IL: Association of College & Research Libraries.

Fox, B.-L. (2004). Spend billions and they will come. *Library Journal*, *129*(20), 48–61.

Fox, B.-L. (2017, November 28). Academic library data: Year in architecture 2017. *Library Journal*. Retrieved from https://lj.libraryjournal.com/2017/11/buildings/year-in-architecture-2017-academic-library-data/

Fox, R., & Doshi, A. (2013). Longitudinal assessment of "user-driven" library commons spaces. *Evidence Based Library and Information Practice*, *8*(2), 85–95.

Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of belonging in college freshmen at the classroom and campus levels. *The Journal of Experimental Education*, *75*(3), 203–220. https://doi.org/10.3200/JEXE.75.3.203-220

Garcia, C. E. (2017). *Latinx college student sense of belonging: The role of campus subcultures* (Ph.D., University of Nebraska - Lincoln). Retrieved from https://digitalcommons.unl.edu/cehsedaddiss/279

Garvey, J. C., Sanders, L. A., & Flint, M. A. (2017). Generational perceptions of campus climate among LGBTQ undergraduates. *Journal of College Student Development*, *58*(6), 795–817. https://doi.org/10.1353/csd.2017.0065

Glass, C. R., & Westmont, C. M. (2014). Comparative effects of belongingness on the academic success and cross-cultural interactions of domestic and international students. *International Journal of Intercultural Relations*, *38*, 106–119. https://doi.org/10.1016/j.ijintrel.2013.04.004

Glass, K., Glass, C. R., & Lynch, R. J. (2016). Student engagement and affordances for interaction with diverse peers: A network analysis. *Journal of Diversity in Higher Education*, *9*, 170–187. https://doi.org/10.1037/a0039726

Goodman, D. J. (2011). *Promoting diversity and social justice: Educating people from privileged groups* (2nd ed). New York: Routledge.

Goodman, K. M., & Bowman, N. A. (2014). Making diversity work to improve college student learning. *New Directions for Student Services*, *2014*(147), 37–48.

Grimes, P. W., & Charters, M. F. (2000). Library use and the undergraduate economics student. *College Student Journal*, *34*(4), 557.

Gurin, P., Dey, E. L., Hurtado, S., & Gurin, G. (2002). Diversity and higher education: Theory and impact on educational outcomes. *Harvard Educational Review*, *72*(3), 330–366.

Gutierrez, M. (2011, March 17). Fair Oaks woman threatened over anti-Asian video—UCLA student's dad says she had planned to start blog. *The Sacramento Bee*, p. B1.

Gutierrez, V., Mendenhall, R., Harwood, S. A., Huntt, M. B., & Lewis, J. (2010, August 13). *Environmental racial microaggressions: The ecology of student spaces at a*

predominantly White university. Presented at the American Sociological Association Annual Meeting, Atlanta, GA.

Gyure, D. A. (2008). The heart of the university: A history of the library as an architectural symbol of American higher education. *Winterthur Portfolio*, *42*(2/3), 107–132. https://doi.org/10.1086/589593

Harper, S. R. (2012). Race without racism: How higher education researchers minimize racist institutional norms. *The Review of Higher Education*, *36*(1), 9–29. https://doi.org/10.1353/rhe.2012.0047

Harper, S. R., & Hurtado, S. (2007). Nine themes in campus racial climates and implications for institutional transformation. *New Directions for Student Services*, *2007*(120), 7–24. https://doi.org/10.1002/ss.254

Harrison, A., & Hutton, L. (2014). *Design for the changing educational landscape: Space, place and the future of learning*. New York: Routledge.

Harrop, D., & Turpin, B. (2013). A study exploring learners' informal learning space behaviors, attitudes, and preferences. *New Review of Academic Librarianship*, *19*(1), 58–77. https://doi.org/10.1080/13614533.2013.740961

Harwood, S. A., Huntt, M. B., Mendenhall, R., & Lewis, J. A. (2012). Racial microaggressions in the residence halls: Experiences of students of color at a predominantly White university. *Journal of Diversity in Higher Education*, *5*, 159–173. https://doi.org/10.1037/a0028956

Hatch, J. A. (2002). *Doing qualitative research in education settings*. Albany, N.Y.: State University of New York Press.

Hausmann, L. R., Schofield, J. W., & Woods, R. L. (2007). Sense of belonging as a predictor of intentions to persist among African American and White first-year college students. *Research in Higher Education*, *48*(7), 803–839.

Hausmann, L. R., Ye, F., Schofield, J. W., & Woods, R. L. (2009). Sense of belonging and persistence in White and African American first-year students. *Research in Higher Education*, *50*(7), 649–669.

Head, A. J. (2016). *Planning and designing academic library learning spaces: Expert perspectives of architects, librarians, and library consultants* (p. 37). Retrieved from Project Information Literacy website: http://www.projectinfolit.org/uploads/2/7/5/4/27541717/pil_libspace_report_12_6_16.pdf

Head, A. J., & Eisenberg, M. B. (2011). *Balancing act: How college students manage technology while in the library during crunch time*. Retrieved from Project Information Literacy website: https://www.projectinfolit.org/uploads/2/7/5/4/27541717/pil_fall2011a_techstudy_fullreport1.2-1.pdf

Hickey, H. (2012, October 24). SpaceScout app hunts for study spaces, and MyUW goes mobile for students. *UW News*. Retrieved from https://www.washington.edu/news/2012/10/24/spacescout-app-hunts-for-study-spaces-and-myuw-goes-mobile-for-students/

Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating "sense of belonging" in first-year college students. *Journal of College Student Retention*, *4*(3), 227–256.

Hong, J. S., Woodford, M. R., Long, L. D., & Renn, K. A. (2016). Ecological covariates of subtle and blatant heterosexist discrimination among LGBQ college students. *Journal of Youth and Adolescence*, *45*(1), 117–131.

Horowitz, G. (2019). *Teaching STEM to First Generation College Students: A Guidebook for Faculty & Future Faculty*. Charlotte, NC: Information Age Publishing, Inc.

Hotchkins, B. K., & Dancy, T. E. (2017). A house is not a home: Black students' responses to racism in university residential halls. *Journal of College and University Student Housing*, *43*(3), 42–53.

Hurtado, S. (2001). Linking diversity and educational purpose: How diversity affects the classroom environment and student development. In G. Orfield, (Ed.), *Diversity challenged: Evidence on the impact of affirmative action* (pp. 187–203). Retrieved from https://eric.ed.gov/?id=ED456199

Hurtado, S. (2015). The transformative paradigm: Principles and challenges. In A. M. Martinez-Aleman, B. Pusser, & E. M. Benismon (Eds.), *Critical approaches to the study of higher education: A practical introduction* (pp. 285–307). Baltimore, MD: Johns Hopkins University Press.

Hurtado, S., Alvarez, C. L., Guillermo-Wann, C., Cuellar, M., & Arellano, L. (2012). A model for diverse learning environments: The scholarship on creating and assessing conditions for student success. In J. C. Smart & M. B. Paulsen (Eds.),

Higher Education: Handbook of Theory and Research (pp. 41–122). New York: Springer.

Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education*, (4), 324. https://doi.org/10.2307/2673270

Hurtado, S., Milem, J. F., Clayton-Pedersen, A. R., & Allen, W. R. (1998). Enhancing campus climates for racial/ethnic diversity: Educational policy and practice. *The Review of Higher Education*, *21*(3), 279–302. https://doi.org/10.1353/rhe.1998.0003

Ibarra, R. A. (2005). A place to belong: The library as prototype for context diversity. *Currents and Convergence: Navigating the Rivers of Change*, 3–23. Retrieved from https://news.ala.org/ala/acrl/acrlevents/ibarra05.pdf

Jamieson, P. (2003). Designing more effective on-campus teaching and learning spaces: A role for academic developers. *International Journal for Academic Development*, *8*(1–2), 119–133. https://doi.org/10.1080/1360144042000277991

Jamieson, P. (2009). The serious matter of informal learning: From the development of learning spaces to a broader understanding of the entire campus as a learning space. *Planning for Higher Education*, (2), 18.

Jamieson, P., Fisher, K., Gilding, T., Taylor, P. G., & Trevitt, A. C. F. (2000). Place and space in the design of new learning environments. *Higher Education Research and Development*, *19*(2), 221–236.

Johnson, D. R., Soldner, M., Leonard, J. B., Alvarez, P., Inkelas, K. K., Rowan-Kenyon, H. T., & Longerbeam, S. D. (2007). Examining sense of belonging among first-year undergraduates from different racial/ethnic groups. *Journal of College Student Development*, *48*(5), 525–542. https://doi.org/10.1353/csd.2007.0054

Johnson, K., & McCallister, K. (2015). Assessing the 24/5 library: A case study in data and perspectives. *Journal of Access Services*, *12*(3–4), 75–90. https://doi.org/10.1080/15367967.2015.1061942

Johnson, V. D. (2003). Cultural group perceptions of racial climates in residence halls. *NASPA Journal*, *41*(1), 114–134.

Johnson-Durgans, V. D. (1994). Perceptions of racial climates in residence halls between African-American and Euroamerican college students. *Journal of College Student Development*, *35*(4), 267–274.

Khoo, M. J., Rozaklis, L., Hall, C., & Kusunoki, D. (2016). "A really nice spot": Evaluating place, space, and technology in academic libraries. *College & Research Libraries*, *77*(1), 51–70. https://doi.org/10.5860/crl.77.1.51

Killick, D. (2017). *Internationalization and diversity in higher education: Implications for teaching, learning and assessment*. London: Palgrave.

Kim, S., & Kim, R. H. (2010). Microaggressions experienced by international students attending U.S. institutions of higher education. In *Microaggressions and marginality: Manifestation, dynamics, and impact.* (pp. 171–191). Hoboken, NJ: John Wiley & Sons Inc.

Kincheloe, J. L. (2008). *Critical constructivism primer*. New York: Peter Lang.

Knowles, C. (2003). *Race and social analysis*. London: Sage.

Kuh, G. D., & Gonyea, R. M. (2003). The role of the academic library in promoting student engagement in learning. *College & Research Libraries*, *64*(4), 256–282. https://doi.org/10.5860/crl.64.4.256

Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006). *What matters to student success: A review of the literature*. Retrieved from National Postesecondary Educational Cooperative website: http://nces.ed.gov/npec/pdf/kuh_team_report.pdf

Langhout, R. D., Drake, P., & Rosselli, F. (2009). Classism in the university setting: Examining student antecedents and outcomes. *Journal of Diversity in Higher Education*, *2*(3), 166–181. https://doi.org/10.1037/a0016209

Lather, P. (1992). Critical frames in educational research: Feminist and post-structural perspectives. *Theory Into Practice*, (2), 87.

Le, A. T., LaCost, B. Y., & Wismer, M. (2016). International female graduate students' experience at a Midwestern university: Sense of belonging and identity development. *Journal of International Students*, *6*(1), 128–152.

Lefebvre, H. (1991). *The production of space* (D. Nicholson - Smith, Trans.). Oxford, UK: Blackwell Publishing.

Linley, J. L. (2017). We are (not) all bulldogs: Minoritized peer socialization agents' meaning-making about collegiate contexts. *Journal of College Student Development*, *58*(5), 643–656. https://doi.org/10.1353/csd.2017.0051

Linley, J. L. (2018). Racism here, racism there, racism everywhere: The racial realities of minoritized peer socialization agents at a historically White institution. *Journal of College Student Development*, *59*(1), 21–36. https://doi.org/10.1353/csd.2018.0002

Lippincott, J. (2009, April). Learning spaces: Involving faculty to improve pedagogy. *EDUCAUSE Review*, *44*(2), 16–25.

Lippincott, J. (2013). Library space assessment: Focusing on learning. *RLI: Research Library Issues*, (284), 12–21.

Lipsitz, G. (2007). The racialization of space and the spatialization of race. *Landscape Journal*, *26*(1), 10–23.

Lock, M. B., Webb, M., & Champlin, J. (2017). Satisfying the electric youth: Maximizing student success through space, resources, services, and outlets. In S. E. Montgomery (Ed.), *Assessing library space for learning* (pp. 83–105). Lanham, MD: Rowman & Littlefield.

Locks, A. M., Hurtado, S., Bowman, N. A., & Oseguera, L. (2008). Extending notions of campus climate and diversity to students' transition to college. *The Review of Higher Education*, *31*(3), 257–285. https://doi.org/10.1353/rhe.2008.0011

Loes, C., Pascarella, E., & Umbach, P. (2012). Effects of diversity experiences on critical thinking skills: Who benefits? *Journal of Higher Education*, *83*(1), 1–25.

Loo, C. M., & Rolison, G. (1986). Alienation of ethnic minority students at a predominantly White university. *The Journal of Higher Education*, *57*(1), 58–77. https://doi.org/10.2307/1981466

Lovett, I. (2011, March 15). U.C.L.A. student's video rant against Asians fuels firestorm. *The New York Times*. Retrieved from

https://www.nytimes.com/2011/03/16/us/16ucla.html

Lowe, M., Byron, R., Ferry, G., & Garcia, M. (2013). Food for thought: Frequent interracial dining experiences as a predictor of students' racial climate perceptions. *Journal of Higher Education*, *84*(4), 569–600.

Lozano, A. (2010). Latina/o culture centers: Providing a sense of belonging and promoting student success. In L. D. Patton (Ed.), *Culture centers in higher education: Perspectives on identity, theory, and practice* (pp. 3–25). Sterling, VA: Stylus Publishing, LLC.

Mallinckrodt, B., & Sedlacek, W. E. (2009). Student retention and the use of campus facilities by race. *NASPA Journal*, *46*(4), 566–572.

Maramba, D. C., & Museus, S. D. (2013). Examining the effects of campus climate, ethnic group cohesion, and cross-cultural interaction on Filipino American students' sense of belonging in college. *Journal of College Student Retention: Research, Theory & Practice*, *14*(4), 495–522. https://doi.org/10.2190/CS.14.4.d

Marmot, A. (2014). Managing the campus: Facility management and design, the student experience, and university effectiveness. In P. Temple (Ed.), *The physical university: Contours of space and place in higher education* (pp. 3–14). New York, NY: Routledge.

Martínez-Alemán, A. M., Pusser, B., & Bensimon, E. M. (2015). Introduction. In A. M. Martínez-Alemán, B. Pusser, & E. M. Benismon (Eds.), *Critical approaches to*

the study of higher education: A practical introduction. Baltimore, MD: Johns

Hopkins University Press.

Maslow, A. H. (1970). *Motivation and personality*. New York: Harper & Row.

Massey, D. (1993). Politics and space/time. In M. Keith & S. Pile (Eds.), *Place and the politics of identity* (pp. 141–161). London: Routledge.

Matthews, K. E., Andrews, V., & Adams, P. (2011). Social learning spaces and student engagement. *Higher Education Research & Development*, *30*(2), 105–120. https://doi.org/10.1080/07294360.2010.512629

May, F., & Swabey, A. (2015). Using and experiencing the academic library: A multisite observational study of space and place. *College & Research Libraries*, *76*(6), 771–795. https://doi.org/10.5860/crl.76.6.771

McCormick, A. C. (2011). It's about time: What to make of reported declines in how much college students study. *Liberal Education*, *97*(1). Retrieved from https://www.aacu.org/publications-research/periodicals/its-about-time-what-make-reported-declines-how-much-college

McCullough, I., & Calzonetti, J. A. (2017). An investigation of space and learning in a STEM branch library. In S. E. Montgomery (Ed.), *Assessing library space for learning* (pp. 143–166). Lanham, MD: Rowman & Littlefield.

McDowell, L. (1999). *Gender, identity, and place: Understanding feminist geographies*. Minneapolis: University of Minnesota Press.

Means, D. R., & Pyne, K. B. (2017). Finding my way: Perceptions of institutional support and belonging in low-income, first-generation, first-year college students. *Journal*

of College Student Development, *58*(6), 907–924.

https://doi.org/10.1353/csd.2017.0071

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). San Francisco, CA: Jossey-Bass.

Milem, J. F., Chang, M. J., & Antonio, A. L. (Eds.). (2005). *Making diversity work on campus: A research-based perspective*. Washington, DC: Association of American Colleges and Universities.

Milem, J. F., Umbach, P. D., & Liang, C. T. H. (2004). Exploring the perpetuation hypothesis: The role of colleges and universities in desegregating society. *Journal of College Student Development*, *45*(6), 688–700.

https://doi.org/10.1353/csd.2004.0070

Montgomery, S. E. (2014). Library space assessment: User learning behaviors in the library. *The Journal of Academic Librarianship*, *40*(1), 70–75.

Montgomery, S. E. (Ed.). (2017). *Assessing library space for learning*. Lanham, MD: Rowman & Littlefield.

Museus, S. D., Nichols, A. H., & Lambert, A. D. (2008). Racial differences in the effects of campus racial climate on degree completion: A structural equation model. *The Review of Higher Education*, *32*(1), 107–134. https://doi.org/10.1353/rhe.0.0030

Museus, S. D., Yi, V., & Saelua, N. (2016). The impact of culturally engaging campus environments on sense of belonging. *The Review of Higher Education*, *40*(2), 187–215. https://doi.org/10.1353/rhe.2017.0001

Neimeyer, G. J. (1993). *Constructivist assessment: A casebook*. Newbury Park, CA: Sage.

Neurohr, K., & Bailey, L. (2017). First-generation undergraduate students and library space: A case study. In S. E. Montgomery (Ed.), *Assessing library space for learning* (pp. 167–182). Lanham, MD: Rowman & Littlefield.

Nitecki, D. A. (2011). Space assessment as a venue for defining the academic library. *The Library Quarterly*, *81*(1), 27–59. https://doi.org/10.1086/657446

Nuñez, A.-M. (2009). A critical paradox? Predictors of Latino students' sense of belonging in college. *Journal of Diversity in Higher Education*, *2*, 46–61. https://doi.org/10.1037/a0014099

Nuñez, A.-M. (2011). Counterspaces and connections in college transitions: First-generation Latino students' perspectives on Chicano studies. *Journal of College Student Development*, *52*(6), 639–655. https://doi.org/10.1353/csd.2011.0077

Ojennus, P., & Watts, K. A. (2017). User preferences and library space at Whitworth University Library. *Journal of Librarianship and Information Science*, *49*(3), 320–334. https://doi.org/10.1177/0961000615592947

Ostrove, J. M., & Long, S. M. (2007). Social class and belonging: Implications for college adjustment. *The Review of Higher Education*, *30*(4), 363–389. https://doi.org/10.1353/rhe.2007.0028

Painter, S., Fournier, J., Grape, C., Grummon, P., Morelli, J., Whitmer, S., & Cevetello, J. (2013). *Research on learning space design: Present state, future directions*. Society of College and University Planning.

Patton, L. D. (2010). A call to action: Historical and contemporary reflections on the relevance of campus culture centers in higher education. In L. D. Patton (Ed.), *Culture centers in higher education: Perspectives on identity, theory, and practice* (pp. xiii–xvii). Sterling, VA: Stylus Publishing, LLC.

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Pepper, C. (2016). Informal learning spaces: A facilities management perspective. In G. Walton & G. Matthews, *Exploring informal learning space in the university: A collaborative approach* (pp. 105–120). London: Routledge.

Pike, G. R., Kuh, G. D., & Gonyea, R. M. (2007). Evaluating the rationale for affirmative action in college admissions: Direct and indirect relationships between campus diversity and gains in understanding diverse groups. *Journal of College Student Development*, *48*(2), 166–182. https://doi.org/10.1353/csd.2007.0018

Pittman, L. D., & Richmond, A. (2008). University belonging, friendship quality, and psychological adjustment during the transition to college. *Journal of Experimental Education*, *76*(4), 343–361.

Porter, J., & Oliver, R. (2016). Rethinking lactation space: Working mothers, working bodies, and the politics of inclusion. *Space and Culture*, *19*(1), 80–93. https://doi.org/10.1177/1206331215596488

Potkewitz, H. (2018, June 4). Latest trend in education is watching others study: Students find inspiration in videos of someone else hitting the books. *Wall Street Journal,* p. A.1.

Rankin, S. R., & Reason, R. D. (2005). Differing perceptions: How students of color and

    White students perceive campus climate for underrepresented groups. *Journal of*

    College Student Development, *46*(1), 43–61.

    https://doi.org/10.1353/csd.2005.0008

Renn, K. A. (2000). Patterns of situational identity among biracial and multiracial college

    students. *The Review of Higher Education*, *23*(4), 399–420.

    https://doi.org/10.1353/rhe.2000.0019

Renn, K. A., & Arnold, K. D. (2003). Reconceptualizing research on college student peer

    culture. *Journal of Higher Education*, *74*(3), 261.

Rodger, S. C., & Johnson, A. M. (2005). The impact of residence design on freshman

    outcomes: Dormitories versus suite-style residences. *The Canadian Journal of*

    Higher Education, *XXXV*(3), 83–99.

Roksa, J., Kilgo, C. A., Trolian, T. L., Pascarella, E. T., Blaich, C., & Wise, K. S. (2017).

    Engaging with diversity: How positive and negative diversity interactions

    influence students' cognitive outcomes. *The Journal of Higher Education*, *88*(3),

    297–322. https://doi.org/10.1080/00221546.2016.1271690

Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). Los Angeles,

    CA: Sage Publications.

Samura, M. (2016a). Architecture of diversity: Using the lens and language of space to

    examine racialized experiences of students of color on college campuses. In P. A.

    Pasque, N. Ortega, J. C. Burkhardt, & M. P. Ting (Eds.), *Transforming*

understandings of diversity in higher education: Demography, democracy, and discourse. Sterling, VA: Stylus Publishing, LLC.

Samura, M. (2016b). How can residence hall spaces facilitate student belonging? *Planning for Higher Education*, *44*(4), 90–101.

Samura, M. (2016c). Remaking selves, repositioning selves, or remaking space: An examination of Asian American college students' processes of "belonging." *Journal of College Student Development*, *57*(2), 135–150. https://doi.org/10.1353/csd.2016.0016

Sayrs, E. (2018, June 19). How behavioral nudging can support completion and persistence. Retrieved June 21, 2018, from APLU's First DRAFT! website: http://www.aplu.org/news-and-media/blog/how-behavioral-nudging-can-support-completion-and-persistence

Smith, D. G. (2015). *Diversity's promise for higher education: Making it work* (2nd ed.). Baltimore, MD: Johns Hopkins University Press.

Smithscape: New app helps users find study spaces on campus. (2017, July 31). *Grécourt Gate*. Retrieved from https://www.smith.edu/about-smith/news/smithscape-study-space-app

Solorzano, D., Ceja, M., & Yosso, T. (2000). Critical race theory, racial microaggressions, and campus racial climate: The experiences of African American college students. *The Journal of Negro Education*, *69*(1/2), 60–73.

Soria, K. M., & Stebleton, M. J. (2013). Social capital, academic engagement, and sense of belonging among working-class college students. *College Student Affairs Journal*, *31*(2), 139.

Soria, K. M., Stebleton, M. J., & Huesman, R. L. (2013). Class counts: Exploring differences in academic and social integration between working-class and middle/upper-class students at large, public research universities. *Journal of College Student Retention: Research, Theory & Practice*, *15*(2), 215–242. https://doi.org/10.2190/CS.15.2.e

Spanierman, L. B., Soble, J. R., Mayfield, J. B., Neville, H. A., Aber, M., Khuri, L., & De La Rosa, B. (2013). Living learning communities and students' sense of community and belonging. *Journal of Student Affairs Research and Practice*, *50*(3), 308–325. https://doi.org/10.1515/jsarp-2013-0022

Stebleton, M. J. (2011). Understanding immigrant college students: Applying a developmental ecology framework to the practice of academic advising. *NACADA Journal*, *31*(1), 42–54.

Stebleton, M. J., & Aleixo, M. B. (2016). Black African immigrant college students' perceptions of belonging at a predominately White institution. *Journal of the First-Year Experience & Students in Transition*, *28*(1), 89–107.

Stebleton, M. J., Soria, K. M., Huesman, R. L., & Torres, V. (2014). Recent immigrant students at research universities: The relationship between campus climate and sense of belonging. *Journal of College Student Development*, *55*(2), 196–202. https://doi.org/10.1353/csd.2014.0019

Steele, A. L., Haines, M. P. J., & Critchley, V. A. (2016). Informal learning spaces in university libraries. In G. Walton & G. Matthews (Eds.), *Exploring informal learning space in the university: A collaborative approach* (pp. 121–133). London: Routledge.

Steele, P. A., Cronrath, D., Vicchio, S. P., & Foster, N. F. (2015). *The living library: An intellectual ecosystem*. Chicago, IL: Association of College and Research Libraries.

Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R. (2012). Unseen disadvantage: How American universities' focus on independence undermines the academic performance of first-generation college students. *Journal of Personality and Social Psychology*, *102*(6), 1178–1197. https://doi.org/10.1037/a0027143

Strange, C. C., & Banning, J. H. (2015). *Designing for learning: Creating campus environments for student success* (2nd ed.). San Francisco, CA: Jossey-Bass.

Strayhorn, T. L. (2008). Fittin' in: Do diverse interactions with peers affect sense of belonging for Black men at predominantly White institutions? *NASPA Journal*, *45*(4), 501.

Strayhorn, T. L. (2019). *College students' sense of belonging: A key to education success for all students* (2nd ed.). New York: Routledge.

Sturm, C. T. (2016). *Exploring the perceptions of campus climate among mixed race students attending a predominantly White institution* (Ph.D., Clemson University). Retrieved from https://tigerprints.clemson.edu/all_dissertations/1614/

Sulé, V. T. (2016). Hip-hop is the healer: Sense of belonging and diversity among hip-

hop collegians. *Journal of College Student Development*, *57*(2), 181–196.

https://doi.org/10.1353/csd.2016.0022

Sullivan, S. (2007). On Revealing Whiteness: A Reply to Critics. *The Journal of*

Speculative Philosophy, *21*(3), 231–242. https://doi.org/10.1353/jsp.0.0006

Tabur, S., & Cunningham, H. V. (2012). Learning space attributes: Reflections on

academic library design and its use. *Journal of Learning Spaces*, *1*(2). Retrieved

from http://libjournal.uncg.edu/jls/article/view/392

Tafoya, B. T. (2017, June 15). A new school of thought on collaboration spaces. *College*

Planning & Management. Retrieved from

https://webcpm.com/articles/2017/06/15/collaboration-spaces.aspx

Temple, P. (2008). Learning spaces in higher education: An under-researched topic.

London Review of Education, *6*(3), 229–241.

https://doi.org/10.1080/14748460802489363

Temple, P. (2014). Space, place, and university effectiveness. In P. Temple (Ed.), *The*

physical university: Contours of space and place in higher education (pp. 3–14).

New York: Routledge.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*

(2nd ed.). Chicago, IL: University of Chicago Press.

Tinto, V. (2012). *Completing college: Rethinking institutional action*. Chicago, IL:

University of Chicago Press.

Toutkoushian, R. K., & Paulsen, M. B. (2016). *Economics of higher education: Background, concepts, and applications*. Dordrecht, Netherlands: Springer.

Vaccaro, A. (2012). Campus microclimates for LGBT faculty, staff, and students: An exploration of the intersections of social identity and campus roles. *Journal of Student Affairs Research and Practice*, *49*(4), 429–446. https://doi.org/10.1515/jsarp-2012-6473

Vaccaro, A., & Camba-Kelsay, M. J. (2016). *Centering women of color in academic counterspaces: A critical race analysis of teaching, learning, and classroom dynamics*. Lanham, MD: Rowman & Littlefield.

Vaccaro, A., Daly-Cano, M., & Newman, B. M. (2015). A sense of belonging among college students with disabilities: An emergent theoretical model. *Journal of College Student Development*, *56*(7), 670–686. https://doi.org/10.1353/csd.2015.0072

Vaccaro, A., & Newman, B. M. (2016). Development of a sense of belonging for privileged and minoritized students: An emergent model. *Journal of College Student Development*, *57*(8), 925–942. https://doi.org/10.1353/csd.2016.0091

Vaccaro, A., & Newman, B. M. (2017). A sense of belonging through the eyes of first-year LGBPQ students. *Journal of Student Affairs Research and Practice*, *54*(2), 137–149. https://doi.org/10.1080/19496591.2016.1211533

Vaccaro, A., Russell, E. I. A., & Koob, R. M. (2015). Students with minoritized identities of sexuality and gender in campus contexts: An emergent model. *New Directions for Student Services*, *2015*(152), 25–39. https://doi.org/10.1002/ss.20143

Villalpando, O. (2003). Self-segregation or self-preservation? A critical race theory and Latina/o critical theory analysis of a study of Chicana/o college students. *International Journal of Qualitative Studies in Education*, *16*(5), 619–646. https://doi.org/10.1080/0951839032000142922

Wachter, R. (2018, January 2). A space apart: College libraries contemplate meditation rooms. *American Libraries*, (1–2), 14.

Wallin, S., & Diller, K. R. (2019). Can place attachment and cognitive architecture theories be used to develop library space designs that support student success? *Recasting the Narrative*, 190–199. Cleveland, OH.

Walton, G., & Matthews, G. (2016). *Exploring informal learning space in the university: A collaborative approach*. London: Routledge.

Webb, K. M., Schaller, M. A., & Hunley, S. A. (2008). Measuring library space use and preferences: Charting a path toward increased engagement. *Portal: Libraries and the Academy*, *8*(4), 407–422. https://doi.org/10.1353/pla.0.0014

Webster, K. (2008). The research library as learning space: New opportunities for campus development. *Learning Spaces in Higher Education: Positive Outcomes by Design*, 31–36. Retrieved from http://repository.cmu.edu/lib_science/136

Webster, K. (2010). The library space as learning space. *Educause Review*, 10–11.

Wells, A. V., & Horn, C. (2015). The Asian American college experience at a diverse institution: Campus climate as a predictor of sense of belonging. *Journal of Student Affairs Research and Practice*, *52*(2), 149–163.

Whitmire, E. (2004). The campus racial climate and undergraduates' perceptions of the academic library. *Portal: Libraries and the Academy*, *4*(3), 363–378. https://doi.org/10.1353/pla.2004.0057

Whitmire, E. (2006). African American undergraduates and the university academic library. *The Journal of Negro Education*, *75*(1), 60–66.

Woodford, M. R., Joslin, J. Y., Pitcher, E. N., & Renn, K. A. (2017). A mixed-methods inquiry into Trans environmental microaggressions on college campuses: Experiences and outcomes. *Journal of Ethnic & Cultural Diversity in Social Work*, *26*(1–2), 95–111. https://doi.org/10.1080/15313204.2016.1263817

Yoo-Lee, E., Lee, T. H., & Velez, L. (2013). Planning library spaces and services for Millennials: An evidence-based approach. *Library Management*, *34*(6–7), 498–511.

Yosso, T. J. (2006). *Critical race counterstories along the Chicana/Chicano educational pipeline*. New York: Routledge.

Yosso, T. J., & Lopez, C. B. (2010). Counterspaces in a hostile place: A critical race theory analysis of campus cultural centers. In L. D. Patton (Ed.), *Culture centers in higher education: Perspectives on identity, theory, and practice* (pp. 83–104). Sterling, VA: Stylus Publishing, LLC.

Yosso, T. J., Smith, W., Ceja, M., & Solórzano, D. (2009). Critical race theory, racial microaggressions, and campus racial climate for Latina/o undergraduates. *Harvard Educational Review*, *79*(4), 659–691. https://doi.org/10.17763/haer.79.4.m6867014157m707l

Appendix A: Institutional Review Board Approval

Project Number 18-E-364
Project Status APPROVED
Committee: Office of Research Compliance
Compliance Contact: Rochelle Reamy (reamy@ohio.edu)
Primary Investigator: Kelly Broughton
Project Title: Belonging in Study Spaces
Level of Review: EXEMPT
The Ohio University Office of Research Compliance reviewed and approved by exempt review the above referenced research.
The Office of Research Compliance was able to provide exempt approval under 45 CFR 46.104(d) because the research meets the applicability criteria and one or more categories of research eligible for exempt review, as indicated below.
IRB Approval: 09/26/2018 08:13:03 AM
Review Category: 2
Waivers: A waiver of signature on the consent document is granted.
If applicable, informed consent (and HIPAA research authorization) must be obtained from subjects or their legally authorized representatives and documented prior to research involvement. In addition, FERPA, PPRA, and other authorizations / agreements must be obtained, if needed. The IRB-approved consent form and process must be used. Any changes in the research (e.g., recruitment procedures, advertisements, enrollment numbers, etc.) or informed consent process must be approved by the IRB before they are implemented (except where necessary to eliminate apparent immediate hazards to subjects).
It is the responsibility of all investigators and research staff to promptly report to the Office of Research Compliance / IRB any serious, unexpected and related adverse and potential unanticipated problems involving risks to subjects or others.
This approval is issued under the Ohio University OHRP Federalwide Assurance #00000095. Please feel free to contact the Office of Research Compliance staff contact listed above with any questions or concerns.

Appendix B: Recruitment Email

Subject: Participants Wanted for Research on Belonging in Study Spaces
Date: Wednesday, October 3, 2018 10:22:27 AM

- Are you 18 or older?
- Have you completed at least two semesters on the ▮▮▮▮ campus of ▮▮▮
  University?

If you answered YES to these questions and you respond to the questions in the survey
linked below, you may be eligible to participate in an in-person interview and earn a $20
Amazon gift card.

The study consists of a preliminary survey and an in-person interview lasting
approximately one hour in which you will be asked to explain your perceptions of and
experiences in spaces outside of the classroom used for studying and academic work.

To see if you qualify for the in-person interview, take the Belonging and Study Spaces
Survey.

Know anyone else who may be interested? Forward this email or send the link above.
If you have any questions, please contact the study's primary investigator, Kelly
Broughton at broughtk@ohio.edu or 740-593-2709.

Thank you,
Kelly Broughton
PhD Candidate, Patton College of Education
IRB number 18-E-364
broughtk@ohio.edu
740-593-2709

Appendix C: Informed Consent

Title of Research: Students' Sense of Belonging in Study Space
Researcher: Kelly Broughton, Doctoral Candidate, Ohio University; Laura Harrison, Ph.D. (Advisor), Associate Professor, Counseling and Higher Education, Patton College of Education
IRB number: 18-E-364

You are being asked by an Ohio University researcher to participate in research. For you to be able to decide whether you want to participate in this project, you should understand what the project is about, as well as the possible risks and benefits in order to make an informed decision. This process is known as informed consent. This form describes the purpose, procedures, possible benefits, and risks of the research project. It also explains how your personal information/biospecimens will be used and protected. Once you have read this form and your questions about the study are answered, you will be asked to participate in this study. You should receive a copy of this document to take with you.

Summary of Study
This study explores student experiences in study spaces and how they affect students' sense of belonging on the Athens campus of Ohio University. This study consists of an online survey and an in-person interview. The information you provide by participating in this study will help to improve understandings of the relationship between experiences in study spaces and students' sense of belonging.

Explanation of Study
This study is being done because it is a requirement for fulfillment of the researcher's doctoral studies, the purpose of which is to explore student experiences in study spaces and how they affect sense of belonging.

If you agree to participate, you will be asked to participate in one audio-recorded interview during Fall Semester 2018.

You should not participate in this study if you are under 18 years old or you have not completed at least 2 semesters of study at the Ohio University Athens Campus.

This interview should take approximately 1 hour.

Risks and Discomforts
No risks or discomforts are anticipated

Benefits
This study is important to science/society because little is known about whether or how the experiences of students in study spaces relate to students' sense of belonging. An

improved understanding of these experiences could help to create better environments for students outside of the classroom.

Confidentiality and Records
Your study information will be kept confidential through the use of a pseudonym selected by you. Interview transcripts will be de-identified. The interview audio recordings will be destroyed in January 2020 and the transcripts will be destroyed in December 2021.

Additionally, while every effort will be made to keep your study-related information confidential, there may be circumstances where this information must be shared with:
- Federal agencies, for example the Office of Human Research Protections, whose responsibility is to protect human subjects in research;
- Representatives of Ohio University (OU), including the Institutional Review Board, a committee that oversees the research at OU;

Compensation
As compensation for your time/effort, you will receive a $20 Amazon gift card upon completion of the interview.

Please be aware that certain personal information, such as name, address and social security number, may be provided to the Ohio University Finance Office to document that you received payment for research participation. However, your study data will not be shared with Finance.

Future Use Statement
Identifiers might be removed from data/samples collected, and after such removal, the data/samples may be used for future research studies or distributed to another investigator for future research studies without additional informed consent from you or your legally authorized representative.

Contact Information
If you have any questions regarding this study, please contact the investigator Kelly Broughton, broughtk@ohio.edu, 740-593-2709, or the advisor Laura Harrison, harrisol@ohio.edu, 740-593-0847.

If you have any questions regarding your rights as a research participant, please contact Dr. Chris Hayhow, Director of Research Compliance, Ohio University, (740)593-0664 or hayhow@ohio.edu.

By agreeing to participate in this study, you are agreeing that:
- you have read this consent form (or it has been read to you) and have been given the opportunity to ask questions and have them answered;
- you have been informed of potential risks and they have been explained to your satisfaction;

- you understand Ohio University has no funds set aside for any injuries you might receive as a result of participating in this study;
- you are 18 years of age or older;
- your participation in this research is completely voluntary;
- you may leave the study at any time; if you decide to stop participating in the study, there will be no penalty to you and you will not lose any benefits to which you are otherwise entitled.

Version Date: *09/25/18*

Appendix D: Preliminary Survey

1. How old are you?

   o   18-22

   o   23-28

   o   29+

2. How many semesters have you completed on the ▇▇▇ campus?

   o   2

   o   3

   o   4

   o   5

   o   6

   o   7

   o   8

   o   9+

3. What is your major?

4. How much time per week do you spend on studying, doing homework, reading for class, preparing for quizzes or exams, doing class projects, rehearsing, or other academic work outside of class?

   o   up to 5 hours/week

   o   5-10 hours/week

   o   11-15 hours/week

   o   16 - 20 hours/week

- o 21-25 hours/week

- o 26-30 hours/week

- o over 30 hours/week

5. What is your gender?

6. What is your race and/or ethnicity?

7. What is your religion?

8. Was English the first language you learned to speak as a child? YES or NO

   - o If not, what language did you first learn?

9. How many languages do you speak (enter a number)?

10. Are you an international student? YES or NO

    - o If yes, what country are you from?

11. Do you have a disability? YES or NO

    - o If yes, please tell me about your disability.

12. What is your sexual orientation?

13. Do either or both of your parents have a college degree? YES or NO

14. What is the approximate annual income earned by your family?

    - o less than $25,000

    - o $25,000 - $50,000

    - o $50,000 - $100,000

    - o $100,000 - $150,000

    - o $150,000 - $250,000

    - o $250,000 - $350,000

o   more than $350,000

15. How would you characterize your family's income status?

   o   Working-class

   o   Middle-class

   o   Upper-middle class

   o   Upper class

   o   Don't know

16. Have you received a Pell Grant?

   o   Yes

   o   No

   o   I don't know

17. When you need to study (do homework, read for class, prepare for quizzes or exams, do class projects or other academic work outside of the classroom), where do you typically do that?

18. Why do you choose that location or locations to study?

19. Have you ever felt like you did not belong in a place where you were studying?

   o   Yes

   o   No

   o   Maybe

      o   If yes or maybe, please tell me about this place and why you felt like you did not belong.

20. If you are selected and agree to participate in an interview, a pseudonym (a fake name) will be used to ensure your anonymity. Please choose a pseudonym for participation in the interview process.

21. How would you prefer to be contacted to schedule an interview?

    o   Phone (please enter number)

    o   Email (please enter address)

Appendix E: Interview Guide

INTRODUCTION SCRIPT

Hi. Thank you so much for agreeing to talk to me and help with my research.
[Give gift card] - This is a thank you for giving me your time and sharing your
experiences with me. Here is a copy of the consent agreement. You may take this with
you if you want. It includes contact information for me and my adviser.

My name is Kelly and I am working on a PhD in Higher Education. First, I will
tell you a little bit about my research and then I will ask you lots of questions and take
some notes. My research is about discovering what relationship there might be between
study spaces and students' sense of belonging in college and to do that, I am asking
students about their preferences for and experiences in study spaces.

When I say "study spaces," I am particularly interested in the places on campus
outside of the classroom where you do academic work: studying, homework, reading for
class, preparing for quizzes and exams, doing projects, practicing – anything you need to
do for your coursework that doesn't happen in class or in another specific location, like a
lab or rehearsal hall. Does that make sense?

When I talk about students' sense of belonging, that is about whether, when, and
why you feel like you fit-in, belong, and can be your comfortable, true self in a place or
space. Do you understand what I mean?

There are no known risks to you participating in this research, but my research
protocol calls for me to anonymize all of the people I am interviewing. You chose the
pseudonym _____ when you completed my survey. Is that still the name you would

like me to use? When I write up my analysis, I may quote you or paraphrase your words, but I would only ever refer to you by this name. Which pronouns do you prefer that I use to describe you (prompt, if needed: he/him, she/her, they/them)?

There are no right and wrong answers to my questions. I just really need your honest opinions and I want to hear about your real experiences. I am interested in details, even details about what things look like and the way people behave.

I am going to turn on my recorders now. I am using two devices just in case one fails. If you have any questions about anything please ask at any time throughout this interview.

The first group of questions are just to help me understand you as a person.

1. Tell me about yourself. Where are you from? Why did you come to this university? Your high school? Year? Transfer student? Major? Change majors?

2. Do you feel involved in campus life? How or why not?

3. Tell me about your friends here. Did you know them before coming here? Where did you meet?

The rest of these questions relate to your perceptions and experiences in study spaces, primarily on campus, but your answers may also include places you study off-campus, too. By "study spaces," I mean where you choose to do homework, reading for class, study for quizzes or exams, and complete other schoolwork and class projects.

4. Think about all of your time here, have your choices about where to study changed? If so, how and why? If not, why not?

5. Who do you study with and when do you study?

6. Are you part of any study groups? If so, why?

7. What factors do you consider when choosing a place to study?

8. Tell me about your favorite place to study. Describe it and what happens there in as much detail as you can?

9. Tell me about you habits when you study? What do you want to have with you? What kind of space do you like?

10. Do you typically take the first spot you see or are there times when you might hunt for a specific place? When? What are you looking for?

11. When you study somewhere other than your favorite place, where is it and why do you study there? What is the difference between that place and your favorite place?

12. How much does it matter that there be others around you doing the same activities?

13. How much does the intention of the space matter? Can you study in a coffee shop, your room, a classroom or hallway?

14. Have you ever encountered a study space that had rules, procedures, art, or graffiti that made it a better or worse place to be? Describe?

15. In the survey you completed indicating your interest in participating in this research project, you said [_____] about feeling like you didn't belong in a study space. Tell me more about that.

16. Is there a place or places where you are not comfortable studying or that you dislike? What about those places makes them not good for studying?

17. What happens when you are trying to study and feel like you don't belong in that place?

18. Are there places where you are not sure you are allowed to be or supposed to be?

19. How much does feeling like you belong in a study space matter when you choose a place to study?

20. How important is your major/discipline to belonging in study spaces?

21. Rate these in order of importance in selecting a good place to study:

a. Your friends

b. Who you are

c. Your major

d. Your year/class

22. Tell me about where at this university you fit in the most? Where are you most comfortable to be your true self?

23. Have you or anyone you know had experiences on this campus that make you believe this campus is a place where some people don't really fit in, belong, or can be themselves?

24. How important is having a sense of belonging in a study space to helping you feel like you belong or matter on this campus?

25. Is feeling like you belong more important in the classroom or in your study space?

26. Do you think this campus cares and pays attention to your study space needs?

27. Are there other things the university administration should be doing to ensure students have a place to study where they feel like they completely belong?

28. Are there other questions I should be asking students to better understand their

belonging experiences in study spaces on campus?

29. Why did you complete the survey I sent?

END SCRIPT

That is all of my questions. Thank you again for your participation. I want to be sure

that you have an opportunity to correct or change anything about this interview. When I

conclude all of my interviews in a couple of weeks, I will share the transcript of this

recording with you. Later, I will also send you an email and offer you a copy of my

analysis before it goes to my professor. You don't have to reply, but you are more than

welcome to continue to give me feedback. [Get email address, if

needed_____]

Interview Questions Mapped to Research Questions

Research Questions	Interview Questions (as numbered above)
1. How do students' experiences in informal learning spaces relate to their sense of belonging?	2-12, 15-17, 19, 21, 24-29
2. How does social identity shape students' experiences in informal learning spaces?	1, 4-11, 15-16, 18, 20-23, 26-28
3. How do the ecologies of informal learning spaces relate to students' sense of belonging?	4, 7-14, 16, 28

Appendix F: Detailed Participant Attributes

Name	Age	Year of Study	Major	Hours studying per week	Gender	Race/ethnicity	Sexual Orientation	Disability	International Student	First Language Learned	Parent has College Degree	Receive a Pell Grant
Anita	18-22	senior	economics**	11-15	female	Asian American	straight	no	no	English	yes	no
Anne	18-22	sophomore	history pre-law	11-15	female	Asian	heterosexual	no	no	English	yes	no
Ash	18-22	sophomore	political science	11-15	genderqueer	Caucasian	pansexual	no	no	English	yes	no
Beatrice	18-22	junior	women's, gender, & sexuality studies	5-10	nonbinary	White	bisexual	yes	no	English	yes	no
Brock	18-22	junior	political science	11-15	male	Mexican/Latinx	straight	no	no	English	no	yes
Eliza	23-28	senior*	retail merchandising & fashion product development	5-10	female	White	bisexual	no	no	English	no	yes
Elizabeth	18-22	sophomore	communication sciences & disorders**	11-15	female	Biracial	gay	no	no	English	yes	no
Haley	18-22	junior	social work	up to 5	female	Native American	straight	no	no	English	yes	no
Jack	18-22	senior*	environmental & plant biology	16-20	male	White	straight	no	no	English	yes	yes
Jay	18-22	sophomore	interior architecture	11-15	female	Caucasian	straight	no	no	Turkish	no	yes

Julia	18-22	senior	occupational hygiene and safety**	5-10	female	Black	male	no	no	English	no	yes
Katie	23-28	senior	management & international business	26-30	female	White, Caucasian	heterosexual	no	no	English	no	yes
Lauren	18-22	sophomore	political science**	11-15	female	Caucasian	straight	no	no	English	no	yes
Liza	18-22	junior	psychology**	5-10	female	Caucasian	bisexual	no	no	English	yes	yes
Magnolia	23-28	sophomore	health services administration	5-10	female	White	bisexual	yes	no	English	no	yes
Max	18-22	junior	media arts & studies**	5-10	demimale	Multiracial - Caucasian & Latinx	demisexual	no	no	English	no	yes
Nicole	18-22	sophomore	neuroscience	11-15	cisgender woman	White	bisexual	no	no	English	yes	no
Pam	18-22	junior	pre-med, biology	5-10	female	White	heterosexual	no	yes	Finnish	yes	no
Rain	18-22	sophomore	undecided	5-10	female	Black	bisexual	no	no	English	no	no
Ruth	18-22	senior	accounting**	21-25	female	White	straight	no	no	English	yes	yes
Sage	18-22	junior	computer science	over 30	genderfluid demi-female	White	demi-pansexual?	yes	no	English	yes	no
Sam	18-22	junior	biological sciences	11-15	female	Caucasian	heterosexual	no	no	English	no	yes
Sandy	18-22	senior	communication studies	21-25	female	Latina	heterosexual	no	no	Spanish	yes	no

Sarah	18-22	senior	nutrition**	16-20	female	White	heterosexual	no	no	English	yes	no
Summer	18-22	sophomore	biological sciences	over 30	female	Asian	-	no	no	Telugu	yes	no
Tameka	18-22	sophomore	special education	5-10	female	Black	bisexual	no	no	English	no	yes
Tanner	18-22	junior	chemical engineering	16-20	male	Black	straight	no	no	English	yes	don't know
Tina	18-22	sophomore*	biology**	5-10	gender fluid	Multiracial	bisexual	yes	no	English	yes	don't know
Tori	18-22	junior	sociology	up to 5	female	White	heterosexual	yes	no	English	no	yes
Veronica	18-22	sophomore	education	5-10	female	White	bisexual	no	no	English	yes	yes
Walt	18-22	junior	english	5-10	non-binary	White	queer	no	no	English	yes	no

*transferred from a different institution
**changed major at least once