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This study aims to explore the experiences of international students at UNCG concerning their utilization of campus spaces, encounters with isolation and loneliness, and factors influencing their social interactions. The primary objective is to pinpoint and propose design interventions for university spaces, supported by evidence, that effectively enhance student experiences by fostering meaningful social connections and reducing the prevalence of isolation and loneliness.

The study employs a qualitative methodology, employing online questionnaires and observations to amass data from UNCG's international student body. Participant recruitment occurred through the UNCG International Program Center via email, ensuring comprehensive inclusivity. To bolster participation, Starbucks gift cards were provided as incentives. A total of 36 international students participated, providing their insights after granting informed consent.

The research findings illuminate the design factors that shape social interaction among international students at UNCG. Participants emphasized the furniture arrangement, cultural elements, and greenery in crafting inviting spaces for socialization. While perceptions of the campus environment exhibited variability, certain students expressed dissatisfaction, highlighting the need to enhance its role in fostering connections and alleviating isolation and loneliness. The data underscores the importance of tailoring spaces to accommodate diverse preferences, with an emphasis on functional layouts, furniture, and interior design to facilitate meaningful social engagement. Moreover, the study identifies a preference (58%) for academically oriented interactions and intermittent experiences of loneliness, underscoring the critical role of well-designed spaces in addressing these challenges.

EXPERIENCE AND EXPOSURE: THE INFLUENCE OF UNIVERSITY SPACES ON  
INTERNATIONAL STUDENTS' WELL-BEING: SOCIALIZATION AND  
FEELINGS OF ISOLATION AND LONELINESS

by

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## DEDICATION

I dedicate this work to my beloved family, whose enduring support and unwavering belief in my abilities have been a constant source of strength throughout my academic journey. To my parents, whose sacrifices and encouragement have made this journey possible, and to my husband, who has stood by my side, this work is a tribute to your love and dedication.

To the international student community, may this research serve as a testament to the importance of creating inclusive and supportive university spaces. Our shared experiences and challenges have shaped this study, and I am grateful for the camaraderie and friendships formed along the way. Let us continue to work together in bridging the gap of isolation and loneliness, fostering a sense of belonging and well-being among all who seek knowledge across borders..

## TABLE OF CONTENTS

LIST OF TABLES .....	vii
LIST OF FIGURES .....	viii
CHAPTER I: INTRODUCTION.....	1
Research Questions .....	3
CHAPTER II: LITERATURE REVIEW .....	4
International students.....	4
International Student Population at UNCG .....	4
International Student Experiences .....	6
Culture .....	7
Chinese Culture.....	8
Iranian culture .....	10
Arabic Culture.....	12
Indian Culture .....	14
Summary .....	17
Well-being.....	18
The feeling of isolation and loneliness .....	21
Summary .....	26
University spaces.....	27
How Can University Spaces Improve Well-being?.....	27
Summary .....	33
CHAPTER III: METHODOLOGY .....	35
Context of Study and Participants .....	35
Instrument and Data Collection Methods.....	36
Data analysis.....	49
Ethics and IRB.....	49
Summary .....	49
CHAPTER IV: FINDINGS .....	51
Participant demographics .....	52
Research question 1: How do international students use campus spaces for their studies and interactions at UNCG?.....	53

Patterns of social interaction among respondents .....	53
Spaces Used Most Frequently for Socialization .....	53
Preferred Spaces for Socialization .....	54
Research question 2: What do international students perceive as barriers or opportunities for social interaction in campus spaces? .....	56
Student satisfaction with interior design in campus socialization spaces.....	56
Opportunities for Social interactions .....	58
Barriers for social interactions: .....	59
Summary .....	60
Research question 3: What are the experiences of international students in terms of isolation and loneliness when utilizing campus spaces? .....	61
Research question 4: How can spaces at UNCG encourage social interaction among international students? .....	65
Evaluation of Campus's Encouragement of Social Interaction.....	66
Features Preferred for Socialization.....	67
Observation Finding .....	69
Library .....	69
Elliot University Center (EUC) .....	70
Kaplan Center .....	72
Answer research questions based on survey and observation findings:.....	74
Research Question 1: How do international students use campus spaces for their studies and interactions at UNCG?.....	74
Research Question 2: What do international students perceive as barriers or opportunities for social interaction in campus spaces?.....	74
Research Question 3: What are the experiences of international students in terms of isolation and loneliness when utilizing campus spaces?.....	75
Research Question 4: How can spaces at UNCG encourage social interaction among international students? .....	76
CHAPTER V: CONCLUSION.....	77
Discussion.....	77
Research Limitations and Future Research .....	82
Conclusion.....	84
REFERENCES .....	86
APPENDIX A: QUESTIONNAIRE.....	102

APPENDIX B: REDESIGNED INTERIOR SPACES AT ELLIOTT UNIVERSITY  
CENTER FOR ENHANCING INTERNATIONAL STUDENT WELL-BEING ..... 105

APPENDIX C: IRB APPROVAL ..... 131

## LIST OF TABLES

Table 1. Breakdown of time spent in each location for observations.....	43
Table 2. Activities recorded at the Jackson Library .....	36
Table 3. Activities Recorded at Taylor Garden and Starbucks Café at the Elliott University Center.....	38
Table 4. Activities recorded at Jogging track overlooking the basketball court at Leonard J. Kaplan Center .....	41
Table 5. Frequency of preferred and utilized socialization spaces on campus.....	55
Table 6. Frequency of feeling a lack of companionship, being left out, and isolation.....	61
Table 7. Frequency of spaces associated with feelings of isolation .....	63
Table 8. Frequency of feeling lonely on campus.....	64
Table 9. Design features of socialization spaces .....	66
Table 10. Features preferred for socialization on campus .....	68
Table 11. Total number of groups and individuals in all observations at Jackson Library and Elliott university Center.....	71



## LIST OF FIGURES

Figure 1. Distribution of Iranian, Indian, Chinese, and Arabic International Student Communities at UNCG.....	6
Figure 2. Obstacles to friendship formation for international students .....	23
Figure 3. Coping strategies for loneliness among international students (Wawera & McCamley, 2020) .....	26
Figure 4. Key factors in university space design to enhance student well-being .....	32
Figure 5. Main-level floor plan of the Leonard J. Kaplan Center.....	37
Figure 6. Furniture plan of game area at Kaplan Center.....	37
Figure 7. Game area at Leonard J. Kaplan Center .....	38
Figure 8. First-Floor Plan of the Elliott University Center.....	38
Figure 9. Furniture plan of seating area outside Starbucks Café at Elliott University Center.....	39
Figure 10. Seating outside of the Starbucks Café at Elliott University Center.....	39
Figure 11. Furniture plan of Taylor Garden at Elliott University Center .....	40
Figure 12. Taylor Garden at Elliott University Center .....	40
Figure 13. Floor plan of the lower level of Walter Clinton Jackson Library.....	41
Figure 14. Furniture plan of the lower level of Walter Clinton Jackson Library .....	41
Figure 15. The lower level of Walter Clinton Jackson Library- East side view.....	42
Figure 16. The lower level of Walter Clinton Jackson Library- West side view .....	42
Figure 17. Distribution of participants' native languages .....	53
Figure 18. Satisfaction with the interior design of preferred socialization spaces on Campus ....	57
Figure 19. Satisfaction with the design of utilized socialization spaces on campus.....	57
Figure 20. Jackson library furniture restriction sign.....	60
Figure 21. Evaluation of campus's encouragement of social interaction.....	67

Figure 22. Total number of groups and individuals observed at the Game area in the Kaplan Center .....	73
Figure 23. Total number of groups and individuals observed at the Jogging Track in the Kaplan Center .....	74
Figure B24. Context site (Elliott University Center) .....	105
Figure B25. Existing floor plan .....	106
Figure B26. Demolition plan .....	107
Figure B27. Floor plan .....	108
Figure B28. Furniture plan.....	109
Figure B29. Lighting plan.....	110
Figure B30. Before (Existing photo of Sharp lounge).....	111
Figure B31. After (Classroom) .....	111
Figure B32. After (Touchdown area in the classroom) .....	112
Figure B33. Furniture and finishes specification of the classroom and touch down area .....	113
Figure B34. Before (Existing photo of Office of intercultural engagement).....	113
Figure B35. After (Community space 1) .....	114
Figure B36. Before (Existing photo of Office of intercultural engagement).....	114
Figure B37. After (Community space 1) .....	115
Figure B38. Before (Existing photo of kitchen at the Office of intercultural engagement) .....	115
Figure B39. After (International Cafe) .....	116
Figure B40. Before (Existing photo of Office of intercultural engagement).....	116
Figure B41. After (Game area) .....	117
Figure B42. After (Community space 1 and international cafe).....	118
Figure B43. Furniture and finishes specification of the community space 1, International Café and Game area .....	119
Figure B44. Before (Transition area).....	120

Figure B45. After (Community space 2) .....	120
Figure B46. After (Community space 2) .....	121
Figure B47. Furniture and finishes specification of the community space 2.....	122
Figure B48. Before (Tv lounge).....	123
Figure B49. After (Community space 3) .....	123
Figure B50. After (Community space 3) .....	124
Figure B51. Furniture and finishes specification of the community space 3.....	125
Figure B52. Before Alderman lounge 1 .....	125
Figure B53. After (Restorative area) .....	126
Figure B54. Furniture and finishes specification of Restorative area.....	127
Figure B55. Taylor Garden .....	128
Figure B56. After (Taylor Garden).....	128
Figure B57. Furniture specification of Taylor Garden .....	129
Figure B58. Furniture plan.....	130

## CHAPTER I: INTRODUCTION

Young people face new challenges after entrance to university. This is especially true for international students who choose to study abroad. They leave their homes, family, and friends.

Additionally, they may interact with people from different cultural backgrounds. These interactions may be challenging; however, these interactions may help them get acclimated to their new surroundings (Torrano et al., 2020). Moreover, international students may be experiencing other pressures such as, assignment deadlines, financial problems, family issues, language barriers, culture shock, the feeling of responsibility for their family's expectations, etc. Therefore, studying abroad can create mental health problems among students (Banasik, 2021).

According to the PEW research center report, in the academic year 2021-2022, the population of international students in the U.S. increased by 3.8% to 948, 519 students from 914,095 students the previous year.

International students are susceptible to feeling a lack of belonging because they are a minority group on campus and their culture and values are different from others (Gijn-Grosvenor & Huisman, 2019). Therefore, they may not be able to quickly adapt to their surroundings. The cultural adaptation period is a challenging part of studying abroad which places international students at a higher risk of mental health problems (Mori, 2000).

The United States is a top destination for international students, despite a decline in attendance in recent years (Opendoor, 2022). International students face challenges as they adapt to campus life and American culture. To overcome the cultural shock, Dalby, Rubenstone, and Weir (1996) suggest several strategies, including making American friends, embracing both cultures, and seeking support. Integration into the community through social activities, community work, and cultural exchange can enhance international student adjustment and foster mutual

understanding between cultures. The presence of international students offers Americans an opportunity to learn about different cultures and perspectives (Sarkodie-Mensah, 1998). According to Briscoe et al. (2022), social networks and friendships have a significant impact on the experiences of international students in the U.S. These connections provide them with a sense of belonging and support. Due to factors such as cultural similarities, language barriers, and instances of racism or xenophobia, international students often form friendships with individuals from their own country. Difficulties in establishing connections with domestic students further reinforce this tendency. Nevertheless, regardless of their origin, these relationships play a crucial role in the social adjustment and connection of international students to the campus environment (Briscoe et al., 2022).

Loneliness and isolation are common challenges reported among international students. More than half of international students in the U.S. experienced isolation and loneliness within the first few months of arriving on campus (Girmay & Singh, 2019). Loneliness and isolation can reduce mental and physical health (Cherry, 2021a). Therefore, having a lack of social interaction and a sense of belonging are severe threats to international students' mental health.

The features of university spaces could increase or decrease student well-being (Hadavi, 2017). The campus is a significant space for international students; therefore, universities should try to consider some principles in design that foster connections among international students (Terrazas et al., 2017).. Combining good building design with programs promoting mental well-being allows buildings to offer accessible and diverse opportunities for users to improve their mental health (Regier, 2022).

In line with these considerations, an exploratory study by Marangell and Baik (2022) suggests that seeking input from international students can shed light on the social and

institutional dimensions of the university context, leading to better support for their mental well-being. In this context, the purpose of this study is to survey international students, observe spaces identified as areas where interaction occurs, and propose an evidence-based design for university spaces by applying social interaction theories.

### **Research Questions**

1. How do international students utilize campus spaces in their studies and interactions at UNCG?
2. What do international students perceive as barriers or opportunities for social interaction in campus spaces?
3. What are international students' experiences of isolation and loneliness when utilizing campus spaces?
4. How can spaces at UNCG encourage social interaction among international students?

These research questions assess the experiences of international students at UNCG regarding their utilization of campus spaces, encounters with isolation and loneliness, and the factors influencing their social interactions. This knowledge will aid in identifying specific factors and situations that either foster or hinder their sense of connection and belonging. By exploring perceptions and perspectives, we can obtain valuable insights to design spaces that facilitate socialization while effectively addressing the identified barriers. Ultimately, this study aims to uncover design strategies that can be implemented within UNCG's spaces to create an environment that promotes social interaction and reduces the feelings of isolation and loneliness experienced by international students.

## CHAPTER II: LITERATURE REVIEW

International students face different challenges related to studying abroad. Those challenges could lead to problems such as social isolation and the feeling of loneliness; those negative feelings are severe threats to students' mental health. Moreover, the features of spaces can increase or decrease an individual's mental well-being; therefore, these topics will be addressed in this chapter. The first section discusses the international student population in the U.S. and international students' challenges and experiences during their education. The second section presents an explanation of the key features, with a specific focus on four cultures: Indian, Iranian, Arabic, and Chinese. In the third section, the concept of mental well-being among international students is explained. Within this section, the discussion will also encompass the effects of feelings of loneliness and isolation on mental health, alongside an exploration of how social interaction influences these feelings. Ultimately, the focus of the third section lies on the impact of spaces on mental well-being.

### **International students**

#### ***International Student Population at UNCG***

The University of North Carolina at Greensboro (UNCG) ranked 312 out of 1,279 universities among international students ("The University of North Carolina at Greensboro," n.d.).

According to the UNCG "I Belong" survey conducted in 2019, approximately 27% of undergraduate students claimed that making new friends is often or always difficult for them. Additionally, 24% of students reported often or always feeling isolated (UNCG student affairs, 2019).

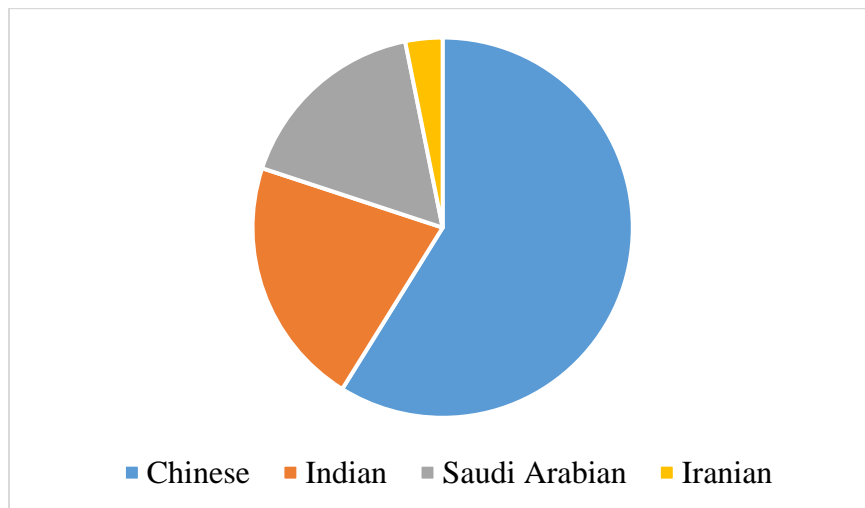
The "I belong" survey included cultural information about undergraduate students. For instance, over half of the participants stated a preference for interacting with people from a similar

background. Sixty-four percent of students who lived on campus expressed a sense of belonging at UNCG, and about half of the students reported a strong connection to UNCG (UNCG student affairs, 2019). Moreover, more than half of the students believed that they had opportunities to learn about society at UNCG. Additionally, students at UNCG were invited to share the types of cultural communities they were involved in, and their responses showcased a wide range of examples. The most frequently mentioned communities were Black/African American (150 responses), LGBTQ+ (96 responses), and Hispanic (64 responses). This enthusiastic endorsement highlights the significant contributions of various student organizations, informal affinity groups, shared identity communities, and university departments in fostering a strong sense of belonging among students at UNCG. These communities play a vital role in providing support and creating meaningful connections for students from diverse cultural backgrounds, thereby enhancing their overall experience at the university. (UNCG student affairs, 2019).

According to the UNCG International Program Center, there were 599 international students enrolled at UNCG in 2022 (Kelly J, 2022). Most of these students come from India, China, and Saudi Arabia (See figure 1). Additionally, according to College Factual, an annual average of 10 Iranian students choose UNCG to pursue their education ("The University of North Carolina at Greensboro," n.d.). Therefore, the cultures of India, China, Saudi Arabia, and Iran are included in this research project.



**Figure 1. Distribution of Iranian, Indian, Chinese, and Arabic International Student Communities at UNCG**



### ***International Student Experiences***

The experience of international students in higher education is shaped by four interconnected milieus: personal, familial, institutional, and national (Jones, 2017). These milieus encompass individual factors, family context, institutional values and support, and the socio-cultural aspects of the host country. Cena, Burns, and Wilson (2021) conducted a study on the academic experiences of international students in Northern Ireland. Using interviews with 16 undergraduate and graduate participants the study investigated challenges faced by international students due to the unique educational system, campus social dynamics, and living in a homogeneous society. The findings highlighted language barriers and cultural differences as significant obstacles to the adjustment of international students. The study underlines the importance for higher education institutions to recognize and tackle the diverse challenges faced by international students, emphasizing the need for understanding and support.

Lee and Rice (2007) conducted a study at a research university in the U.S. Southwest, interviewing 24 international students from 15 countries to understand their difficulties in the

host country. The findings revealed challenges such as unfairness, inhospitality, cultural intolerance, and confrontation, which were not solely due to students' adjustment but also shortcomings in the host society. Discrimination was identified as a key factor that hindered intercultural growth. The study emphasized the need for institutional accountability and the establishment of inclusive environments to support international students.

An inclusive environment values cultural diversity and encourages mutual respect, effective communication, clear expectations, and self-reflection (The University of the Sunshine Coast, n.d). In this setting, people of all cultural backgrounds can express themselves freely, engage fully in activities, and feel safe from abuse. A culturally inclusive university extends this concept, benefiting both students and staff by embracing diverse perspectives. Achieving this involves embedding equity principles into all aspects of the institution rather than treating them as mere policy requirements. Cultural diversity encompasses unique attributes beyond ethnicity, while inclusive practice uses interactive strategies to enrich teaching, learning, and research. Respectful relationships go beyond tolerance, appreciating, and valuing diverse cultural values. Overall, a truly inclusive environment is dynamic, fostering mutual learning and growth through ongoing awareness and appreciation of cultural diversity (The University of the Sunshine Coast, n.d).

## **Culture**

Culture plays a significant role in shaping individuals' strategies of action and their perspectives on life, influencing their personal experiences (Swidler, 1986). Building upon this understanding, Yusupova, Podgorecki, and Markova (2015) conducted research in Tatarstan, Russia to enhance multicultural education, mitigate culture shock, and foster diverse cross-cultural communication experiences among students. The researchers employed a modeling method to

delve deeper into the formation and education of an ethnically oriented personality capable of conflict-free international interaction. The study revealed that many students lack a developed culture of international relations, which hampers constructive intercultural dialogue. Destructive elements like intolerance and selfishness contribute to this issue. However, the pedagogical process and exposure to different cultures can improve intercultural understanding among students. The study underscores the importance of adopting a humanistic approach in addressing these challenges.

In a related context, Smith and Khawaja (2011) conducted a comprehensive review of acculturation models, emphasizing their applicability to international students who have distinct experiences compared to migrant and refugee populations. The review findings underscore the significant influence of universities on the acculturation process of international students, emphasizing the importance of interventions and support of the host society. Some interventions include establishing social support networks through mentorship programs and peer support groups, providing comprehensive intercultural education and orientation programs, and organizing integration activities to foster cross-cultural interactions. By implementing these interventions, the host institution can create a supportive and inclusive environment that facilitates the successful integration of international students.

This study specifically focuses on four cultures: Indian, Iranian, Arabic, and Chinese cultures. The following section will provide an explanation of key features within each culture, aiming to enhance understanding of their significance and contribute to improvements in design.

### ***Chinese Culture***

Traditional Chinese culture is deeply influenced by several core values that shape the mindset of its people, including harmony, benevolence, righteousness, courtesy, wisdom, honesty, loyalty, and filial piety (Lihua, 2013). The value of benevolence, rooted in Confucianism,

emphasizes the significance of familial bonds. However, this value extends beyond family relationships to encompass friendships and social connections, resulting in a comprehensive set of values that include justice, courtesy, wisdom, honesty, loyalty, self-discipline, and commitment.

Additionally, traditional Chinese culture places a strong emphasis on the significance of rituals, with specific ceremonial practices observed for different events and occasions (Lihua, 2013). These cultural values are reflected in various holidays in China, which play a significant role in family gatherings, commemoration, and celebration. Examples of these holidays include Chinese New Year's Eve, characterized by festive dinners and midnight celebrations to welcome the new year; Spring Festival, a ceremonious holiday known for family reunions; Tomb Sweeping Day, a time dedicated to honoring ancestors; Dragon Boat Festival, which pays homage to the patriotic poet Qu Yuan; Ghosts Festival, associated with Buddhist and Taoist traditions and restless spirits; Mid-Autumn Festival, also called the Moon Festival, celebrated under the full moon in autumn; and Winter Solstice, a time when the shortest day and longest night occur and special foods like dumplings and tangyuan are enjoyed. These holidays serve as cultural touchstones, fostering traditions and strengthening familial and societal bonds (StudyinChina, n.d.).

A study carried out in 2020 investigated the resemblances and distinctions between Xiangqi (Chinese chess) and Chess (international chess) concerning game rules and cultural background. The research examined variations in social structures, thinking patterns, and geography between China and the West, emphasizing the unique attributes of Chinese and Western cultures. Xiangqi and Chess are highly regarded as valuable cultural assets, reflecting the historical development and cultural influences of both China and the West. The pieces in these games symbolize diverse social classes, each playing distinct roles in their respective societies, and their movements also illustrate differing thinking patterns and geographical characteristics of China and

the West. Ultimately, these two games serve as significant demonstrations of cultural disparities, encompassing distinctions in social classes, thinking patterns, and geography between China and the West. The study emphasizes the importance of utilizing games like Xiangqi and Chess to foster mutual understanding, cultivate a healthy and harmonious relationship across various activities, and enhance cultural appreciation in the global community therefore, chess is a popular game in China, and chess players can be found in various settings such as schools, chess clubs, families, parks, and even on the street (Ma, 2020).

Ma (2015) argues that nutrition encompasses both cultural and biological aspects, as culture greatly influences all food-related behaviors. Therefore, food can be seen as a significant cultural element. China, in particular, has a rich and diverse street food culture. Street food is commonly enjoyed as a snack by the Chinese people. In China, numerous streets and markets offer an extensive array of street food options, making it one of the most diverse and plentiful street food scenes in the world (Kraig & Sen, 2013).

### ***Iranian Culture***

The Islamic Republic of Iran is a Middle Eastern country located between Arab Asia and Central Asia. Iranians do not consider themselves part of the Arab world nor do they share similarities with South/Central Asia. It's important not to confuse Iranians with Arabs as it indicates a lack of knowledge about the Middle East. Iranians often identify themselves as "Persian" because of their distinct Persian identity, which brings pride and a sense of belonging (Cultural Atlas, n.d. a). Iran has a progressive culture, and its people generally admire the capabilities of the West, contrary to the misconception that Iranians strongly dislike it. While "Iranian" and "Persian" are often used interchangeably, "Persian" specifically refers to the Persian ethnicity or the Farsi language. Iran has various ethnic minority groups who primarily speak Farsi

as a second language. Iranians have a strong thirst for knowledge, and despite restrictions, many women in Iran are highly educated. Family loyalty is crucial in Iranian society, which is collectivist. Iranians maintain a fair amount of personal space, slightly closer than the Western norm (Cultural Atlas, n.d.a).

Festivals display the cultural abundance found within a region. Iran celebrates a variety of festivals throughout the year, reflecting its multi-ethnic and diverse religious population. Some of the famous festivals in Iran, including Nowruz, Sizdeh Bedar, Chaharshanbe Soori, Yalda Night, Sepandarmazgan, Mehregan Festival, Tirgan Festival, and Sadeh Festival, hold cultural significance and are observed nationwide or in specific regions. Nowruz, the Persian New Year, is the most important festival, celebrated with cleaning, new clothing, and a special tablecloth featuring symbolic objects. Sizdeh Bedar marks the beginning of spring and involves outdoor activities and feasting. Chaharshanbe Soori is a fire-jumping festival held on the last Tuesday of the Persian year. Yalda Night celebrates the winter solstice with bonfires, traditional foods, and poetry readings. Sepandarmazgan is a day of celebrating love, friendship, and the Earth. Mehregan Festival honors commitments and relationships and is associated with the autumn harvest. Tirgan Festival takes place in Mazandaran and features traditional dishes, beverages, and cultural performances. Sadeh Festival is an ancient Zoroastrian ritual observed in the middle of winter, symbolizing warmth and light. These festivals showcase the rich cultural heritage and traditions of Iran (Eavar Travel, 2022).

In addition to these cultural festivities, Iran possesses an extensive and relatively unknown board gaming culture to those outside the Middle East. In Tehran, the capital city of Iran, numerous cafes dedicated to board games attract people of diverse ages, genders, and backgrounds.

These cafes offer a wide range of games, from complex Euro-style strategy games to simpler deduction puzzles. Over the past fifteen years, board games have become an integral part of Iran's modern culture, with the strict public social norms creating a demand for these venues as safe spaces. Board game cafes can be found in various cities across Iran, extending beyond Tehran, and their popularity is growing (Polygon, 2022).

In Persian culture, food holds great importance, and Persian street food is immensely popular, offering a diverse selection of healthy and flavorful choices. Despite being classified as street food, it provides an affordable solution to satisfy hunger while delivering a distinctive culinary experience that cannot be replicated in traditional restaurants. Therefore, street food not only addresses food accessibility concerns but also offers a conventional and beneficial culinary option for enthusiasts in Persian culture (Sheykhi, 2019; Persian Food Tours, 2019).

### *Arabic Culture*

Saudi Arabia's cultural landscape is shaped by a blend of tradition and modernity, influenced by religion, tribal heritage, economic development, and societal changes. Saudi Arabians generally have an indirect communication style, often understating their opinions to remain polite. Conversations may range from topic to topic, taking time to reach the point, as Saudis prioritize group harmony and avoid singling out individuals. Communication patterns can vary depending on the context, with more direct communication in familiar or business settings, and indirect and respectful communication with seniors. Personal criticism or advice should be approached sensitively and privately. Saudi men may speak loudly with a rising tone, while Saudi women are expected to be quieter. Poetry and emotive language are commonly used in communication. In Saudi Arabia, there is a cultural belief that discourages the depiction of mankind or the simulation of God's creations. As a result, statues of people are rarely found in the

country, and mannequins often lack a head to avoid a complete representation of a person. It's important to note that not all Saudi Arabians are wealthy, as social differences in wealth exist, similar to many other countries. Many individuals who travel abroad do so with the support of government sponsorship (Cultural Atlas, n.d.b).

Saudi Arabia may not seem like a festive country at first glance, with its limited official holidays primarily focused on Muslim holy days. However, there are notable festivals that showcase the lively cultural scene of the kingdom. The Janadriyah National Festival features horse and camel races, showcases artisan craftsmanship, and highlights talented poets. Milad al-Nabi celebrates the Prophet Muhammad's birthday with elaborate decorations, poetry recitations, feasts, and processions. The Jeddah Festival attracts tourists with its variety of events, including sampling traditional cuisine and enjoying fireworks. The unification of the Kingdom Day commemorates Saudi Arabia's founding, now celebrated with public expressions of national pride. Eid ul-Fitr and Eid al-Adha are religious festivals marked by prayers, feasts, and acts of kindness. These festivals bring vibrancy and cultural richness to Saudi Arabia, providing opportunities for locals and tourists to immerse themselves in the country's traditions and heritage (iExplore, n.d.).

Saudi Arabia, like other countries in the Middle East, is currently witnessing a rapid expansion of its online gaming community, making it one of the largest and fastest-growing communities globally. The majority of the population in this region is under 25 years old, which is a key driver of the market's growth. As of 2014, the market was valued at approximately \$1.6 billion. Among the Middle Eastern countries, Saudi Arabia boasts the largest market, characterized by a high level of gaming activity and expenditure, as acknowledged by regional game developers.

In Saudi Arabia, where the conservative culture limits the presence of cinemas and music concerts, video games have emerged as a popular and favored form of entertainment for young



people, providing them with a recreational outlet. This embrace of online video and social media is also evident in the country's enthusiasm for gaming. Saudi gamers demonstrate a remarkable willingness to invest in games, spending three times more than their American or European counterparts. This financial commitment reflects the nation's strong passion for gaming.

Furthermore, the emergence of next-generation Saudi game developers showcases the country's increasing influence in the gaming industry, earning them the title of the Arab digital generation (NPR, 2015).

In addition to its thriving gaming community, Saudi Arabia offers a diverse culinary experience influenced by the neighboring regions. The country's traditional dishes share similarities with Middle Eastern cuisine from countries such as Yemen, Egypt, Oman, and the UAE. Over centuries, these countries have exchanged recipes and flavors, making it challenging to determine the exact origins of certain dishes. Saudi Arabia also embraces street food as a prominent aspect of its culinary scene, similar to many other countries. Local shops and restaurants offer popular Middle Eastern Street food options like falafel and shawarma wraps, which are affordable and convenient. (Agoda, 2020).

### ***Indian Culture***

India is a culturally diverse country with a rich heritage. Indians take pride in their unique culture, celebrating achievements in agriculture, technology, and various artistic forms. In India, privacy is limited due to the dense population, with multi-generational households and animals freely roaming public spaces. India's ethnic diversity is vast, with Indo-Aryan and Dravidian linguistic backgrounds being the largest. India's social organization is defined by the caste system, a long-standing system of hierarchy. The caste system comprises the varna system, which classifies individuals based on their birth and occupation, and the Jati system, which further categorizes

people into specific groups. Although laws prohibit caste-based discrimination, remnants of social assumptions and practices influenced by the caste system persist, especially in rural regions.

Indians exhibit adaptability, creativity, and an entrepreneurial spirit, approaching challenges with a cooperative and light-hearted attitude (Cultural Atlas, n.d.c).

Moreover, India is a land of diverse festivals, where people from different religions coexist. Festivals are celebrated throughout the year, but the period from October to January is particularly vibrant. These festivals bring people together, create a sense of community, and showcase the religious and cultural diversity of India. They are marked by vibrant celebrations, rituals, music, dance, and feasting. Festivals are an integral part of Indian life and provide a glimpse into the rich cultural heritage of the country. Some of the most famous festivals in India include Diwali, the festival of lights, which is celebrated with the lighting of lamps, fireworks, and sharing of sweets; Holi, the festival of colors, where people play with vibrant colors and water; Dussehra, which marks the triumph of good over evil and is celebrated with the burning of effigies; Navratri, a nine-day celebration dedicated to the worship of Goddess Amba; Durga Puja, a grand celebration in Bengal that includes idol worship, cultural performances, and feasting; Krishna Janmashtami, the celebration of Lord Krishna's birth; Ganesh Chaturthi, the festival dedicated to Lord Ganesha, where elaborate idols are installed and immersed in water; and GURPURAB, a significant Sikh festival commemorating the lives and teachings of the gurus (Bajaj, n.d.).

Board games, such as Ludo and Chess, have always been popular in India, particularly among millennials. However, the advent of online games and their easy availability led to a decline in the craze for physical board games. To address this, game developers transformed board games into digital formats, enabling people to enjoy them with friends from the comfort of their homes.

The introduction of digital board games like Ludo King, Chess, and Snakes and Ladders in India revived the nostalgic charm of these games, offering both arcade and competitive experiences. Ludo tournaments on various platforms and the increasing popularity of chess attracted players of all skill levels. These online board games appeal not only to older generations but also to millennials and Gen Z, providing a less stressful and more enjoyable alternative to highly competitive games. Additionally, their compatibility with basic devices and availability of an offline mode makes them accessible and convenient for uninterrupted play. Ultimately, these online board games serve as a means to relax, reconnect with friends, and evoke a sense of nostalgia, transporting players back to their childhood (PCQuest, 2021). Online gaming has gained significant popularity in India, particularly among the younger population, owing to the widespread availability of the internet and smartphones. Young players in India frequently engage in gaming activities on their mobile devices and PCs, often connecting with their friends in the process.

Online gaming not only provides entertainment but also fosters productivity and teamwork, even in office environments. The country's youthful demographics and increasing internet penetration contribute to the thriving popularity of online games. With a large number of smartphone users and affordable internet data, India offers considerable opportunities for online gaming companies. Moreover, the COVID-19 pandemic further accelerated the growth of online gaming as people sought engaging activities during lockdowns. The development of mobile apps has played a crucial role in driving the popularity of online games in India. As the demand for mobile and online games continues to soar, the future of the gaming industry in India appears promising (Achary, 2022).

India, known for its diverse cultures and traditions, is a land of multiplicity. In addition to its varied languages, religions, and natural landscapes, Indian cuisine adds another layer of

diversity to the country. The different regional cuisines of India distinguish it from other nations. Particularly enticing are the street foods that form an integral part of the culinary delights found throughout the country. Sold in public areas such as markets or stalls, street foods are typically affordable and incredibly flavorful. Each city in India boasts its own specialties, offering a wide array of delectable snacks (Barnwal, 2019). Street food is a popular and widely consumed culinary option in India, enjoyed throughout the day from breakfast to dinner. It is also a common choice for an afternoon snack, often brought home to accompany tea. Additionally, street food holds a significant presence during festivals, becoming an integral part of the celebratory experience (Kraig & Sen, 2013). Indian cuisine is renowned for its unique flavors and cooking techniques, influenced by a rich tapestry of cultures and historical periods. The extensive use of spices not only adds taste but also imparts nutritional and medicinal properties to the dishes. Overall, Indian cuisine is a vibrant amalgamation of diverse flavors, ingredients, and cooking styles, creating a culinary experience that is both rich and captivating ("National Hospitality and Consulting Group," n.d.).

### ***Summary***

American universities have a significant international student population, but many face difficulties in making friends and feeling isolated. The University of North Carolina at Greensboro (UNCG) recognizes this issue and aims to create a sense of belonging on campus for these students. Understanding and appreciating the distinct values and customs of various cultures is crucial. Engaging in activities like games, exploring street food, and participating in festivals can foster cultural understanding and appreciation among students from diverse backgrounds.

## **Well-being**

"In simple terms, well-being can be described as judging life positively and feeling good" ("Well-being Concept," 2018, p.1). Some activities can increase an individual's well-being, such as physical activities, a healthful diet, and social interaction (Janta et al., 2014). Well-being includes different topics like mental, physical, and social domains ("Well-being Concept", 2018). American Council on Education (ACE) recognizes the significance of institutional practices in promoting campus mental health and well-being, which greatly influence student success. Students experiencing poor mental health face the risk of lower GPAs, disrupted enrollment, or even dropping out (2023).

Bewick et al. (2010) researched undergraduate students mental well-being before and after entering university for two years beginning with their preregistration at one U.K. university. They determined that stress is the highest in the first term and decreases gradually in the second and third terms, but the level of distress never returned to preregistration levels (Bewick et al., 2013). Torrano et al. (2020) discuss how psychological distress could impact students in the short- and long-term. Short-term impacts include poor college attendance, performance, and engagement. Long-term impacts include dysfunctional relationships, recurrent mental health problems, university dropout, lower rates of employment, and reduced personal income.

Michalski et al. (2020) investigated the connection between community and belonging with self-rated general and mental health and their effect on human life at different ages. This study found that mental and physical health is poorer among people who possess a lower sense of community and belonging than people who feel a higher amount of sense of belonging and community (Michalski et al., 2020). Cipolletta, Mercurio, and Pezzetta (2022) conducted a study with 139 international students to examine the relationship between their well-being, their

perceptions of social support, and their reliance on various resources. The findings revealed that higher well-being is associated with greater perceived support and reduced distress among international students. Additionally, students from collectivist cultures and those who have been at the university for a longer time experienced higher levels of distress and perceived lower levels of support. Cipolletta et al. (2022) suggested a positive relationship between social support and well-being, highlighting the role of social support in mitigating feelings of loneliness.

Marangell and Baik (2022) investigated the relationship between students' sense of belonging and their overall well-being among 601 international students at the Metropolitan University in Australia. The research focused on the significance of belonging among international students during the pandemic. The findings highlight the role academic educators have in nurturing students' sense of belonging to their class and the broader learning community. It is suggested by research that when teachers genuinely show interest in their students and create inclusive and supportive learning environments, it enhances students' sense of belonging (Marangell & Baik, 2022).

In 2007, a study was conducted by Jung, Hecht, and Wadsworth to examine the correlation between identity gaps and depression levels among international students. The researchers analyzed data from 218 students to test a hypothesized path model. They state that international students may face limitations in expressing their true selves when interacting with members of the host culture due to cultural disparities and difficulties in communication. Additionally, they might encounter discrepancies between their self-perception and how they are perceived by Americans. These inconsistencies in identity, are known as "identity gaps". The results indicated that both acculturation level and perceived discrimination had significant predictive effects on identity gaps.

Furthermore, among the two types of identity gaps, namely personal-enacted identity gap and personal-relational gap, it was observed that the personal-enacted identity gap has a more significant impact on the psychological well-being of international students. Not only did the personal-enacted identity gap directly contribute to depression, but it also served as a mediator, influencing the effects of all other variables on depression. This study underscores the importance of recognizing identity gaps in the mental well-being context of international students (Jung et al., 2007).

In a doctoral dissertation conducted by Yang (2010) at the University of Kansas, the research aimed to investigate the relationships between stress, coping strategies, and psychological well-being among American graduate students and Asian international graduate students from Taiwan, China, and South Korea. The study included a total of 311 participants, comprising 131 American graduate students and 180 international graduate students from Taiwan, China, and South Korea, representing a diverse cross-section of 90 universities in the United States. Employing a variety of statistical analyses, including Pearson correlation coefficients, factorial ANOVAs, and multiple regression, the research revealed that Asian international graduate students, as a heterogeneous group, experienced higher levels of stress compared to their American counterparts. Furthermore, the study consistently observed that higher academic, environmental, and family-related stress was associated with maladaptive coping strategies, while the use of adaptive coping mechanisms correlated with greater psychological well-being. Notably, doctoral students from all backgrounds reported lower overall stress levels and higher psychological well-being. Interestingly, although Taiwanese international graduate students tended to employ maladaptive coping strategies, they still reported significant psychological well-being. Additionally, perceived English language

proficiency emerged as a strong predictor of stress, coping strategies, and psychological well-being, particularly among Chinese and Korean international students (Yang, 2010). (Yang, 2010).

### **The feeling of isolation and loneliness**

People usually experience feelings of isolation when they are physically apart from others. Moreover, loneliness and isolation can reduce mental and physical health (Cherry, 2021b). The study conducted by Cemalcilar and Falbo (2008) further supports the existing body of research by highlighting the psychological challenges faced by educated individuals during the international transition, regardless of their proficiency in the host culture language.

Consistent with previous findings, the results revealed that the majority of international students in their first year at the University of Texas at Austin experienced a notable decrease in their psychological well-being after approximately three months. However, the results also showed that these students exhibited a significant increase in their identification with the culture of their host country while maintaining consistent levels of identification with their home culture (Cemalcilar & Falbo, 2008).

Loneliness and isolation are common challenges reported among international students. Sawir et al.(2008) investigated the cultural loneliness among 200 international students in Australia. They found that 67% of international students experienced problems of loneliness and isolation, especially in the early months of entrance to the new country. They concluded that to reduce feelings of loneliness among international students, universities should consider two critical factors in their programs. First, they should create stronger bonds between international students and local students. Second, academics should help international students to adapt to new



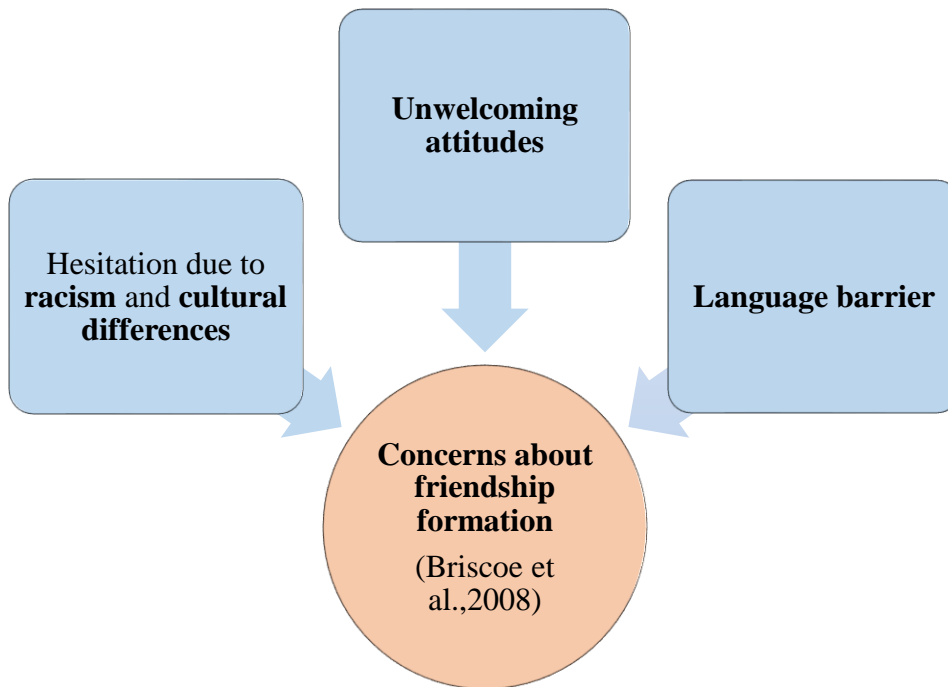
cultures and situations. For example, they can schedule collaborative activity programs such as sports, or service-oriented clubs, and other associations of peers for students (Sawir et al., 2008).

Girmay and Singh (2019) described three kinds of loneliness. The first is feeling lonely because of being away from their family and friends. The second kind of loneliness is because of a lack of social interaction. Finally, the language barrier and cultural loneliness which are obstacles to social interaction cause the third type of loneliness (Girmay & Singh, 2019). When students lack connections with their peers on campus, they often struggle to adapt to academic challenges. This lack of social connection can result in decreased motivation and self-efficacy due to the absence of external support. International students from collectivist cultures may experience even higher levels of stress as a result of social isolation, as they are accustomed to receiving support from their communities and families back home (Wolff, 2014).

Geary (2016) delves into the challenges that international students face and offers suggestions to foster meaningful interaction with their American peers. The author emphasizes the significance of social support for international students, as they often experience isolation and homesickness. However, cultural differences and language barriers can hinder their integration with American students. To enhance communication and interaction, several ideas are proposed, including intensive English as a Second Language (ESL) courses upon arrival, year-long service-learning internships, intercultural friendship groups, and international dormitory options with assigned roommates. These initiatives aim to alleviate the sense of isolation and loneliness experienced by international students by improving their communication skills, fostering cultural understanding, and cultivating genuine friendships among all students (Geary, 2016).

International students often hesitate to interact with domestic students due to concerns about experiencing racism and encountering cultural differences. Unfortunately, unwelcoming attitudes from domestic students discourage international students from pursuing friendships. As a result, international students primarily form relationships with individuals from their own country, challenging the common belief that the main obstacle to friendship formation lies solely with U.S. domestic students (Briscoe et al., 2008).

**Figure 2. Obstacles to friendship formation for international students**



In a study conducted by Janta et al. (2014), the coping strategies of doctoral students dealing with feelings of isolation and loneliness were investigated. The ethnographic study revealed that both domestic and international students at different stages of their doctoral studies experience these feelings and employ various forms of social interaction, including face-to-face and online interactions, to address the issue. The authors emphasized the significance of physical space, as spending time in a solitary room can contribute to feelings of isolation and loneliness.

Researching multifunctional spaces was suggested to meet the changing needs of doctoral candidates.

Establishing strong connections and social support networks is crucial for international students facing numerous challenges during their adaptation to a new environment. While positive social relationships are important for students from both collectivistic and individualistic cultures, the significance of interpersonal connectedness is particularly emphasized in collectivistic cultures (Wolff, 2014).

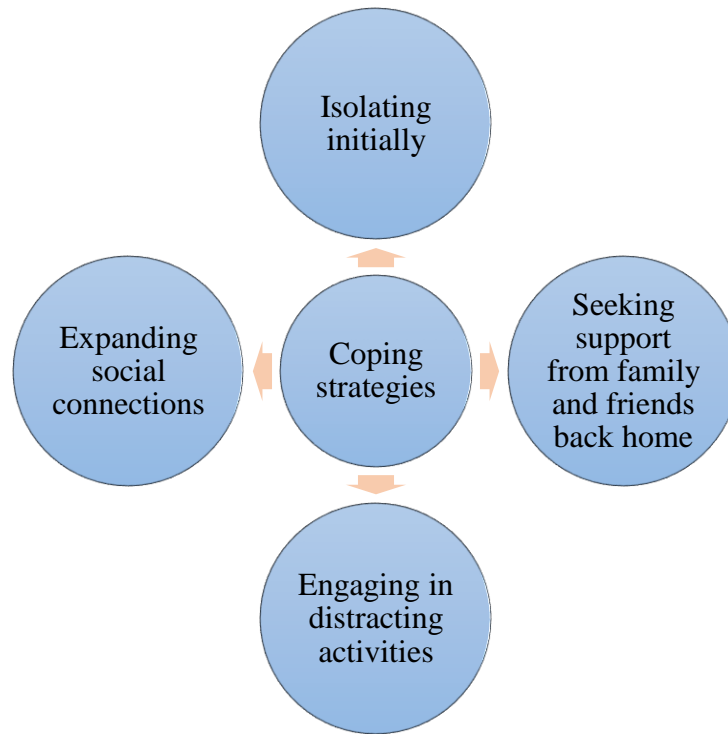
Priestley et al. (2022) highlighted the negative impact of a lack of positive and inclusive social interaction on students' well-being. The study explored the challenges and possibilities of supporting social relationships among students at U.K. universities, including their interactions with peers, academic staff, and the local community. It also examined how these relationships intersect with mental well-being. The research findings shed light on the sources of conflict and misunderstandings that contribute to student relationships with their peers, staff, and residents. However, they also reveal opportunities for positive and inclusive social interactions. The study highlights the impact of limited interaction, which both stems from and leads to perceived discrimination and dissatisfaction. The lack of contact perpetuates stereotypes and prejudices among students, while feelings of anxiety, rejection, and threat reinforce negative assumptions and attitudes. These findings underscore the importance of adopting a comprehensive university-wide approach to mental well-being that includes staff and the broader university community.

Stokes (1985) conducted a survey among undergraduate students. To measure loneliness, the study assessed participants' social networks and personality traits, including extraversion and neuroticism, along with their self-reported feelings of loneliness. The study found that students with denser social networks reported lower levels of loneliness. Sawir et al. (2008), and Zhou et

al. (2008) found that social activities were widely used by international students as a preventive measure against loneliness and homesickness. Similarly, Lee et al. (2006) reported that participating in cultural activities related to their home country was a strategy supported by international students to prevent loneliness.

In a study conducted at a university in the UK, Wawera and McCamley (2020) investigated loneliness among international students using both quantitative and qualitative data collection methods. They employed the De Jong Gierveld Loneliness Scale (DJGLS) in a survey to quantitatively assess loneliness levels and conducted in-depth interviews to qualitatively explore the individual experiences and perspectives of students on loneliness. The study encompassed 61 participants from 25 different countries, representing both Collectivist and Individualist cultures. The findings revealed that 72.13% reported experiencing loneliness since their arrival in the UK, with an average level categorized as moderate. Loneliness varied in intensity and duration, often observed at the beginning of their stay or during changes in their social network. Participants shared similar coping strategies, such as initially isolating themselves, seeking support from family and friends back home, and engaging in activities to distract themselves and expand their social connections. The study highlighted the significance of university services in addressing loneliness. However, it also uncovered barriers hindering the accessibility of these services, with some international students remaining unaware of the available support services, leading them to avoid seeking assistance. Moreover, students, particularly from Collectivist cultures, exhibited hesitation and fear when considering attending these services alone due to concerns about feeling lost or uncomfortable in an unfamiliar environment (Wawera & McCamley, 2020).

**Figure 3. Coping strategies for loneliness among international students (Wawera & McCamley, 2020)**



***Summary***

In summary, well-being encompasses mental, physical, and social domains. Activities such as physical exercise, maintaining a healthy diet, and social interaction contribute to well-being. The mental well-being of international students is influenced by factors such as social support, a sense of belonging, and social interaction. Loneliness and isolation are common challenges faced by international students, which can negatively impact their mental and physical health. Creating stronger bonds between international and local students, helping international students adapt to new cultures, and providing collaborative activities can address feelings of isolation and loneliness. Sense of belonging is crucial for international students, and fostering inclusive environments through interactions with faculty and staff plays a vital role in enhancing their well-being. Social interaction and establishing social support networks are

important for international students' adaptation and well-being. By recognizing and addressing the challenges faced by international students, universities can contribute to their overall well-being and success.

## **University spaces**

### ***How Can University Spaces Improve Well-being?***

Place and its features play a significant role in influencing individuals, as they can either enhance or diminish their well-being. Promoting mental health on college campuses through design involves incorporating elements that connect with nature, expanding opportunities for social interaction, and addressing diverse student needs. Enhancing natural lighting, and views, and creating a vibrant campus culture can greatly impact mental well-being. Providing diverse spaces and seating options caters to different learning preferences. Furthermore, addressing specific challenges such as food insecurity through strategic placement of essential services can help reduce mental health disparities (Rechkemmer, 2023). Engaging students in the design process through surveys and workshops ensures their needs are effectively addressed (Rechkemmer, 2023).

Colenberga, Jylhäc, and Arkesteijn (2021) conducted a literature review on the relationship between interior office space and health, finding that mental well-being is connected to various spatial features. Negative effects were observed in open-plan offices, shared rooms, and environments with higher background noise. Conversely, physical activity, daylight, and green spaces were positively associated with health.

Terrazas et al. (2017) explored the influence of place-making on campus in relation to international graduate student persistence. Through interviews with 16 international graduate students, the study revealed that access to a combination of places that foster growth, social

interaction, restoration, and safety plays a significant role in reducing dropout rates and reinforcing the decision to continue education abroad. As the campus is a crucial space for international students, universities should consider design principles that foster a connection between university spaces and these students.

The university of Melbourne conducted a study about different effective design features on students' well-being. The study highlighted the importance of improving indoor environments by addressing elements such as air quality, thermal comfort, noise control, and lighting. Creating communal areas and implementing strategies that promote social interaction fosters connections and collaboration. Embracing biophilic design principles, which integrate natural elements into indoor spaces, has been shown to improve mood, reduce anxiety, and enhance cognitive function (University of Melbourne, 2021).

There are a lot of interior spaces in universities whose features are influential on students, such as classes, lounges, and recreation centers (Rands & Gansemer, 2017); this effect could be positive or negative depending on the design. The built environment can limit social interactions or affect the modes of social action. For example, students can have more accessible communication with each other in a class with mobile furniture thereby encouraging them for more activities and engagement (Rands & Gansemer, 2017).

The built environment plays a significant role in creating opportunities for students to connect with their peers. Designing spaces that cater to different group sizes and linking them to circulation areas allows for both formal and informal interactions. Creating environments that feel like home with shared social spaces, natural light, and open doors encourages students to connect with each other. Comfort is key in facilitating social interactions, with components such as personalized control over HVAC systems, natural daylight, and varied furnishings enticing

students to spend time in these spaces. Architecture should consider the climate and provide shelter or open floor plans accordingly (HMC Architects, 2019).

Designing circulation spaces within buildings and public areas to be inclusive and engaging can foster social interaction and allow individuals to reach their potential. The University of Cincinnati's Lindner College of Business serves as an example, with 40% of the building dedicated to flexible circulation spaces that attract students from various disciplines. Offering a range of seating options and supporting informal activities has reduced pressure on meeting rooms and increased interaction levels (Henning Larsen Architects, 2020).

Elmashharawi (2019), examines the importance of integrating biophilic design principles in educational spaces, particularly at universities, to improve students' well-being. It asserts that humans possess an innate connection with nature, and disregarding this bond can negatively impact various aspects of individuals' lives. The study focuses on the Innovation Center "OZU X" at Ozyegin University as a case study, exploring how the incorporation of biophilic design elements in the center affects the psychological and social well-being of students. The findings highlight the significant role of the architectural environment in human psychology and emphasize the importance of creating healthy and pleasant learning spaces. In other words, the biophilic design allows people to connect to the natural environment. Therefore, implementing biophilic design in educational settings is crucial to provide students with an environment that fosters creativity and inspiration. Overall, the research underscores the goal of re-establishing the connection between the built environment and nature to nurture students' innovation and creativity (Elmashharawi, 2019).

Ellis (2018) investigated the impact of community space design on the student experience in higher education. The study interviewed seven participants from a commuter campus in



Southern California. The findings highlighted the critical role of well-designed community spaces, as students expressed a strong preference for comfortable and versatile seating options. The overall condition of the space, including well-maintained furniture, was also recognized as significant. Students utilized these spaces for various purposes, including studying, socializing, and relaxing; underscoring their multifunctional nature. Importantly, the study revealed that students particularly emphasized the need for spaces that fostered a sense of safety and security, allowing them to engage in these activities with peace of mind (Ellis, 2018).

The design of university campuses often neglects their intended function as social spaces, leading to difficulties in creating welcoming and functional environments. Issues arise from the use of unconventional shapes and bright colors that can quickly become dated and dissonant. Outdoor spaces, such as walkways and squares, often lack communal activities and greenery. Effective design of these spaces requires considering both the interior and exterior, creating nurturing environments that foster fruitful conversations and encounters (Guardian US, 2015). Additionally, the comfort of these spaces, including thermal, acoustic, and ergonomic design, significantly impacts the well-being of individuals. Flexibility in design is crucial for busy university environments, allowing spaces to be easily adapted and repurposed. The promotion of a sense of community through design can be achieved by opening up facilities to the public creating hubs for collaboration, celebration, and exchange, benefiting both the community and the institution (Guardian US, 2015).

Designing a learning environment that supports cultural diversity goes beyond the classroom and involves considerations for the entire facility. Intuitive signage and clear wayfinding are crucial for students with diverse backgrounds, with touch-screen maps programmed in multiple languages and voice-activated features to assist students with language

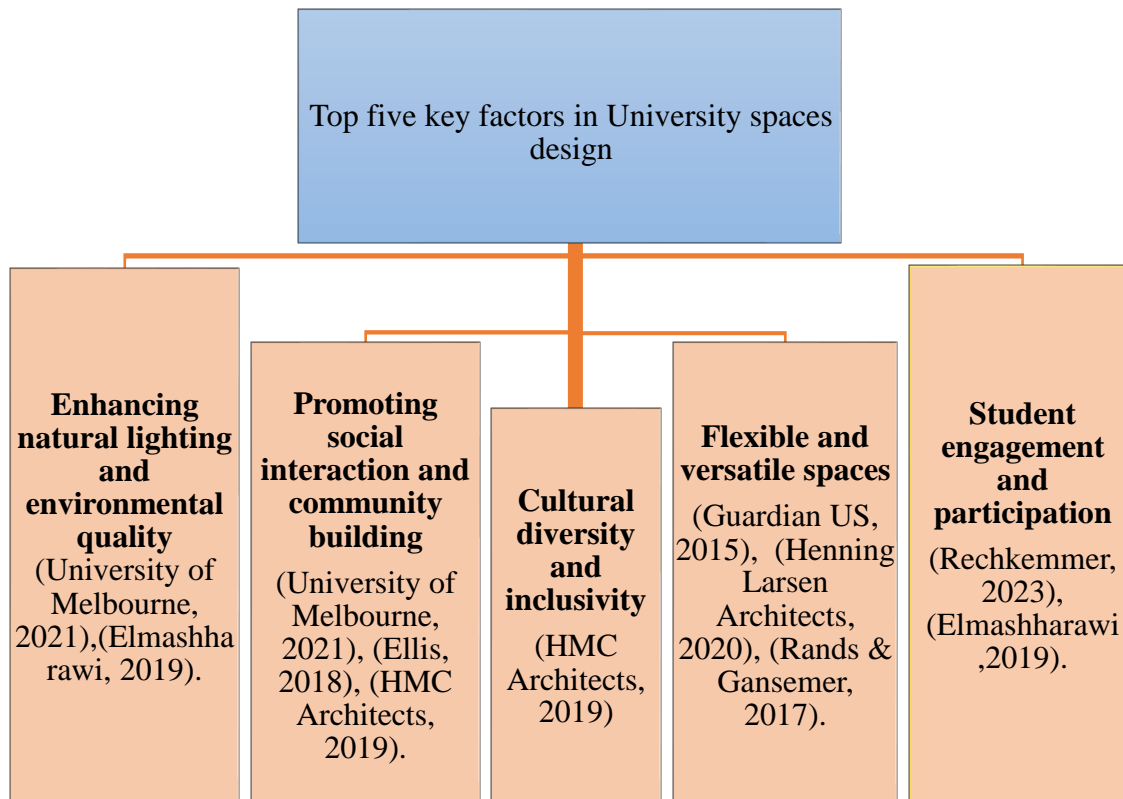
and motor limitations. Universities can also incorporate graphics and artwork that celebrate cultural diversity, such as murals and art displays showcasing the talents and cultures of students and teachers. Creating writable surfaces in classrooms encourages student participation and collaboration, fostering a culture of acceptance and inclusion. By implementing these design features, schools can create a supportive and inclusive environment for students of diverse backgrounds (HMC Architects, 2019).

El-Darwish (2022) conducted a study on the importance of social spaces in university outdoor campus areas and their impact on students' well-being. The research focused on the gathering spaces for students on campus and their lack of integration and analysis with vehicle movement. It was suggested to create a pedestrian spine at the center of the campus, incorporating landscape elements based on student feedback. These spaces should be separate from parking areas and vehicle routes, with strategically placed entrances guiding students to designated social interaction areas.

A study investigated how common outdoor spaces affect social interaction among students at Salahaddin University-Erbil's College of Engineering campus in Iraq. It highlights that these outdoor areas have not been adequately considered in terms of their location and distribution, potentially resulting in limited communication and social interaction among students. A quantitative survey was conducted, involving 80 randomly selected male and female students. The findings indicate the highest level of satisfaction observed in the quality of open spaces where flora, green areas and walkways were present. The study concludes by offering recommendations for designing common open spaces on educational campuses to foster effective social interaction among students (Mustafa & Danoon, 2020).

Salih and Ismail (2017) provide an overview of the significance of natural environments and green open spaces for social interaction and outdoor recreation. Through a qualitative content analysis of various literature, studies, and sources, the study identifies the factors that influence social interaction in these spaces. The findings emphasize the importance of creating appropriate physical spaces that consider design, activities, access and linkage, administration and maintenance, place attachment, and users' characteristics. The research results confirm that establishing suitable spaces and incorporating criteria and components of green open spaces are crucial for fostering positive social interaction. The study also highlights the benefits of social interaction in these spaces, such as improved health and well-being, reduced stress, socio-demographic diversity, urban renewal strategies, economic enhancement, and increased property value.

**Figure 4. Key factors in university space design to enhance student well-being**



## *Summary*

This comprehensive collection of studies explores the role of design and physical spaces in promoting well-being and social interaction in various university settings. The articles highlight the importance of incorporating elements that connect with nature, expanding opportunities for social interaction, and addressing diverse student needs. Enhancing natural lighting, views, and campus culture, as well as providing diverse spaces and seating options, are identified as key factors. Strategic placement of essential services and engagement of students in the design process are also highlighted. The findings emphasize the positive impact of these design considerations on mental health, academic performance, and student satisfaction. The integration of biophilic design principles, the use of restorative spaces, and the significance of lighting and cultural diversity in design are explored. The importance of exterior spaces, such as green areas and gathering spaces, in promoting social interaction and reducing stress is emphasized. Overall, these studies provide valuable insights into creating university environments that enhance well-being and foster positive social interactions among students and staff.

While these studies provide valuable insights into the role of design and physical spaces in university settings, it's important to acknowledge some potential limitations. Firstly, the reviewed articles tend to focus on positive aspects of design interventions, and there might be room for a more balanced exploration of potential drawbacks or challenges associated with implementing these changes. Additionally, the extent of generalizability of the findings to various university contexts and cultural settings could be further scrutinized. A more in-depth discussion of potential variables that may influence the effectiveness of these design elements, such as regional differences or institutional characteristics, would provide a more nuanced

perspective. Further research could aim to address these gaps to strengthen the foundation for implementing these design strategies in diverse university settings.

## CHAPTER III: METHODOLOGY

This chapter offers an overview of the qualitative methodology employed to investigate the experiences of international students at UNCG concerning isolation, loneliness, and social interactions. It is divided into several sections. The first section discusses the participants and sample selection process. The second section covers the data collection methods. The third section outlines the data analysis techniques employed. The fourth section addresses the ethical considerations and Institutional Review Board (IRB) approval. The methodology involves conducting a survey to gather information on participants' perceptions of isolation, loneliness, and their use of university spaces. Additionally, observations were conducted focused on participant identified preferred spaces to examine patterns of usage. The study aims to answer the following research questions:

1. How do international students utilize campus spaces in their studies and interactions at UNCG?
2. What do international students perceive as barriers or opportunities for social interaction in campus spaces?
3. What are international students' experiences of isolation and loneliness when utilizing campus spaces?
4. How can spaces at UNCG encourage social interaction among international students?

### **Context of Study and Participants**

The research took place at UNC Greensboro campus from January 9, 2023, to April 15, 2023, and involved a questionnaire (phase 1) and observations (phase 2). Participant recruitment was conducted via email through the International Program Center at UNCG. The survey was distributed via email to the entire population of international students at UNCG, ensuring comprehensive coverage. Participants were graduate and undergraduate international students

enrolled at UNCG. Reminder emails were sent on January 30, 2023, and February 27, 2023. To encourage student participation in the survey, five Starbucks gift cards, each valued at \$10, were offered as incentives. This approach aimed to show appreciation for their time and motivate them to provide candid feedback. A total of 36 international students voluntarily participated in the survey, resulting in a response rate of 6%. Prior to taking part in the survey, participants were required to fill out a consent form.

### **Instrument and Data Collection Methods**

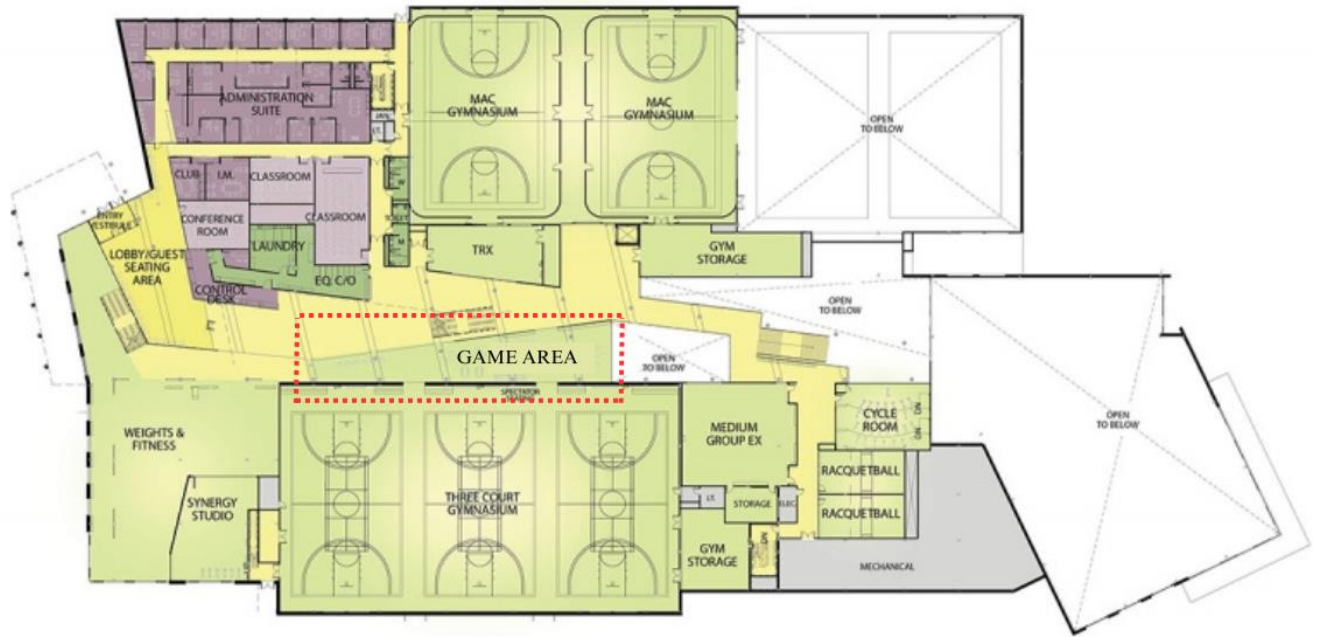
Phase 1 consisted of a questionnaire with three sections, encompassing 17 items (Appendix A). The initial section contained a single closed-ended item concerning participants' demographics, specifically their native language. The subsequent section included eight items focusing on participants' experiences of loneliness and isolation. Three questions were presented in a closed-ended format, derived from the Office for National Statistics study (2018), while five open-ended questions were developed by the researcher. The final section of the survey comprised eight items investigating student preferences for social interaction in campus spaces.

Among these, three questions took an open-ended approach, while four were closed-ended. The survey aimed to gather data on demographics, loneliness, isolation, and preferences for social interaction within campus spaces.

Following the survey, observations were conducted to gain insights into how international students utilize university spaces. The selection of spaces for observation was based on the survey participants' responses, identifying Leonard J. Kaplan Center for Wellness, Elliott University Center (EUC), and Walter Clinton Jackson Library as the top three preferred areas for socializing, group learning, and recreation on campus. Two areas were chosen for observation

within Kaplan and the EUC, and one area within the library. The areas were selected based on participant feedback and their potential to facilitate group activities and social interactions.

**Figure 5. Main-level floor plan of the Leonard J. Kaplan Center**



**Figure 6. Furniture plan of game area at Kaplan Center**

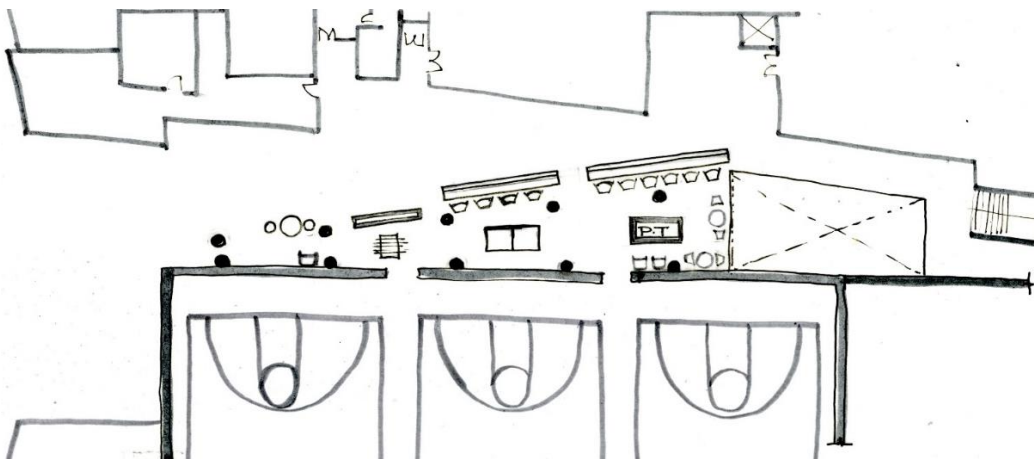




Figure 7. Game area at Leonard J. Kaplan Center



Figure 8. First-Floor Plan of the Elliott University Center

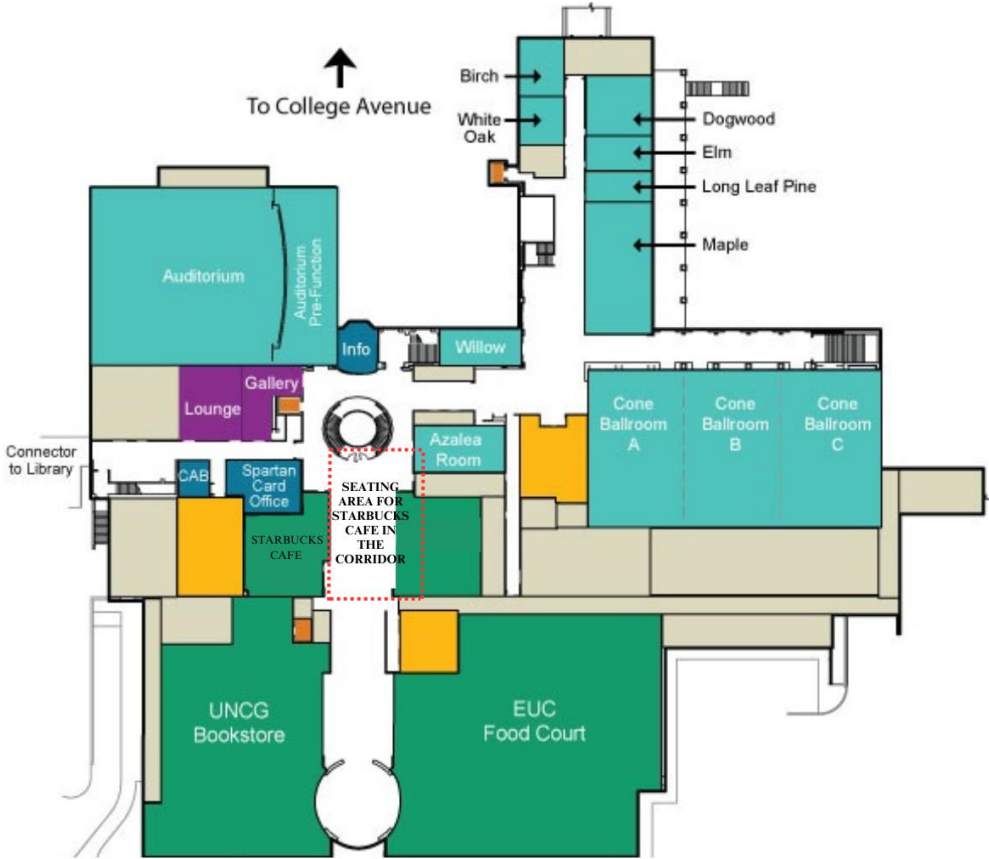


Figure 9. Furniture plan of seating area outside Starbucks Café at Elliott University Center

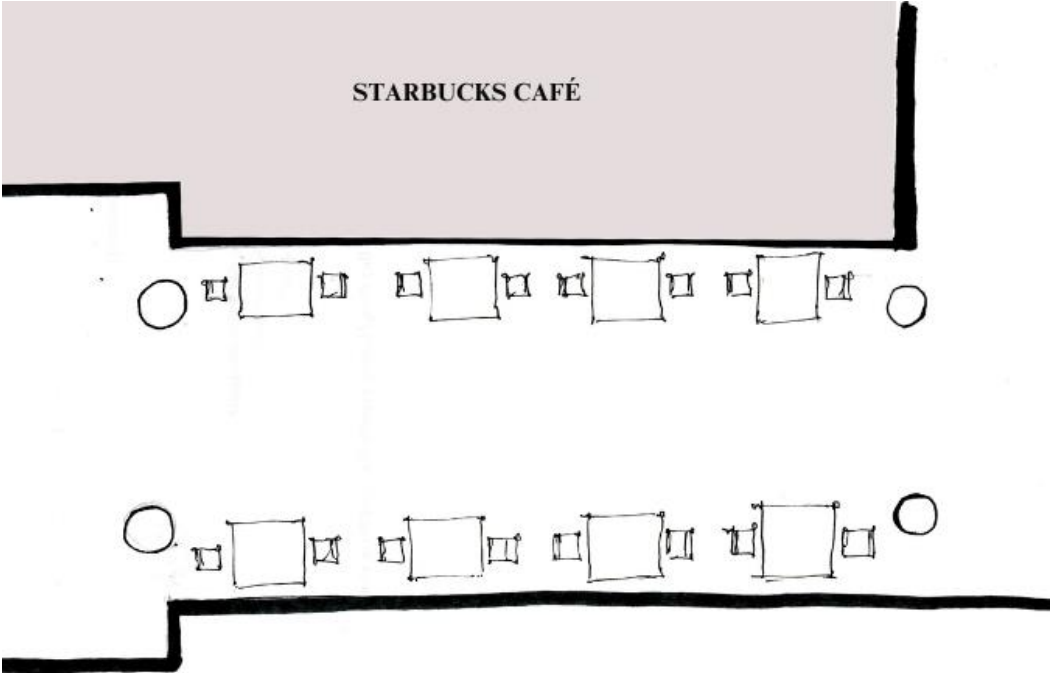
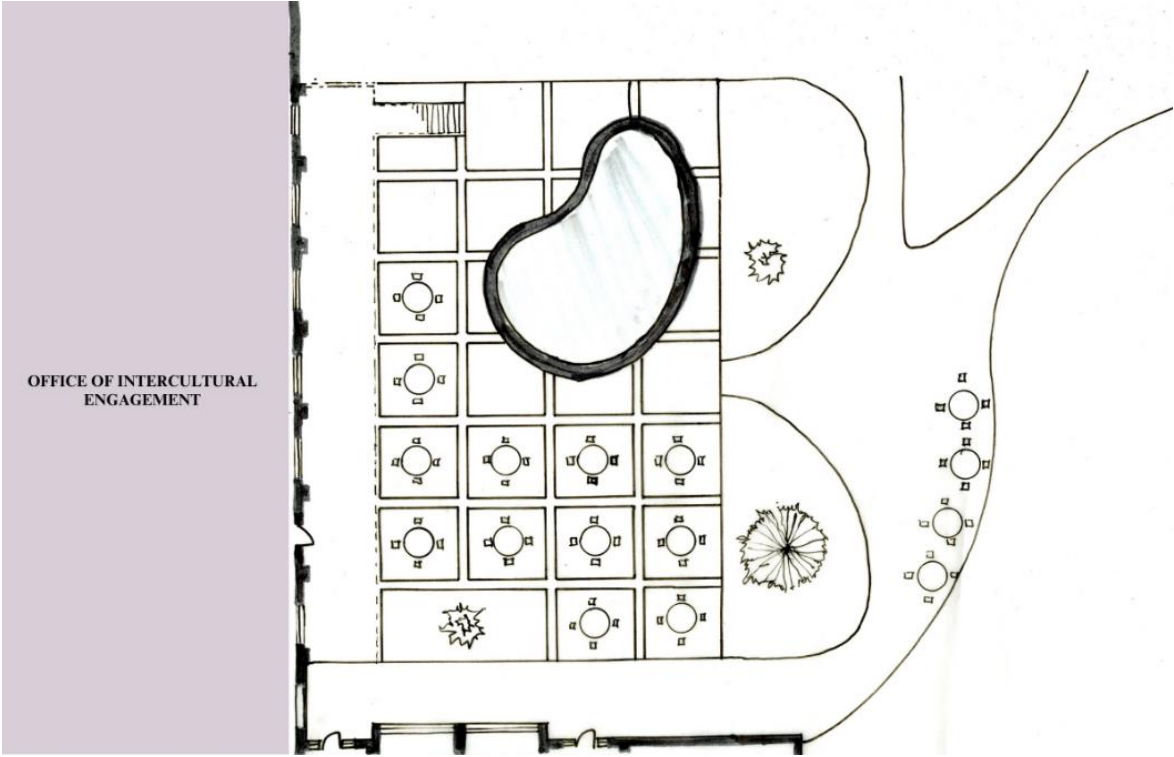


Figure 10. Seating outside of the Starbucks Café at Elliott University Center



**Figure 11. Furniture plan of Taylor Garden at Elliott University Center**



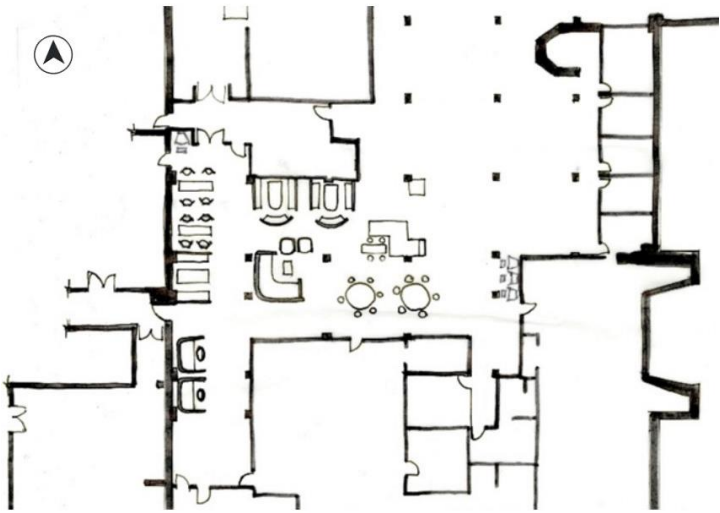
**Figure 12. Taylor Garden at Elliott University Center**



Figure 13. Floor plan of the lower level of Walter Clinton Jackson Library



Figure 14. Furniture plan of the lower level of Walter Clinton Jackson Library

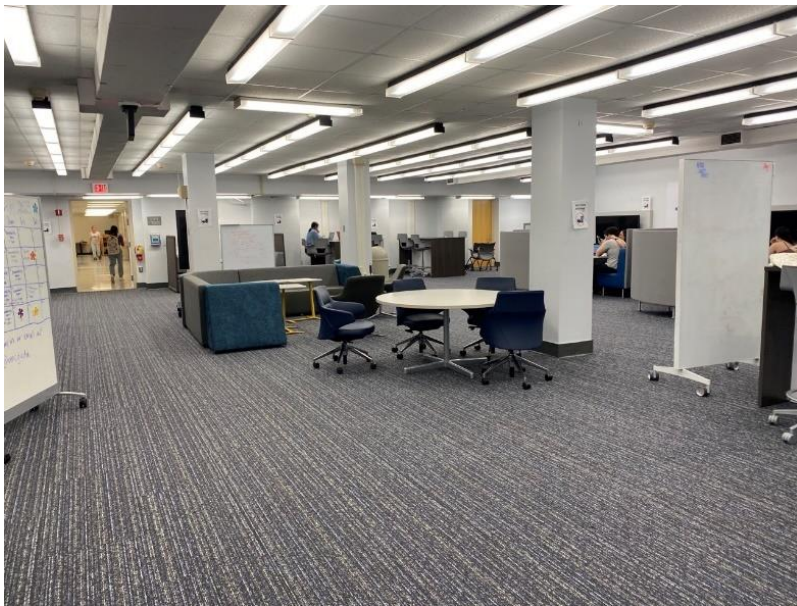




**Figure 15. The lower level of Walter Clinton Jackson Library- East side view**



**Figure 16. The lower level of Walter Clinton Jackson Library- West side view**



During the study, each of these selected spaces underwent 30-minute observation sessions on different dates and times throughout one week, covering various times of the day. As

a result, a total of 13 hours and 30 minutes of observation were conducted. The breakdown of time spent in each location is shown in table 1:

**Table 1. Breakdown of time spent in each location for observations**

<b>Building name</b>	<b>Location</b>	<b>Date</b>	<b>Time</b>	<b>Duration</b>
Walter Clinton Jackson Library	The lower level	April 3, 2023	2:00-2:30	270 minutes
		April 4, 2023	4:30 -5:00	
		April 5, 2023	11:30 -12:00	
		April 6, 2023	1:00 -1:30	
		April 10, 2023	10:00 -10:30	
		April 11, 2023	8:30 -9:00	
		April 11, 2023	4:00 -4:30	
		April 12, 2023	4:30 -5:00	
April 14, 2023	5:30 -6:00			
Elliott university center	Taylor Garden	April 3, 2023	10:00 -10:30	150 minutes

		April 4, 2023	10:00 -10:30	
		April 6, 2023	5:00 -5:30	
		April 11, 2023	10:30 -11:00	
		April 14, 2023	11:00 -11:30	
Elliott university center	Starbucks	April 3, 2023	9:30 -10:00	150 minutes
		April 5, 2023	12:04 -12:34	
		April 10, 2023	3:00 -3:30	
		April 11, 2023	9:30 -10:00	
		April 14, 2023	9:00 -9:30	
Leonard J. Kaplan Center	Jogging track overlooking the basketball court at Leonard J. Kaplan Center	April 10, 2023	6:30 -7:00	120 minutes
		April 11, 2023	2:00 -2:30	
		April 13, 2023	5:30 -6:00	
		April 14, 2023	1:00 -1:30	
Leonard J. Kaplan Center	Game area at Leonard J. Kaplan Center	April 3, 2023	3:30 -4:00	120 minutes
		April 11, 2023	6:30 -7:00	
		April 12, 2023	5:30 -6:00	
		April 15, 2023	10:00 -10:30	

Throughout the observation process, interactions between individuals were documented, including how the various spaces were utilized. The data were recorded using tables to capture the observational details. In the Jackson Library, Elliott University Center, and Leonard J. Kaplan Center the activities shown in Tables 2, 3, and 4 were documented. By recording these data points, a comprehensive understanding of how individuals interacted with and made use of these spaces was aimed to be achieved in the study.

The tables incorporate a coded system designed for observation purposes, denoting various activities and circumstances. In Table 2, a notation starting with 'G' followed by a number signifies a group under observation, whereas a number without the 'G' represents an individual identified by a specific code for recording activities. 'S' indicates engagement in studying activities, 'M' signifies an online meeting, 'H' denotes holding a phone, 'T' is used for talking on the phone, 'D' represents drinking, and 'E' refers to eating. 'Alone' indicates solitary presence during observation, 'W/someone' signifies being with others, 'F' indicates belongings placed on the floor, 'T' indicates belongings placed on a table or desk, and 'F/T' denotes belongings placed on both surfaces. The notations in Table 3 are identical to those in Table 2.

The observational data in Table 4 uses the same system as Tables 2 and 3, including the abbreviations mentioned earlier. Notably, Table 4 includes two more abbreviations: 'V' represents 'Volleyball' activities, and 'W/R' denotes 'Walking or Running' activities. These additional activities were planned for observation at this site



**Table 2. Activities recorded at the Jackson Library**

<b>Individual</b>	<b>Placement of belongings (Floor/Table)</b>	<b>Eating/Drink</b>	<b>computer (study/meet)</b>	<b>Phone (Talk/Hand)</b>	<b>Paper</b>	<b>Alone</b>	<b>w/someone</b>	<b>Talking</b>
G1	F/T		S				2 People	✓
G2			S	H			2 People	✓
3	T	D	S					
4	F		S				5 People	✓
5	F/T		S		✓		2 People	
6	F				✓			
G1	F	D	S	H			5 people	✓
2	F		S	H	✓	✓		
G3	F/T		S		✓		3 People	
4	F		S			✓		
1	F		S			✓		
G1	F		S	H			2 People +1	✓
G2			S				2 people	
G3							2people	✓
2	T		S	H		✓		
3	F		S			✓		
4	T	D	S			✓		

5	F	D	S			✓	One person joined at 11:54	
6			S			✓		
1	F		S			✓		
2	T		S	H		✓		
3	T		S			✓		
G1	F/T		S	H			2 People	✓
4	F	D/E	S	H				
1								
1	F			H		✓		
2	T		S			✓		
1	T		S			✓		
2	F	D/E	S			✓		
G1			S				4 people	
G2	F/T		S				2 people	
G3			S				2 people	
G4	F		S				3 people	
3			S					
4			S					
G5				H	✓	✓	2 People	
G1	F/T		S	H			2 People	

1	F		S	H		✓		
2			S			✓		
3	F/T		M	H		✓		
4			S			✓		
G1	F				✓		2 People	✓
1		D	S	T				
G2			S		✓		2 People	✓

**Table 3. Activities Recorded at Taylor Garden and Starbucks Café at the Elliott University Center**

Individual	Placement of belongings (Floor/Table)	Eating/Drink	Computer (Study/Meet)	Phone (Hand/Talk)	Paper	Alone	W/Someone	Talking
<b>Taylor Garden</b>								
1		D		T		✓		
2	F	D	S	H		✓		
1	F		S			✓		
G2	F/T	D/E					3 people	✓
G3	F			H			2 people	✓
2	F	D		H		✓		
G4	F						2 people	✓
3	F	D		H		✓		
G5	F/T		S					
4	F	D				✓		
G6	F/T		S				3 people	✓
G7	F/T	D/E		H			2 people	

G8	F/T			T				✓
1	F	D				✓		
2	F	D				✓		
3	T	D		H		✓		
4	F		S			✓		
5+G3	F/T		S	One of G3 H				✓
6	F		S	H		✓		
G1	F	D					2 people	✓
G2	F/T						2 people	✓
7	F	D/E	S			✓		
8	F	D				✓		
9	T		S					
10	F		S	H				
1	F		S	H		✓		
2	F		S	T		✓		
3	T				✓	✓		
4	F			H		✓		
5	F	D	S	H				
Nobody is in the area.								
<b>Starbucks</b>								
A	F		S	T				
B	T		S		✓			
C	F	D		H				
D	T	D		H				

F	F			H				
E	F/T			H				
G1	F/T	D					2 people	✓
G2	F/T	D	S				2 people	✓
1	F	D		H		✓		
2	F		S			✓		
3	F		S	T		✓		
G3	F/T	D					2 people	✓
4	T			H				
5	F		S			✓		
6	F	D						
1						✓		
2	F	D		H				
3		D	S	H				
G1	F/T	D	S					
4		E	S	H				
G2	F/T	D	S					
5	F		S					
6	F		S	H				
1				H		✓		
2	T	D	S	H			3 People	✓
3	F	D	S			✓		
4			S	H	✓	✓	2 People	✓
G1	F/T						2 People	✓

5	F		S	H		✓		
Nobody is in here.								

**Table 4. Activities recorded at Jogging track overlooking the basketball court at Leonard J. Kaplan Center**

Individual	Eating	Computer (Study/Meet)	Phone (Talk / Hand)	Paper	Alone	Group exercise	Running /Walking/Volleyball	Socialization	Recreational activities
Game area									
G1						2 People		✓	✓
G2		S	H	✓					
1			H	✓	✓				
2			H		✓				
3			T		✓				
4		S							
5			T						
6		S							
7		S							
G1						2 People		✓	✓
G2						2 People		✓	✓
1	S								



14							W/R		
15							W/R		
G5			H			3 People	✓ V	✓	
G6						2 People	W/R	✓	
1							W/R		
2			H				W/R		
3							W/R		
4							W/R		
5							W/R		
6			H				W/R		
7							W/R		✓
8							W/R		
9			H				W/R		
10							W/R		
11							W/R		
G1						2 People	W/R	✓	
13							W/R		
G1						7 People	V		
G2						12 People	V		
G3						6 People	V	✓	



G4						4 People	V	✓	
1			H		✓		W/R		
2					✓		W/R		
3					✓		W/R		
4					✓		W/R		
5			H		✓		W/R		
G5						2 People	W/R		
6							W/R		
7		S			✓		W/R		
G6						2 People	W/R	✓	
8					✓		W/R		
9					✓		W/R		
10					✓		W/R		
11							W/R		
G1						3 People	V		
G2						3 People	V		
1					✓		W/R		
2					✓		W/R		
G3						2 People	W/R		
3					✓		W/R		
G4						2 People	W/R	✓	
G4							W/R		
G5						2 People	W/R	✓	
G6						2 People	W/R	✓	
G7						3 People	V		

4			H✓		✓		W		
5					✓		W/R		

## **Data analysis**

The data analysis for this study was conducted in two steps, focusing on qualitative analysis and descriptive statistics. In the first step, the closed-ended questions were analyzed using frequencies and percentages to provide an understanding of the participants' ratings.

Frequencies and percentages were calculated using Excel to examine the distribution of responses and identify any notable trends or patterns. This descriptive analysis provided a contextual overview of the participants' ratings. In the second step, content analysis was employed to analyze the responses and observations. Common themes, concepts, or categories were identified through a careful review of the data. These themes were then coded and organized using Excel to facilitate further analysis. By carefully reviewing and coding the responses, the study was able to identify and interpret patterns.

## **Ethics and IRB**

Each participant received a detailed explanation of the study's goals and was informed about the voluntary nature of their participation. Prior to commencing data collection, the study obtained approval from the Institutional Review Board (IRB) at the University of North Carolina Greensboro (please refer to Appendix B for further details).

The survey was administered via email, with participants providing their responses anonymously. These procedures were implemented to uphold ethical standards, secure informed consent, and prioritize the comfort and confidentiality of the participants throughout the research process.

## ***Summary***

The study utilized a qualitative methodology to explore the experiences of international students at UNCG regarding campus space utilization, isolation, and social interaction

preferences. Data collection involved a questionnaire with open-ended questions and observations in selected spaces. Qualitative analysis techniques, such as content analysis, were employed to analyze the data. Ethical considerations were addressed, ensuring participants' informed consent and anonymity. The study aimed to gain comprehensive insights into the perspectives and experiences of international students at UNCG.

## CHAPTER IV: FINDINGS

In this chapter, a comprehensive examination is undertaken regarding the roles played by campus spaces in shaping the experiences of international students at the University of North Carolina at Greensboro (UNCG). The primary goal of this exploration is to illuminate how these spaces are utilized by international students for both their academic pursuits and social interactions, aligning with Research Question 1, how do international students utilize campus spaces in their studies and interactions at UNCG?

When research question 2, what do international students perceive as barriers or opportunities for social interaction in campus spaces? initiates the exploration process, the focus naturally shifts towards the socio-cultural factors underpinning these spaces. The investigation revolves around international students' perceptions concerning barriers or opportunities for social interaction within these environments. Consequently, an in-depth analysis is embarked upon to reveal the unspoken rules and norms that influence interactions within these spaces, thereby offering valuable insights into their dynamics. Moreover, an integral component of this inquiry involves the exploration of student satisfaction with the interior design of campus socialization spaces.

Transitioning to research question 3, what are international students' experiences of isolation and loneliness when utilizing campus spaces? thorough examination is conducted regarding the emotional landscape within these campus spaces, with a specific focus on experiences of isolation and loneliness among international students. Insights are sought into whether feelings of isolation are mitigated or exacerbated within these spaces, thus unveiling the emotional aspects intricately connected with campus design.

Transitioning further into the chapter, research question 4, how can spaces at UNCG encourage social interaction among international students? prompts consideration of the possibilities and challenges linked to the promotion of social interaction within UNCG's campus spaces. An evaluation is conducted regarding the campus's current efforts aimed at encouraging these connections, and Features Preferred for Socialization are identified.

The subsequent section of this chapter delves into the results obtained from observations conducted at various locations on campus, namely UNCG's library, EUC, and Kaplan Center.

Throughout this chapter, the aim is to provide a comprehensive understanding of how international students use campus spaces, their experiences of isolation and loneliness within these areas, the perceived barriers, opportunities for social interaction, and how the design of these spaces can facilitate social interactions. This exploration encompasses both survey data and observational findings to offer a well-rounded perspective on the subject.

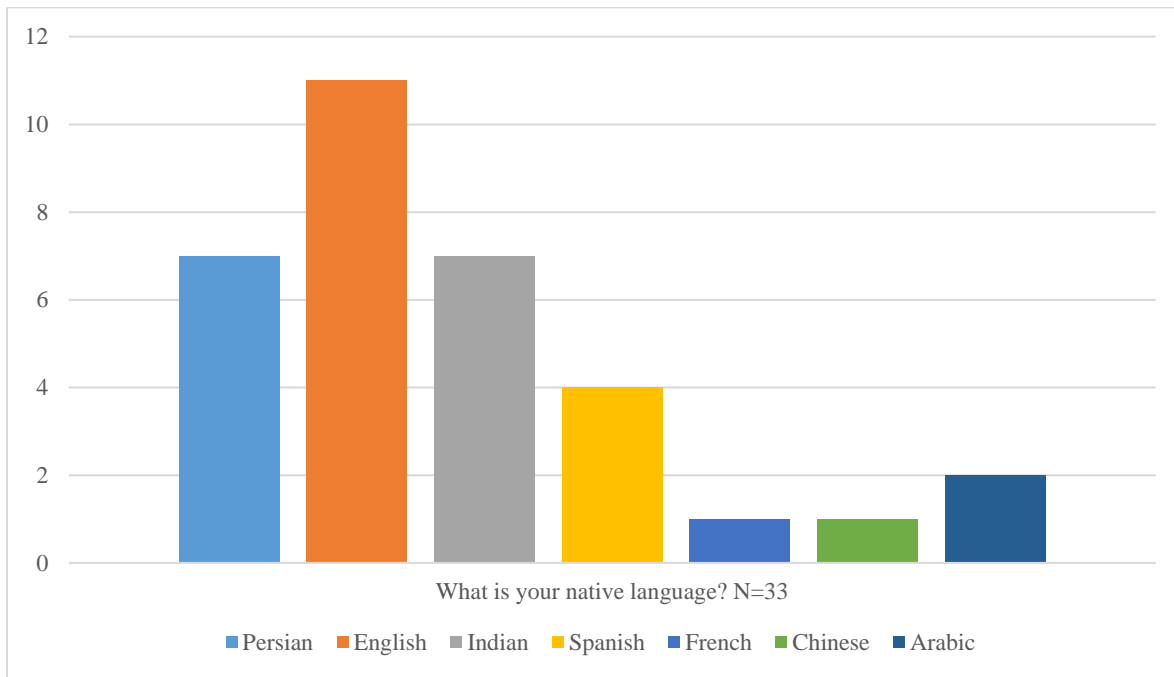
### **Participant demographics**

Out of the 67 responses, 31 were removed as the respondents consented to the survey but did not proceed to answer questions. This led to a total of 36 usable surveys. It's important to note that only four surveys out of the 36 received were fully completed. Approximately 76% of the questions lacked complete answers, rendering them incomplete for certain sections of the study.

The data from Figure 11 represents the responses to the demographic question, "What is your native language?" The respondents' native languages were diverse, with English being the most prevalent native language, followed by Persian and Indian (various languages). This distribution highlights the multicultural and international nature of the participant pool, underscoring the significance of acknowledging linguistic diversity in this research study.

However, it's important to note that the response "Indian" is not a specific language, and additional clarification would be needed to determine the specific Indian languages chosen by the participants.

**Figure 17. Distribution of participants' native languages**



**Research question 1: How do international students use campus spaces for their studies and interactions at UNCG?**

*Patterns of social interaction among respondents*

The majority of respondents, which comprises 21 individuals, indicated that their primary reason for spending time with others is for studies or academic purposes (refer to Table 5). This was followed by 8 individuals who mentioned that their main purpose for socializing with others is for socialization.

*Spaces Used Most Frequently for Socialization*

Out of 28 respondents, the most frequently identified spaces used for socialization on campus include the "EUC" (Elliot University Center) with 25% of the total responses, closely

followed by the "Library" with 21.4%, and "Kaplan" with 18%. Besides the top three spaces, the remaining options had lower representation, each receiving only 1 response, accounting for 3.5% of the total responses (Refer to table 5).

### ***Preferred Spaces for Socialization***

From a pool of 27 respondents, an analysis was conducted to determine preferred spaces for socialization on campus. The same three spaces emerged as the most frequently favored by students for socializing, with EUC (26%), the library (18.5%), and Kaplan (15%) leading the way (See table 5). To facilitate clarity, the categories have been summarized to distinguish between indoor and outdoor spaces.

When considering the most frequently used campus socialization spaces, participants predominantly favored indoor locations. The Elliott University Center (EUC) emerged as the clear leader, with 28 respondents (approximately 100% of the responses) citing it as their preferred indoor space. Other indoor spaces, such as Kaplan (7 responses) and the library (6 responses), also garnered attention.

Conversely, when asked about their preferred campus socialization spaces, respondents displayed a slightly different trend. While EUC remained a popular indoor choice, with 7 respondents (approximately 26% of the responses) preferring it, outdoor spaces began to play a more significant role. Outdoor areas garnered a total of 11 preferences, suggesting a growing inclination toward open-air socialization.

The data underscores that indoor spaces, particularly the EUC, remain the go-to choice for most respondents when it comes to socialization. However, the preference for outdoor spaces, marked by areas like parks and recreational fields, hints at a desire for more open and nature-centric social environments among some participants. These findings shed light on the diversity



of spaces used for socialization on campus, reflecting the varied needs and preferences of the international students.

**Table 5. Frequency of preferred and utilized socialization spaces on campus**

<b>Item</b>	<b>N</b>	<b>Frequency</b>	<b>Percent</b>	
How do you most spend time with others?	36	Academic	21	58
		Recreational activities	4	11
		Socialization	8	22
		Work	3	8
Which space do you <i>use</i> most frequently on campus for socialization? (List the building name and area within the building/or outdoor spaces near the building)	28	EUC	7	25
		Kaplan	5	18
		Library	6	21.4
		Coleman Building	1	3.5
		No where	6	21.4
		The new Nursing building or outside along the science building	1	3.5
		Dining hall	2	7
		Graham Building	1	3.5
		Petty Building	1	3.5
		Corridors	1	3.5
		School of Education Building	1	3.5
		Spartan Village	1	3.5
Which space do you <i>prefer</i> most on campus for socialization? (Building name and area within the	27	EUC	7	26
		Kaplan	4	15
		Library	5	18.5
		Outdoor area	3	11
		Old Town Restaurant	1	3.7
		No where	1	3.7
		Dining hall	1	3.7

building/or outdoor spaces near the building)	Brown Building & Petty Science Building	1	3.7
	park in front of the international office	1	3.7
	Middle college building	1	3.7
	Rec field	1	3.7
	Foust Building	1	3.7

*Note.* N represents the number of respondents for each question among all survey participants.

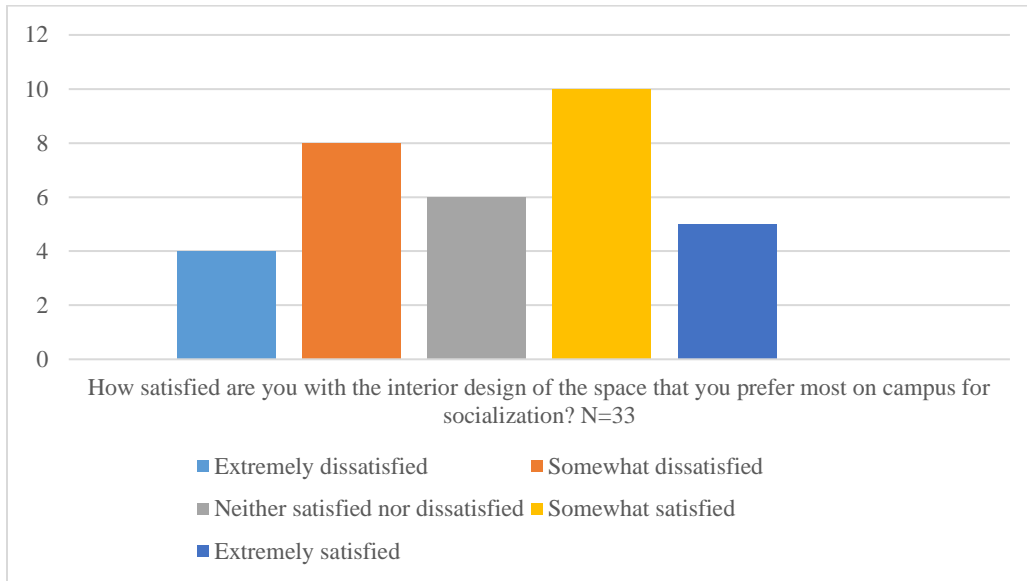
Overall, the findings highlight a predominant inclination among participants towards spending time with others for academic purposes (58%), while a relatively smaller proportion indicated involvement in work-related and socialization (8%). Additionally, international students at UNCG predominantly utilize indoor spaces for socialization, with the Elliott University Center (EUC) being the most frequently used location.

**Research question 2: What do international students perceive as barriers or opportunities for social interaction in campus spaces?**

*Student satisfaction with interior design in campus socialization spaces*

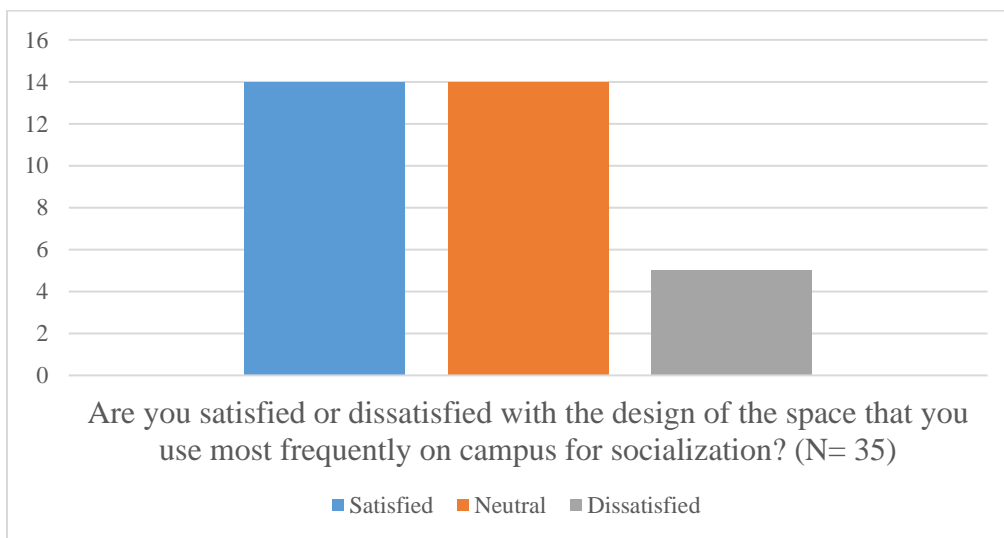
Thirty-three participants provided insights into their levels of satisfaction with the interior design of spaces they prefer to use for socialization. Notably, a combined total of 12 participants (33%) reported being either "Somewhat Dissatisfied" or "Extremely Dissatisfied" with the interior design. Conversely, a larger majority of 15 participants (43%) expressed varying degrees of satisfaction, ranging from "Somewhat Satisfied" to "Extremely Satisfied." The remaining participants fell within the category of "Neither Satisfied nor Dissatisfied" (17%), signifying a more neutral stance and implying an absence of distinct barriers or opportunities (See Figure 20).

**Figure 18. Satisfaction with the interior design of preferred socialization spaces on Campus**



Out of 35 responses, 14 people (40%) expressed satisfaction with the design of spaces they more frequently use for socialization on campus, while 19 participants (54%) held neutral or dissatisfied views. This distribution of responses reveals varying perceptions of design satisfaction among participants, indicating the need for further exploration into the factors influencing their perspectives (See Figure 19).

**Figure 19. Satisfaction with the design of utilized socialization spaces on campus**



### *Opportunities for Social Interactions*

The analysis of observed spaces within the campus buildings sheds light on common characteristics that offer opportunities for social interactions among international students. These spaces include the lower floor of Jackson Library, Taylor Garden, the Starbucks Cafe at the Elliott University Center, and the Kaplan Center jogging track and game area.

Firstly, these spaces share an absence of noise restrictions, fostering an environment where students can engage in conversations, group activities, or exercise without being constrained by the need for silence, thereby promoting social interactions.

Additionally, versatile seating options are available in all these spaces, with features like mobile boards and chairs in the library, portable seating in the cafe and garden, and designated seating areas in the Kaplan Center. These accommodate both small and large groups, encouraging spontaneous gatherings.

Furthermore, these spaces also offer unique facilities and amenities, including digital resources in the library, nearby stores around the cafe, and the allure of Starbucks coffee, known to be a favorite among many Millennials ("Gen Z Is All About Starbucks, Just Not the Coffee," 2022), which attracts students to the cafe area.

These spaces are all public buildings designed primarily for providing essential amenities and recreational spaces to the university community, rather than serving as traditional classroom or academic settings. As a result, they play a pivotal role in enhancing the campus experience, offering students a diverse range of social and leisure opportunities.

Each space also possesses unique characteristics catering to diverse preferences among international students. Examples include the visual privacy provided by the library's furniture, the inviting outdoor ambiance of Taylor Garden, and the inclusion of a jogging track and

basketball court in the Kaplan Center. Notably, the jogging track stands out as a unique facility that sets itself apart from the rest of the building, potentially offering an opportunity for social interactions.

In summary, these shared attributes collectively establish these observed spaces as hubs for social interaction on campus, fostering social interactions among international students.

***Barriers for social interactions:***

The selection of observed areas within each building was based on a higher frequency of observed groups and social interactions. Barriers to social interactions have been identified through comparisons between all areas within the Elliott University Center, Jackson Library, and Kaplan Center, and the specific spaces observed during the study within these buildings.

In the Jackson Library, opportunities for social interactions encounter hindrances, such as noise restrictions on floors 6-9, limitations on moving furniture, and the absence of special amenities like access to digital media. Additionally, accessing other floors proves challenging, especially when compared to the more easily accessible first and lower floors. For instance, individuals with limited time may opt for social interaction spaces close to the main entrances instead of venturing to the upper floors.

Within the Elliott University Center (EUC), various barriers exist, including a shortage of group-friendly furniture and a lack of outdoor ambiance and fresh air. Issues with the functionality of spaces also arise; for example, lounges are primarily designated for meetings, or based on furniture placement, students tend to use them for individual study. This discourages social interactions, as students feel obliged to maintain silence to avoid disturbing others.

Furthermore, social engagement is impeded by the absence of special facilities in these areas and access issues, such as locked lounge doors (They are only being opened for scheduled meetings).

In the Kaplan Center, most spaces are primarily utilized for individual exercises, such as workout machines, which occupy the largest area in the building. There is a shortage of suitable furniture for group interactions in areas other than those observed. Accessibility also poses a challenge when compared to the observed areas, as the building's size places other spaces far from the entrances.

**Figure 20. Jackson library furniture restriction sign**



### ***Summary***

Participants displayed varying levels of satisfaction with the interior design of their chosen socialization spaces, the variations in satisfaction levels underscore the complexity of international students' experiences and their interaction with interior design. This underscores the importance of a holistic approach to campus design, considering both the design elements and international students' preferences to create inclusive and conducive spaces for social interaction. The study's findings highlight a complex interplay of barriers and opportunities for social interactions among international students on the UNCG campus. These insights underscore the

importance of a multifaceted approach to designing campus spaces that consider both physical attributes and students' preferences, aiming to create inclusive and conducive environments for social interaction.

**Research question 3: What are the experiences of international students in terms of isolation and loneliness when utilizing campus spaces?**

Among the 36 respondents, most of them reported lacking companionship, feeling left out and isolation. Regarding the sense of lacking companionship, 29 participants (80%) indicated experiencing this emotion sometimes or often. In terms of being left out and feeling isolated, 24 individuals (66%) also mentioned experiencing these emotions sometimes or often (See table 2). Among the total of 36 respondents, 7 individuals did not report experiencing feelings of isolation. Furthermore, 14 did not offer any particular reasons for their stated feelings of isolation (See table 6).

**Table 6. Frequency of feeling a lack of companionship, being left out, and isolation**

Item	N	Frequency	Percent
How often do you feel that you lack companionship?	36	Hardly ever	7 19
		Some of the time	21 58
		Often	8 22
How often do you feel left out?	36	Hardly ever	12 33
		Some of the time	19 53
		Often	5 14
How often do you feel isolated from others?	36	Hardly ever	12 33
		Some of the time	19 53
		Often	5 14

*Note.* N represents the number of respondents for each question among all survey participants.

Among the 29 respondents who acknowledged experiencing isolation, the "EUC" (Elliot University Center) emerges as a notable space, with 20.6% of individuals reporting such feelings in this location. Classrooms and the broader campus environment were also commonly cited, accounting for 13.7% and 10.3% of isolation experiences, respectively (See table 7).

Responses to feelings of isolation on campus varied, with participants citing specific locations and activities, suggesting context-dependent experiences. Some reported no isolation in campus spaces, while others highlighted language-related challenges.

In the analysis of responses to the survey question about the causes of isolation, feelings were attributed to the function of the space by 8 participants (36%), and design features were also identified as contributing factors by the same number of respondents (as shown in Table 7).

A systematic categorization method was employed to identify the predominant factors contributing to this sentiment, resulting in three primary categories: "design features," "function of space," and "others."

The significance of visual and structural aspects of the physical environment, including architectural elements, furniture arrangements, noise, lighting, and the landscape, was perceived to influence feelings of isolation and was included in the "design features" category. Responses were categorized under 'function of space' based on considerations related to how their intended purposes were served and their suitability for facilitating interaction and engagement, including factors like practicality.

The "others" category encompassed responses that did not neatly align with the preceding categories but still offered insights. This categorization approach was considered essential for understanding the diverse factors contributing to students' perceptions of isolation within their respective environments.



**Table 7. Frequency of spaces associated with feelings of isolation**

Item	N	Frequency	Percent	
Have you ever experienced feelings of isolation in campus spaces? If yes, please describe where the space is located or write the name of the space.	29	EUC	6	20.6
		Classrooms	4	13.7
		Everywhere on campus	3	10.3
		Library	1	3
		Dining hall	2	6.8
		Classroom buildings	2	6.8
		Bus station	1	3
		Dormitory	1	3
		No	7	24
Based on your answer to the previous question, please describe why you felt isolated in the space. (Is there a reason such as design features or something related to the function of the space or ...)	22	Function of space	8	36
		Design features	8	36
		Other	4	18
		N/A	3	13

*Note.* N represents the number of respondents for each question among all survey participants.

Regarding participants' experiences with feelings of loneliness on campus, among the 26 respondents, the majority (46%) reported experiencing loneliness. Notably, a 30% stated that they did not encounter loneliness on campus (See table 8).

Out of the 21 respondents, various factors contributing to feelings of loneliness were identified among the three participants (See table 8). In analyzing the responses concerning the underlying causes of feelings of loneliness, a variety of contributing factors emerged. A similar category system to the one used to analyze the question about the reasons for feelings of isolation was applied to this question.

Within the "design features" category, responses emphasized the significance of visual and structural aspects of the physical environment, including architectural elements, furniture arrangements, noise, lighting, and the landscape. These elements were identified as potential influencers of feelings of loneliness. The "function of space" category encompassed responses related to how these spaces serve their intended purposes, considering their suitability for encouraging interaction and engagement. The "others" category served as a catch-all for responses that did not neatly align with the preceding categories but still provided insights.

**Table 8. Frequency of feeling lonely on campus**

<b>Item</b>	<b>N</b>	<b>Frequency</b>	<b>Percent</b>	
When, if ever, have you experienced feelings of loneliness on campus?	26	On holidays / Weekends	2	7.6
		In my free time on campus	1	3.8
		At work on campus	1	3.8
		Always feel lonely on campus	2	7.6
		Sometimes feel lonely on campus	2	7.6
		Yes, I have	4	15.3
		No, I have not	8	30.7
Please describe the space where you experienced the feelings of loneliness (building name/area).	23	Classroom/All classroom building	7	30.4
		Dormitory	2	8.6
		Communal spaces on campus	9	39
		Outdoor spaces on campus	5	21.7
		N/A	3	13
please describe why you felt lonely in the space. (Is there a reason, such as design features or something	21	Design features	8	38
		Function of space	2	9.5
		Others	4	19
		N/A	7	33

related to the function of the space or ...)			
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*Note.* N represents the number of respondents for each question among all survey participants.

Findings demonstrate that the majority of surveyed individuals undergo periodic episodes of lacking companionship, feeling left out, and experiencing isolation in campus spaces.

In examining student responses about feeling lonely and isolated in university spaces, an interesting distinction emerges. While "Design Features" are more prominently associated with loneliness, "Function of Space" and "Design Features" are equally cited for isolation. This suggests that students attribute loneliness more to the physical aesthetics of spaces, while isolation may be influenced by both design and functionality. This finding underscores the complexity of students' perceptions of their environments and emphasizes the need for a comprehensive approach to address their emotional well-being in university spaces.

**Research question 4: How can spaces at UNCG encourage social interaction among international students?**

Out of the 33 participants, a range of design features was identified, and their frequencies and percentages were calculated. The most commonly selected design feature was "Furniture placement," chosen by 14 participants (42.4%). This indicates that the arrangement and layout of furniture play a significant role in creating a conducive social environment. Following closely behind, "Furniture Design" was mentioned by 8 participants (24.4%). This suggests that the aesthetic appeal and style of furniture contribute to the socializing experience. Moreover, 9 participants (27%) expressed the desire for spaces that are specifically designed to cater to their cultural preferences, while 6 participants (18%) desired areas that embrace the cultures of other

countries. These findings highlight the significance of cultural inclusivity and the creation of spaces that respect and celebrate diversity. Nature-related design features also garnered attention.

"Plants inside space" were selected by 7 participants (21%), suggesting that the presence of greenery enhances the social atmosphere. Additionally, "Landscape" was mentioned by 9 participants (27%), indicating a preference for outdoor spaces or environments that offer natural elements. These diverse preferences highlight the unique considerations participants have when selecting a space to socialize (See table 9).

**Table 9. Design features of socialization spaces**

Item	N	Frequency	Percent	
What design features of space are important for you when choosing a space to socialize? (Check all that apply)	33	Furniture placement	14	42.4
		Furniture design	8	24.2
		Color of the walls	4	12
		Design an area for a specific function in the space related to your culture	9	27
		Design an area for a specific function in the space related to other country's cultures	6	18
		Plants inside Space	7	21
		Landscape	9	27
		Others	5	15

*Note.* N represents the number of respondents for each question among all survey participants.

***Evaluation of Campus's Encouragement of Social Interaction***

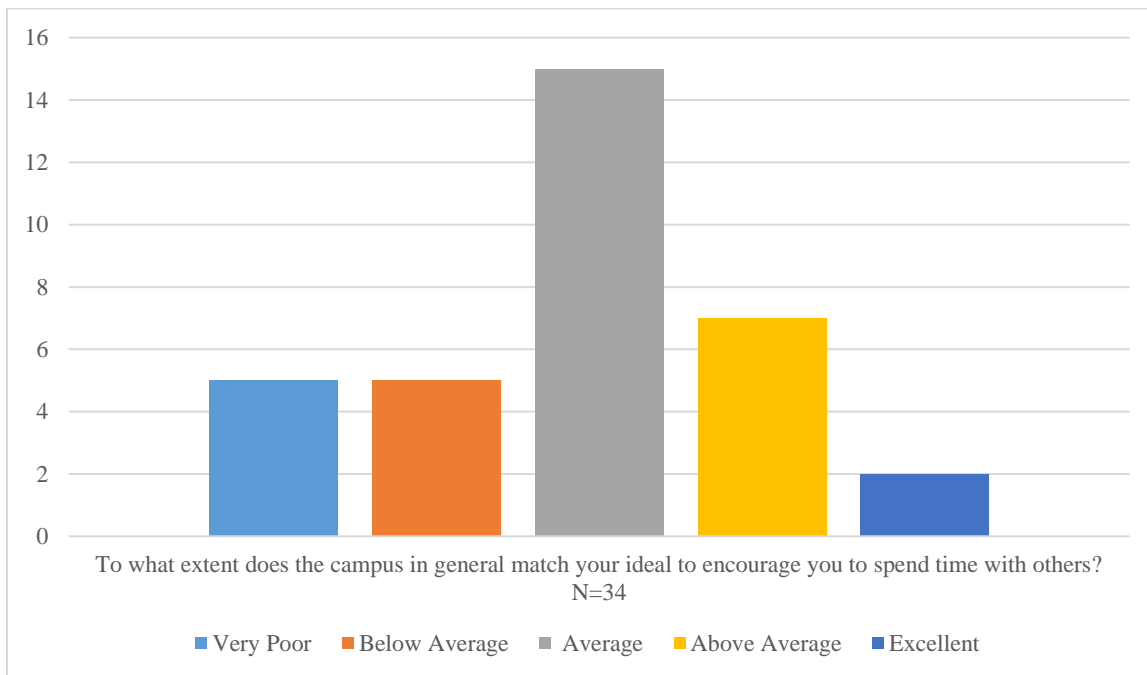
The data presented in Figure 14 provides insights into participants' perceptions of how well the campus aligns with their ideal environment for promoting social interaction.

The majority of participants (44%) found the campus to be "Average" in terms of meeting their expectations in fostering social interaction. Furthermore, 20% of participants rated it as "Above Average," while 14.7% considered it "Below Average." A notable subset of

respondents (14.7%) perceived the campus as "Very Poor," indicating a significant gap between their ideal and the actual environment. In contrast, 5.8% of participants regarded it as "Excellent."

In summary, participants' perspectives vary. Some view the campus as "average" or "above average" in encouraging social interaction, while others express dissatisfaction, characterizing it as "very poor" or "below average." This data suggests that there is an opportunity for improvement in creating the campus environment that actively promotes social connections and addresses feelings of isolation and loneliness (Refer to Figure 14).

**Figure 21. Evaluation of campus's encouragement of social interaction**



***Features Preferred for Socialization***

The data reveals diverse preferences for socialization space features. "Function of spaces" was the most frequently preferred feature, chosen by 9 out of 25 respondents, accounting for 36% of the total responses. Following closely was "Furniture" and "Interior design of spaces," each selected by 6 respondents, representing 24% of the total responses. The next frequently

preferred feature was "Connection to Nature," selected by 5 respondents, making up 20% of the total responses. It's evident that some students value a connection to nature as a desirable aspect of their socialization spaces. The data implies that students have varied preferences when it comes to the features, they seek in socialization spaces on campus. Although "Function of spaces," "Furniture," and "Interior design of spaces" emerged as the top three most frequently chosen features (See table 6).

**Table 10. Features preferred for socialization on campus**

Item	N	Frequency	Percent	
When on campus, what features of space do you prefer for socialization?	25	Function of spaces	9	36
		Furniture	6	24
		Interior design of spaces	6	24
		Connection to nature	5	20

*Note.* N represents the number of respondents for each question among all survey participants.

The research findings highlight a range of design considerations that influence social interaction among international students at UNCG. Participants emphasize the significance of factors such as furniture arrangement, which involves the consideration of group seating in the organization of furniture in spaces, promoting inclusivity and adaptability, as well as the presence of greenery, and integration with the natural environment in creating inviting and conducive spaces for socialization. Additionally, they emphasize the significance of the incorporation of cultural elements, referring to the inclusion of different cultures in the design of spaces, encompassing functions related to different cultures.

While some students view the campus environment favorably, others express dissatisfaction, suggesting opportunities for enhancing the campus's role in fostering connections and addressing isolation. The data underscores the importance of tailoring spaces to meet diverse

preferences, with a focus on features like the functional layout, furniture, and interior design to promote social interaction.

## **Observation Finding**

### ***Library***

Based on observations conducted at UNCG Library from the data provide insights into the activities and behaviors of individuals in the library spaces. The recorded activities include "Eating/Drinking," "Computer (studying)," "Computer (meeting)," "Phone (Talking)," "Phone (on hand)," "Paper (Writing or Reading)," and "Talking (Groups)." Additionally, the data includes information about the number of people who used the space either "Alone" or "With someone (Groups)." From the data, we can observe the frequency of each activity in the spaces. Studying with a computer was the most frequently observed activity (N=64), with the highest number of participants engaged in this activity across multiple instances. Additionally, there were notable occurrences of "having a phone in hand". On the other hand, activities such as "Eating/Drinking" and "Talking on the phone" were less frequent or observed in fewer instances.

Furthermore, the data highlights the presence of group interactions during the "Talking (Groups)" activity, where people engaged in conversations in small groups (N=47). These observations suggest that the library spaces serve as areas not only for individual study but also for group interactions and collaboration.

Overall, a total of 72 people were recorded during the observation period, with 25 individuals observed being alone in the space and 47 people observed in groups. The total observation time amounted to 270 minutes (4 hours and 30 minutes), indicating the active utilization of the spaces. The data show that the observed areas were relatively busy, with significant engagement in various activities, both individually and in groups. This observation

sheds light on the dynamics of socialization and study patterns within the library spaces, offering valuable information for understanding student preferences and usage of such spaces. Table 11 displays the percentages of people observed who were either alone or in groups during all observations at the library.

### ***Elliot University Center (EUC)***

Based on observations at two spaces, Taylor Garden and Starbucks Cafe, within the UNCG EUC building from April 3 to April 14, the data provide insights into the activities and behaviors of individuals in these areas. The recorded activities include "Eating/Drinking," "Computer (studying)," "Phone (Talking)," "Phone (on hand)," "Paper (Writing or Reading)," "Alone," "With someone (Groups)," and "Talking (Groups)." At Taylor Garden on April 3, 2 individuals were observed, with "Eating/Drinking" being the most common activity, followed by "Computer (studying)" and "Phone (Talking)," each with 1 participant. On April 4, there were 18 individuals engaged in various activities, with "Talking to each other (Groups)" being the most prominent, represented by 11 participants. Notably, 4 individuals were observed alone. On April 6, 14 individuals were recorded, with 10 participants being alone, and 4 individuals using their phones. On April 11, there were 5 individuals, with "Having a phone in their hands" being the most frequent activity, represented by 5 participants each. Lastly, on April 14, no individuals were observed at Taylor Garden. At Starbucks Cafe, on April 3, 6 individuals were recorded, with "Eating/Drinking" and "Computer (studying)" being the most frequent activities, each with 2 participants. On April 5, 12 individuals were recorded, with "Eating/Drinking" and "Studying on a computer" being the most prevalent activities, represented by 8 and 5 participants, respectively. Notably, 6 individuals were observed alone, and there were 3 groups of people talking. On April 10, 8 individuals were recorded, with "Studying on a computer" being the most



common activity, represented by 6 participants. On April 11, there were 10 individuals, with "having Phone in Hand" being the most prevalent activity, represented by 6 participants.

Additionally, 3 groups were observed, consisting of 2 and 3 individuals each. Finally, on April 14, no individuals were observed at Starbucks Cafe. The data provides valuable insights into the use and dynamics of these spaces within the EUC building, showcasing the variety of activities and social interactions among individuals during the observation period. Table 11 indicate that during the observations, Starbucks Cafe had 64% of individuals using the space alone, while 36% preferred to be in groups. On the other hand, Taylor Garden had 59% of individuals using the space alone, while 41% were in groups. These percentages reflect the preferences of individuals for solitary or group activities in both spaces. The data highlights that Starbucks Cafe encourages more solitary activities, whereas Taylor Garden appears to attract a slightly higher percentage of individuals engaging in group interactions. These observations provide valuable insights into the dynamics of these spaces within the EUC building, emphasizing the diversity of activities and social interactions among individuals during the observation period. Overall, at the EUC building, the majority of individuals (61%) were observed engaging in activities alone, while approximately 38% of them were seen in groups during the observation period.

**Table 11. Total number of groups and individuals in all observations at Jackson Library and Elliott university Center**

<b>Campus spaces</b>	<b>Alone</b>	<b>In Groups</b>
Lower floor of Jackson Library	35%	65%
Taylor Garden at Elliott university Center	59%	41%

Starbucks Café at Elliott university Center	64%	36%
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***Kaplan Center***

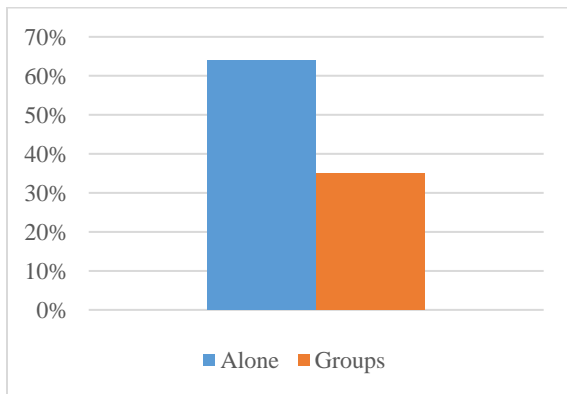
Based on the observations conducted at the Jogging track and Game area in the Kaplan building within the UNCG EUC building from April 3 to April 14, the data provides insights into the activities and behaviors of individuals in these areas. The recorded activities include "Eating," "Computer (Studying)," "Phone (Talking)," "Phone (on Hand)," "Reading or writing on Paper," "Alone," "With Someone (Groups)," "Group exercise," "Running," "Walking," "Socialize," and "Recreational activity." At the Game area, on April 10, a total of 48 individuals were recorded, with the majority (15) being alone and 7 groups engaging in various activities, such as playing basketball. On April 11, 14 individuals were recorded, with 12 being alone and 1 group of 2 people participating in group exercise, and 2 individuals running. On April 13, 43 individuals were recorded, with 12 being alone, 2 groups of 4 and 6 people acting as the audience, 2 groups of 7 and 12 people playing basketball, 6 individuals running, and 7 individuals walking in a group of 2. On April 14, 23 individuals were recorded, with 6 being alone, 3 groups of 2 people walking, 3 individuals walking alone, and 2 groups of 2 people each group engaging in talking to each other while walking.

At the Jogging track, on April 11, 2 individuals were recorded running, and 2 individuals were walking. On April 13, 6 individuals were running, and 1 group of 2 people was walking. On April 14, 3 individuals were running, 3 groups of 2 people were walking, and 2 groups of 2 people were socializing while walking. Overall, the data shows that both spaces attract individuals who prefer to engage in activities alone and in groups. The Game area had a higher percentage of individuals in groups (37.5%) compared to the Jogging track (25%), indicating that

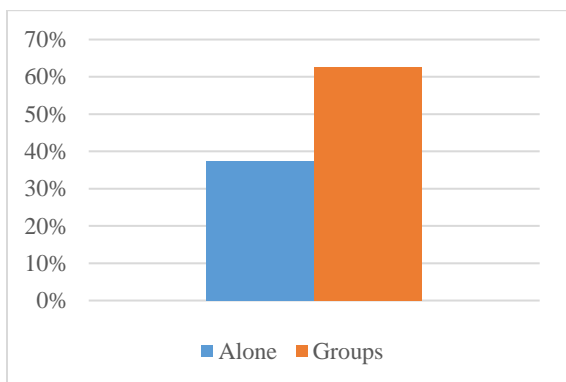
the Game area is more conducive to group activities and socialization. Conversely, the Jogging track saw a higher percentage of individuals engaging in activities alone (75%) compared to the Game area (62.5%). These observations provide valuable insights into the dynamics of these spaces, showcasing the variety of activities and social interactions among individuals during the observation period within the EUC building (Figures 18 and 19).

Overall, the total time observation at the Kaplan Center was 240 minutes, at UNCG, 145 individuals were seen. 59 (40.69%) were alone, and 86 (59.31%) were in groups. The data suggests that the center accommodates both individual preferences for solitude and social interactions in group activities.

**Figure 22. Total number of groups and individuals observed at the Game area in the Kaplan Center**



**Figure 23. Total number of groups and individuals observed at the Jogging Track in the Kaplan Center**



**Answer research questions based on survey and observation findings:**

***Research Question 1: How do international students use campus spaces for their studies and interactions at UNCG?***

Combining both survey and observation findings, it is evident that international students at UNCG primarily use campus spaces for academic purposes and socialization. Survey results indicate that a majority of respondents spend time with others for academic purposes, followed by socialization. The library, Elliot University Center (EUC), and Kaplan Center are frequently used spaces for these activities, with varying preferences for indoor and outdoor settings.

Observations in these spaces reveal a bustling environment with activities like studying, socializing, and group interactions, reinforcing the survey findings. These spaces cater to both individual study and collaborative endeavors, emphasizing the diverse needs of international students when it comes to using campus spaces.

***Research Question 2: What do international students perceive as barriers or opportunities for social interaction in campus spaces?***

The survey findings suggest that international students exhibit diverse levels of satisfaction with the design of spaces they frequently use for socialization. When combined with

observation results, these findings underscore a complex interplay of barriers and opportunities for social interaction on campus. Opportunities for social interaction arise in spaces like Starbucks Cafe and Taylor Garden within the EUC building, offering flexible environments accommodating both solitary and group activities, with a high tolerance for noise and versatile seating options that encourage spontaneous gatherings. Additionally, their accessibility near main entrances facilitates easy discovery and access, further promoting social engagement.

Conversely, barriers to social interaction manifest in spaces within the library, where noise restrictions prioritize individual study, and certain areas lack group-friendly furniture, hindering students from engaging in social activities. Furthermore, uneven access to amenities can deter students from using specific spaces for socialization. These findings emphasize the importance of designing campus spaces that are inclusive and adaptable, considering the diverse preferences and needs of international students to foster meaningful social interactions.

***Research Question 3: What are the experiences of international students in terms of isolation and loneliness when utilizing campus spaces?***

Incorporating both survey and observation data reveals a notable pattern in the experiences of international students regarding isolation and loneliness. While survey responses indicate that a significant proportion of international students at UNCG report these feelings, the observation data adds a layer of context and complexity to this issue.

The pattern that emerges is that isolation and loneliness are not solely determined by the design or function of the campus spaces but are significantly influenced by the social dynamics within these spaces. For instance, the survey shows that the Elliott University Center (EUC), classrooms, and the broader campus environment are often associated with isolation and

loneliness. However, the observation data indicates that these same spaces are also hubs for various forms of social interaction, including group discussions and collaborative activities.

This pattern suggests that the mere presence of students in a particular space does not guarantee a sense of connection or belonging. It underscores the importance of not only designing spaces that facilitate social interaction but also fostering a sense of community and inclusivity within those spaces. For international students, who may already face challenges related to language and cultural adaptation, the social atmosphere within these spaces plays a crucial role in determining their experiences.

***Research Question 4: How can spaces at UNCG encourage social interaction among international students?***

Survey responses shed light on design features that participants value for socialization in spaces. Furniture placement, furniture design, and cultural inclusivity are among the features most frequently listed. Nature-related elements, such as plants and landscapes, also contribute to creating inviting social spaces. While students have varying preferences, the majority agree that the function of spaces, furniture, and interior design are crucial in promoting social interaction.

Observation findings highlight specific spaces like Starbucks Cafe, Taylor Garden, and areas within the Kaplan Center that offer substantial opportunities for social interaction due to noise tolerance, versatile seating, and accessibility. These observed spaces accommodate both individual and group activities, aligning with student preferences for diverse socialization environments.

## CHAPTER V: CONCLUSION

In this concluding chapter, the research questions are discussed for implications. The overarching goal of this study was to uncover strategies and design elements that can be implemented within UNCG's spaces to create an environment that promotes social interaction and reduces the feelings of isolation and loneliness experienced by international students. This chapter presents a synthesis of the literature, key findings and implications drawn from the study, culminating in evidence-based strategies and design recommendations to support the academic and social experiences of international students.

### **Discussion**

The study delved into the dynamics of social interaction among international students by utilizing surveys and observations as research tools. The investigation into the frequency of feelings of isolation in campus spaces unveiled that participants encountered sporadic episodes of companionship deficiency, feelings of exclusion, and isolation. This discovery is in alignment with prior research findings (Girmay & Singh, 2019). Spaces associated with these emotions were identified, including the EUC, dining halls, the academic buildings, classrooms, the library, and specific areas like the forest and studio spaces. A range of factors, encompassing space functionality, and design attributes were attributed to feelings of isolation, underscoring the importance of creating inclusive environments conducive to social interactions.

Within the context of experiences of loneliness on campus, participants exhibited varying patterns, with some expressing loneliness during leisure time or work, while others felt it in different locations. Examination of design features within spaces intended for socialization highlighted the significance of furniture arrangement, design aesthetics, and a connection to nature, all of which emerged as crucial elements preferred by participants.

The top three buildings for social interactions among international students at UNCG, namely the Elliott University Center (EUC), the library, and the Kaplan Center, share several commonalities that contribute to their popularity and preference on campus. These buildings offer versatile spaces that cater to a wide range of activities, accommodating individual study, group discussions, socializing, and collaborative projects. Their convenient and central campus locations make them easily accessible, encouraging students to utilize these spaces and promoting spontaneous interactions. Moreover, they are also not associated with classrooms or departments/majors. Additionally, diverse seating options, from comfortable seating arrangements to study tables and areas for group discussions, cater to different learning and socialization styles, making these buildings highly attractive to a diverse student body.

Moreover, these buildings strike a balance between quiet zones for focused study and spaces that tolerate a reasonable level of noise, creating a welcoming atmosphere for both individual work and group engagement. Their functional design layouts support a mix of activities, enhancing their overall usability. In addition, these buildings provide valuable resources that enrich the social experience, such as academic materials in the library, dining facilities in the EUC, and recreational amenities in Kaplan Center, encouraging students to spend extended periods and naturally fostering more social interactions.

In essence, the EUC, library, and Kaplan Center collectively embody these commonalities, making them hubs for social interactions among international students at UNCG, where students feel not only welcomed but also empowered to connect and engage with their peers in accordance with shared cultural values and expectations.

Observations conducted at various campus locations, such as the UNCG Library, EUC, and Kaplan Center, provided valuable insights into the diverse spectrum of activities and



behaviors embraced by international students. These activities encompassed a wide range, including computer-based studying, engaging in group discussions, communal dining, as well as recreational pursuits like jogging and walking. Upon analyzing social interactions within different campus spaces, patterns among international students came to light. Notably, the library emerged as a prominent hub for group activities. The findings from observations indicated that a significant majority of people (65%) were observed engaging in groups within this area, reflecting a tendency likely influenced by its academic nature and conducive environment for collaborative work. In contrast, the Kaplan Center exhibited a distinct social dynamic, with observations revealing that a majority of people (59%) participated in group activities within this area. This trend can be attributed to the center's recreational offerings, which create opportunities for students to come together and partake in shared activities. Interestingly, the Elliott University Center (EUC) portrayed a contrasting picture, where a majority of people (61%) were observed engaging alone in this space. This preference for solitary engagements potentially reflects the multipurpose function of the EUC, catering to individual needs for relaxation, contemplation, eating, or focused study. These findings underscore the intricate relationship between the design of physical spaces and the social interactions of international students. The observed patterns shed light on how different spaces cater to varied preferences and activities, highlighting the significance of creating versatile environments that accommodate diverse social behaviors.

The literature review emphasizes the importance of well-being among international students, encompassing mental, physical, and social aspects. It highlights that social interaction, a sense of belonging, and social support is crucial for the mental well-being of international students. Loneliness and isolation are common challenges faced by them, which can negatively affect their overall health. Creating stronger bonds between international and local students,

helping them adapt to new cultures, and providing collaborative activities are suggested as ways to address these challenges and enhance their well-being. Comparing the findings of the current study with the existing literature, we see that the study aligns with the importance of social interaction and its impact on the well-being of international students. The data reveals that a significant portion of participants experienced feelings of isolation and loneliness while utilizing campus spaces, indicating the relevance of the issue. It corroborates the literature's emphasis on the significance of addressing these challenges to improve the overall well-being and success of international students. The study's identification of specific spaces associated with feelings of isolation and the exploration of design features preferred by participants further contribute to the literature. By highlighting the importance of inclusive environments that foster social interactions, the study aligns with the literature's focus on the role of campus design in promoting student well-being and satisfaction. The literature review also explored the significance of diverse spaces, seating options, and engagement of students in the design process.

While the current study did not directly examine these elements, its focus on identifying frequently used and preferred spaces for socialization provides complementary insights into the students' preferences and interactions with their environment.

Derived from both the literature review and the findings of this study, it becomes evident that the potential for fostering cultural understanding and appreciation among students from diverse backgrounds, especially those from international cultures, can be found in activities like games, street food exploration, and festival participation (Rechkemmer, 2023; Yusupova, Podgorecki, & Markova, 2015; Smith & Khawaja, 2011; Lihua, 2013; Ma, 2020; Ma, 2015; Kraig & Sen, 2013). Furthermore, based on the findings of this study, the examined areas at UNCG possess unique physical characteristics, such as furniture-based privacy, outdoor

environments, and exercise and sports facilities, catering to the diverse preferences of international students and offering distinct opportunities for enhancing social interactions. Therefore, the findings emphasize the impact of physical-behavioral attributes that are particularly relevant to international cultures.

The survey results have revealed a series of unexpected and occasionally conflicting insights within the responses to questions 2 to 5, which inquired about the frequency of feeling a lack of companionship, feeling left out, experiencing isolation from others, and how respondents primarily spend time with others. Notably, among the 36 respondents, a subgroup of five individuals who reported feeling left out "Often" also consistently expressed experiencing a lack of companionship and feelings of isolation. Intriguingly, these individuals appear to primarily engage with others within the sphere of academic and study-related activities.

Furthermore, within the same respondent cohort, an additional subset of 16 participants who indicated experiencing feelings of being left out "Some of the time" similarly conveyed instances of encountering a lack of companionship and experiencing isolation to the same degree.

Moreover, within this subgroup, a subset of five individuals who reported experiencing companionship deprivation "Some of the time" paradoxically indicated that they "Hardly ever" experienced being left out or isolated. It is important to highlight that many of these students predominantly interact with their peers within the context of studies and academic pursuits. This overemphasis on academic interaction potentially signals a lack of socialization beyond the academic realm, which may impact students' overall well-being and social development.

These apparent contradictions fuel a deeper investigation into the intricate layers of their social interactions. Interestingly, students who primarily engage with others for academic and

study-related purposes still grapple with feelings of companionship deprivation, isolation, and a sense of being left out. Furthermore, among those who frequently expressed feelings of isolation, an intriguing pattern emerges wherein their interactions seem concentrated in academic contexts. This raises pertinent questions about the nature of these interactions during scholarly endeavors and the depth of the social bonds they perceive.

Additionally, around 10 students who spend their time with others for work or socialization experience at least one of these feelings: being left out, a lack of companionship, and a feeling of isolation.

In conclusion, the survey responses offer an understanding of the social dynamics among international students at the University of North Carolina at Greensboro. Recognizing these patterns can guide focused efforts to improve the social well-being of particular student groups. Given this intricate and multifaceted array of results, it is imperative to embark on further exploration to unravel the intricacies that underlie these students' experiences and interactions.

Finally, the significance of crafting inclusive and adaptable spaces that honor diversity and suit international students' preferences for individual and group activities is underscored by the study. These recommendations are drawn from a synthesis of existing literature and insights gained from the research findings. Suggested strategies encompass the integration of nature-related design elements, optimization of furniture placement, and accommodation of cultural inclinations in space design.

### **Research Limitations and Future Research**

The study has certain limitations that should be acknowledged. Firstly, the response rate was relatively low, with only 36 out of 599 enrolled international students at UNCG participating in the survey (6% of the total population). Additionally, 67 individuals signed the consent form

but did not complete the survey, potentially introducing non-response bias. Incomplete responses from some participants and self-selection bias may also influence the findings. Furthermore, potential language barriers could have affected participation. Having the survey in different languages might have been helpful.

In addition to the response rate and incomplete data, the sample size of 36 participants may not fully represent the diverse perspectives and experiences of the entire international student community at the university. Cultural differences among participants might have influenced their responses and preferences for socialization spaces and design elements, potentially introducing bias. The data collected through surveys and observations may also be subject to self-reporting bias, as participants may provide socially desirable responses or alter their behavior when being observed.

Moreover, the scope of the observations conducted at specific locations and times may not fully capture students' social interactions across all campus spaces and various time frames. External factors, such as academic workload, personal commitments, and cultural events, might not have been adequately accounted for in the study, potentially influencing participants' socialization patterns.

Despite these limitations, the findings still provide insights and serve as a foundation for future research. To improve the accuracy and representativeness of findings, future studies should consider efforts to increase the response rate, improve survey clarity and simplicity, and address potential language barriers. Understanding these limitations allows for a more cautious interpretation of the results and underscores the importance of creating inclusive and culturally sensitive campus environments that enhance social interactions among international students at UNCG.

## **Conclusion**

The findings presented shed light on the experiences of international students at UNCG in terms of social interaction, feelings of isolation, and loneliness. The study's goal was to uncover strategies and design elements that can be implemented within UNCG's spaces to create an environment that promotes social interaction and reduces feelings of isolation and loneliness among international students. Based on the survey results, it is evident that a significant portion of the participants experiences periodic episodes of lacking companionship, feeling left out, and experiencing isolation. These feelings are associated with various campus spaces both interior and exterior. The reasons for feeling isolated in these spaces include the function of the space and design features. Participants' preferences for socialization spaces vary, with the majority spending time with others for studies or academic purposes. The library, EUC, and Kaplan Center emerged as the most frequently used spaces for socialization, with the EUC being the most preferred by the participants. However, despite the popularity of these spaces, a notable number of respondents expressed dissatisfaction with the interior design of their preferred socialization spaces. The design features that participants consider important when choosing a space to socialize include furniture placement, furniture design, landscape, and cultural preferences. The presence of greenery and natural elements also contributes to creating inviting social spaces. Observations conducted at the library, EUC, and Kaplan Center provide valuable insights into the activities and behaviors of individuals in these areas. The library serves as a space not only for individual study but also for group interactions and collaboration. Starbucks Cafe within the EUC building encourages more solitary activities, while Taylor Garden attracts a slightly higher percentage of individuals engaging in group interactions.

Overall, the data emphasize the importance of creating inclusive and welcoming campus environments that address the diverse needs and preferences of international students. To foster social interaction and reduce feelings of isolation, it is essential to consider design elements that promote cultural inclusivity, incorporate greenery and natural elements, and provide flexible and comfortable furniture arrangements. Additionally, creating spaces that facilitate both individual study and group interactions will contribute to a more vibrant and supportive campus community.

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## APPENDIX A: QUESTIONNAIRE

1. What is your native language?
  - Arabic
  - Chines
  - English
  - French
  - Indian
  - Persian
  - Spanish
  
2. How often do you feel that you lack companionship?
  - Hardly ever
  - Some of the time
  - Often
  
3. How often do you feel left out?
  - Hardly ever
  - Some of the time
  - Often
  
4. How often do you feel isolated from others?
  - Hardly ever
  - Some of the time
  - Often
  
5. How do you most spend time with others?
  - For studies or academic
  - For recreational activities
  - For socialization
  - For work
  
6. Have you ever experienced feelings of isolation in campus spaces? If yes, please describe where the space is located or just write the name of the space.



7. Based on your answer to the previous question, please describe why you felt isolated in the space. (Is there a reason such as design features or something related to the function of the space or ...)
8. When, if ever, have you experienced feelings of loneliness on campus?
9. Please describe the space where you experienced feelings of loneliness (building name/area).
10. Based on your answer to the previous question, please describe why you felt lonely in the space. (Is there a reason, such as design features or something related to the function of the space or ...)
11. To what extent does the campus in general match your ideal to encourage you to spend time with others?
  - Very Poor
  - Below Average
  - Average
  - Above Average
  - Excellent
12. What design features of space are important for you when choosing a space to socialize? (Check all that apply)
  - Furniture placement
  - Furniture design
  - Color of the walls
  - Design an area for a specific function in the space related to your culture
  - Design an area for a specific function in the space related to other country's cultures
  - Plants inside the space
  - Landscape
  - Other
13. Which space do you use most frequently on campus for socialization? (List the building name and area within the building/or outdoor spaces near the building)

14. Are you satisfied or dissatisfied with the design of the space that you just mentioned in the previous question?

- Satisfied
- Neutral
- Dissatisfied

15. Which space do you prefer most on campus for socialization? (Building name and area within the building/or outdoor spaces near the building)

16. How satisfied are you with the interior design of the space that you prefer most on campus for socialization?

- Extremely dissatisfied
- Somewhat dissatisfied
- Neither satisfied nor dissatisfied
- Extremely Satisfied
- Somewhat Satisfied

17. When on campus, what features of space do you prefer for socialization?

APPENDIX B: REDESIGNED INTERIOR SPACES AT ELLIOTT UNIVERSITY CENTER

FOR ENHANCING INTERNATIONAL STUDENT WELL-BEING



Figure B24. Context site (Elliott University Center)

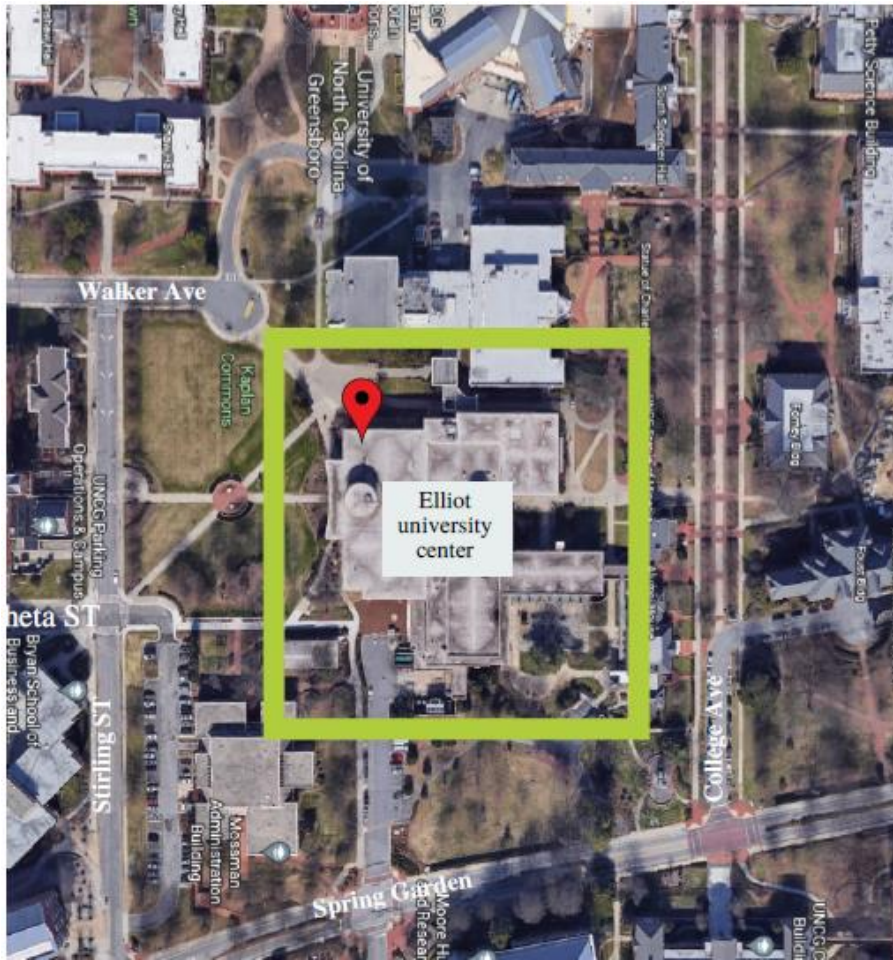
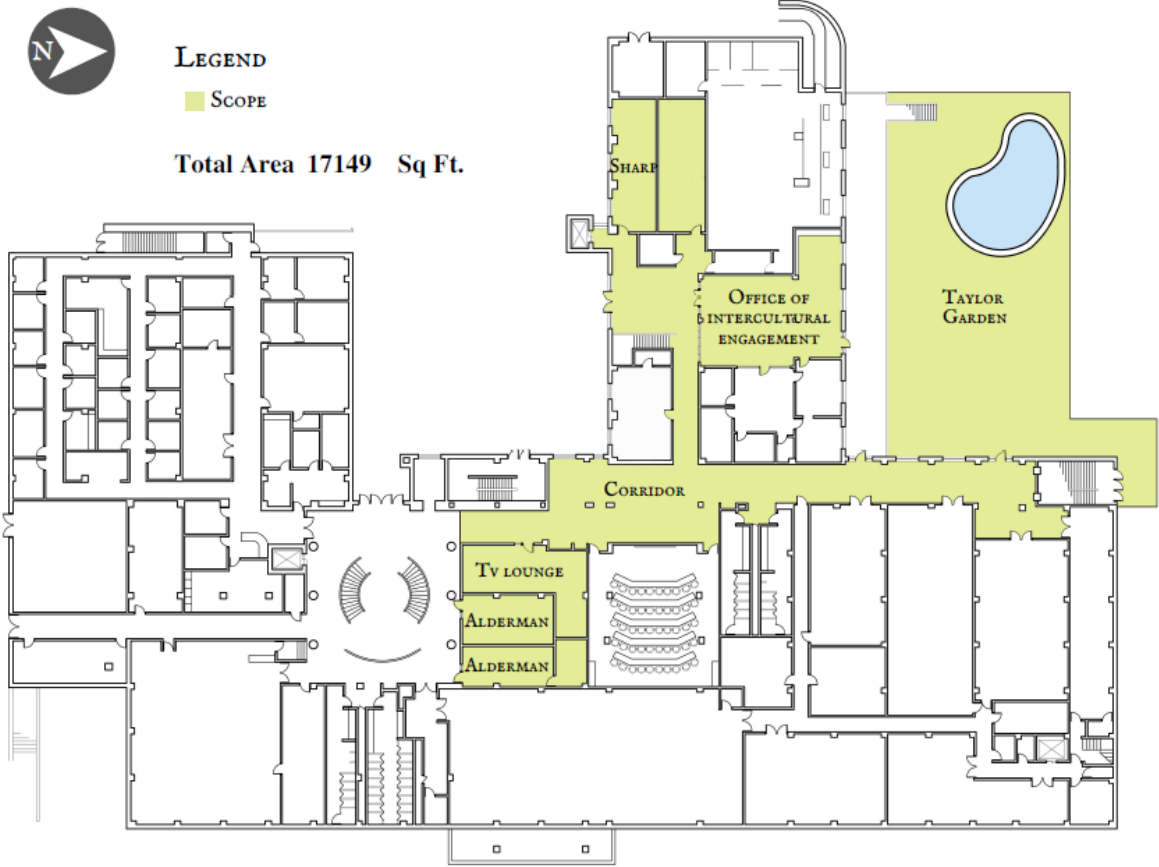
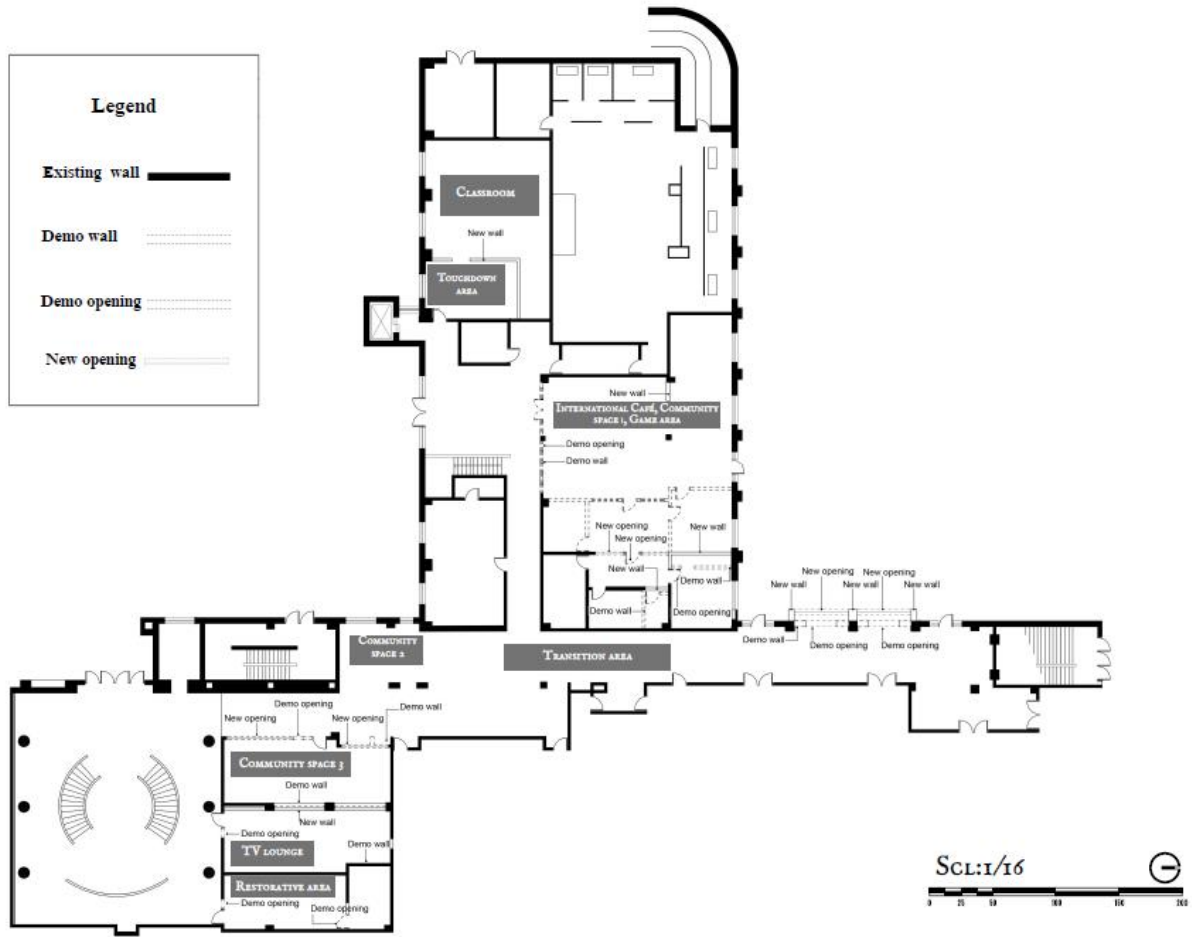


Figure B25. Existing floor plan



**Figure B26. Demolition plan**



**Figure B27. Floor plan**

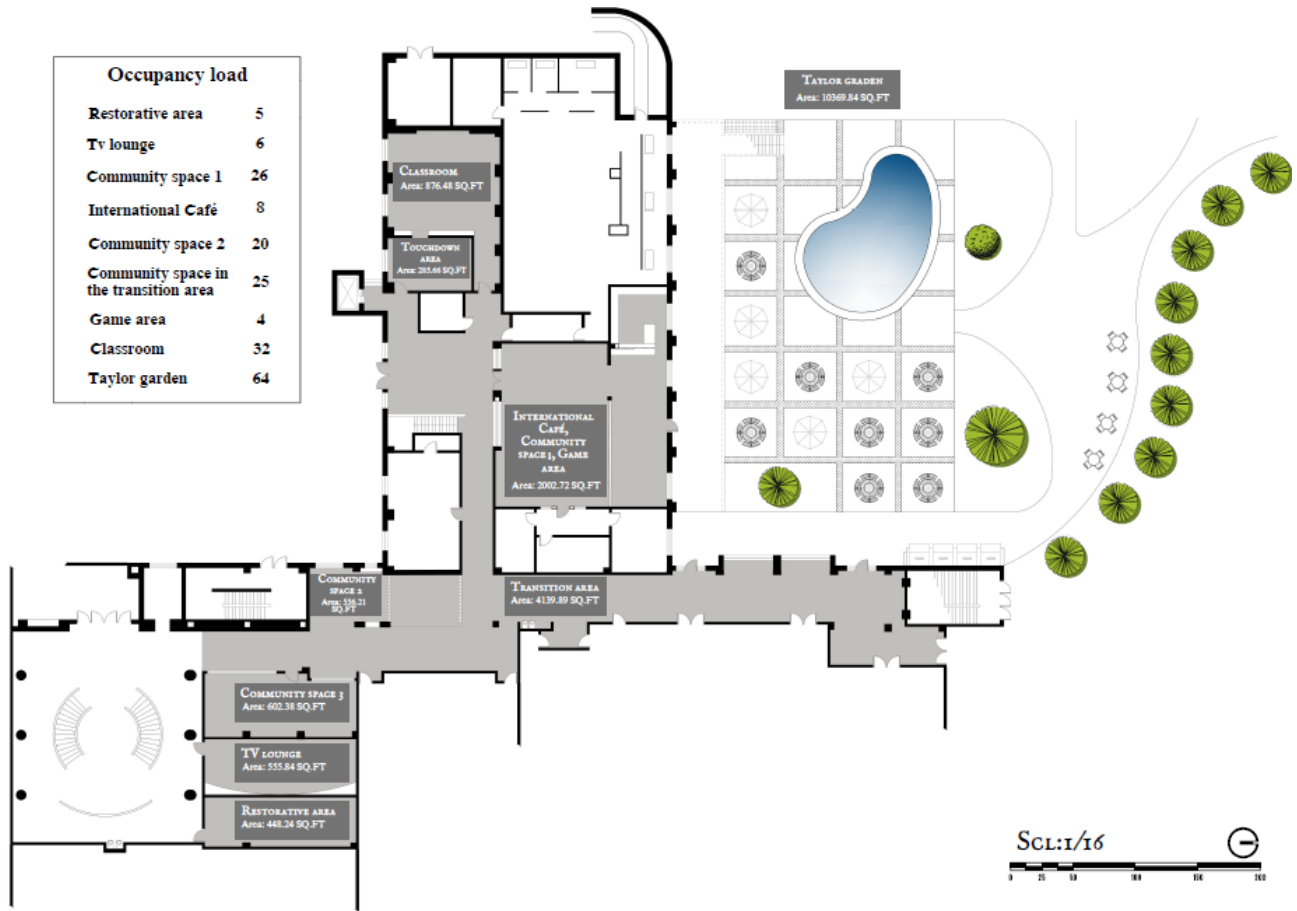


Figure B28. Furniture plan

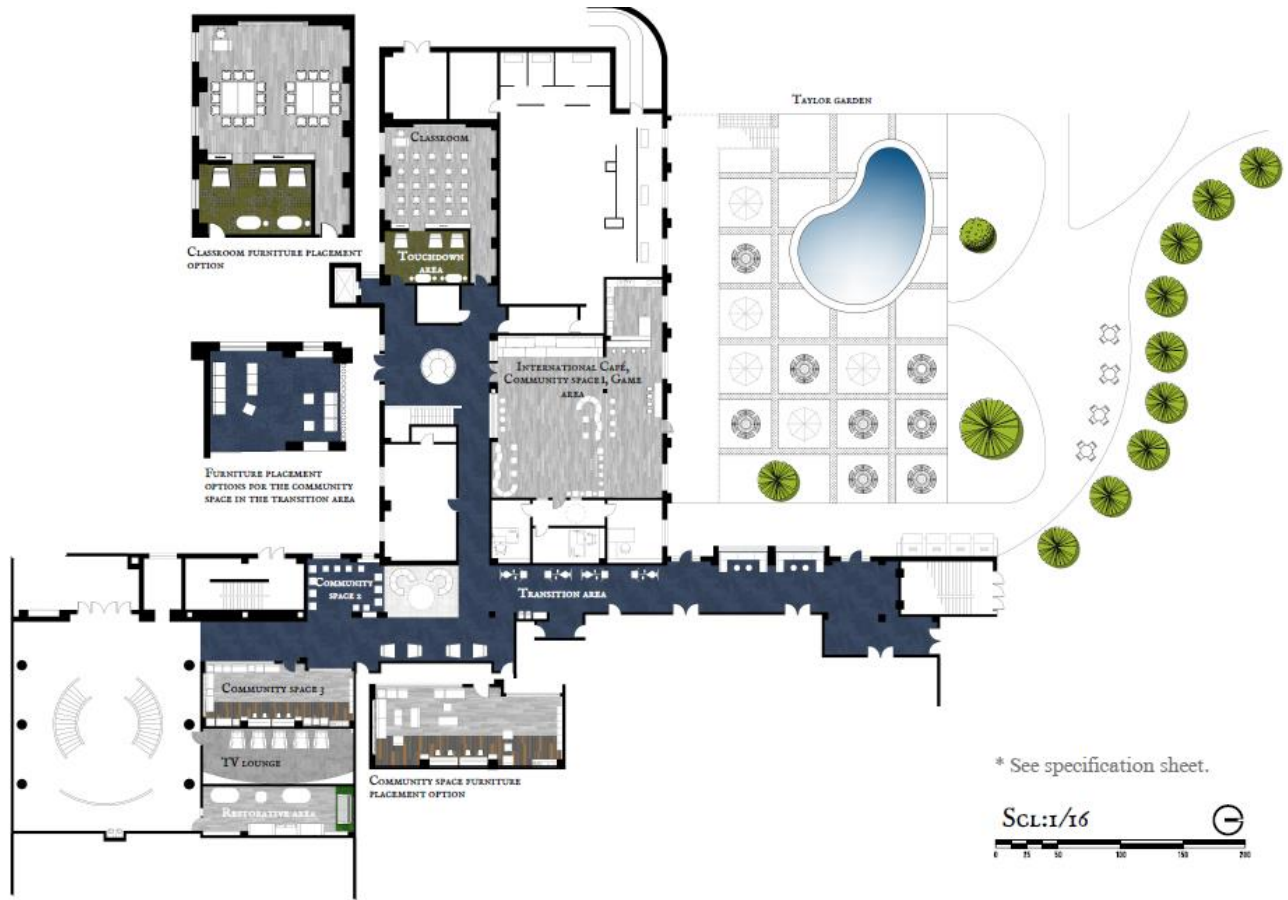
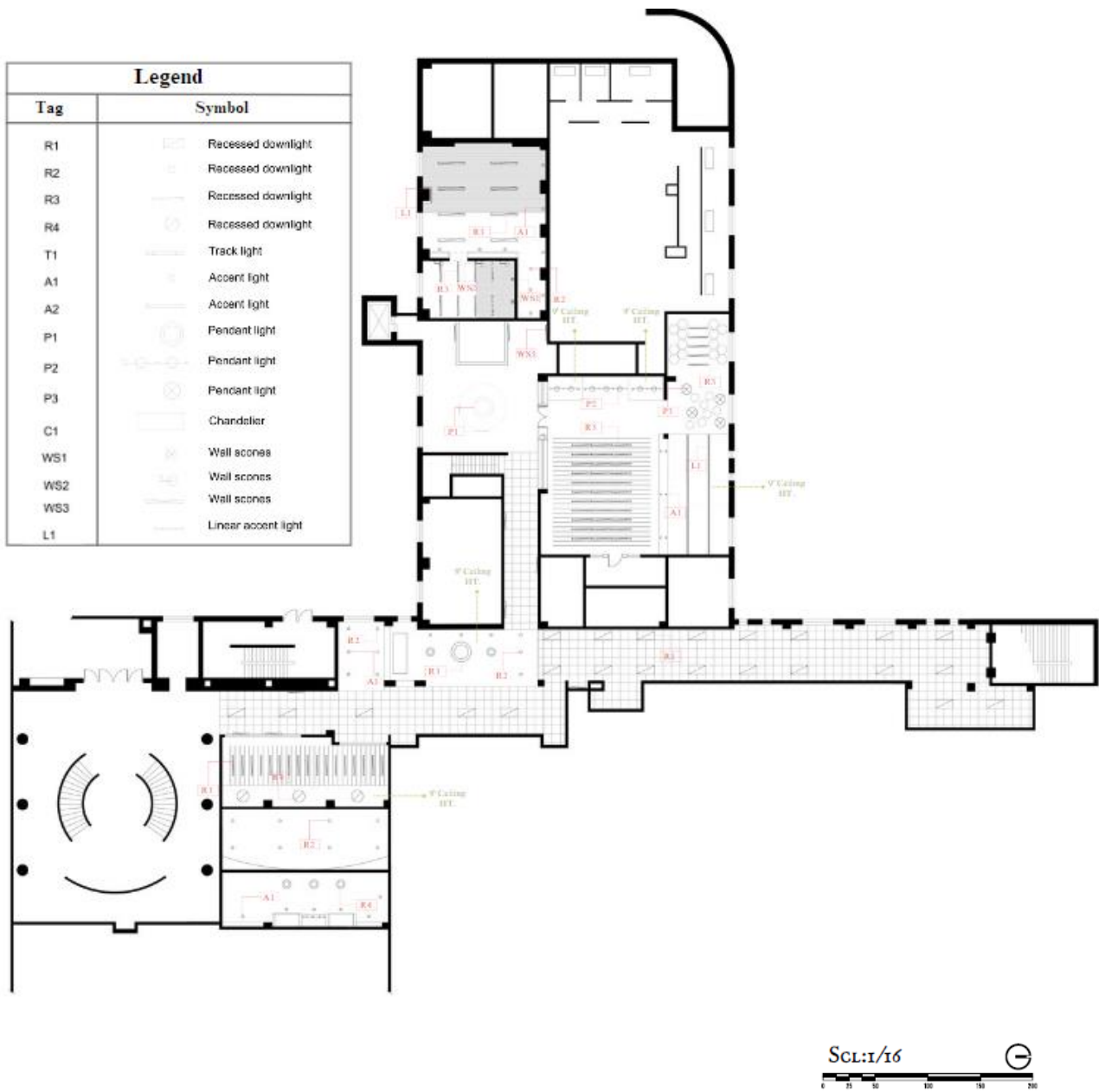


Figure B29. Lighting plan





**Figure B30. Before (Existing photo of Sharp lounge)**



Occupancy: 32  
 AREA: 876.48 SQ.FT  
 AREA: 81.42 SQ. meters

**Figure B31. After (Classroom)**

**Operable window**  
 (International WELL Building Institute, 2021)  
 Increase indoor air quality (A07)

**Green wall and view to the nature**  
 (International WELL Building Institute, 2021)  
 Provide connection to nature (M02)

**Portable furniture**  
 (Zimmerman, 2020)

**Adjustable furniture**  
 (International WELL Building Institute, 2021)

- Make an active learning space
- Enhanced ergonomic (V02)

**Red color**  
 Symbol of happiness and good fortune in chine's culture  
 ("The Meaning of Red and Other Colors in Chinese Culture," n.d.)  
 Symbol of fertility and purity in Indian culture  
 ("Symbolic Colors in India," n.d.)  
 Symbol of liveliness and warmth in Iranian culture  
 ("An Introduction to the Persian Colors," n.d.)

**Water bottles**  
 (International WELL Building Institute, 2021)  
 Drinking water promotion (W06)

**Dark finished wall**  
 (Stantec, n.d.)  
 Provides better biological support

**Acoustic floor finish**  
 (International WELL Building Institute, 2021)  
 Using sound-absorbing materials (S04)

**There is sufficient space for students' belongings**  
 Based on observations, the observed spaces lack sufficient room for students' belongings.

















**Large windows**  
 (International WELL Building Institute, 2021)

- Circadian lighting design (L03)
- Enhanced daylight access (L05)

**Figure B32. After (Touchdown area in the classroom)**

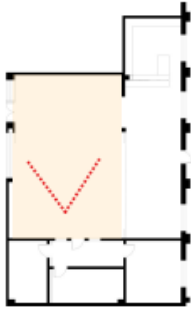


**Figure B33. Furniture and finishes specification of the classroom and touch down area**

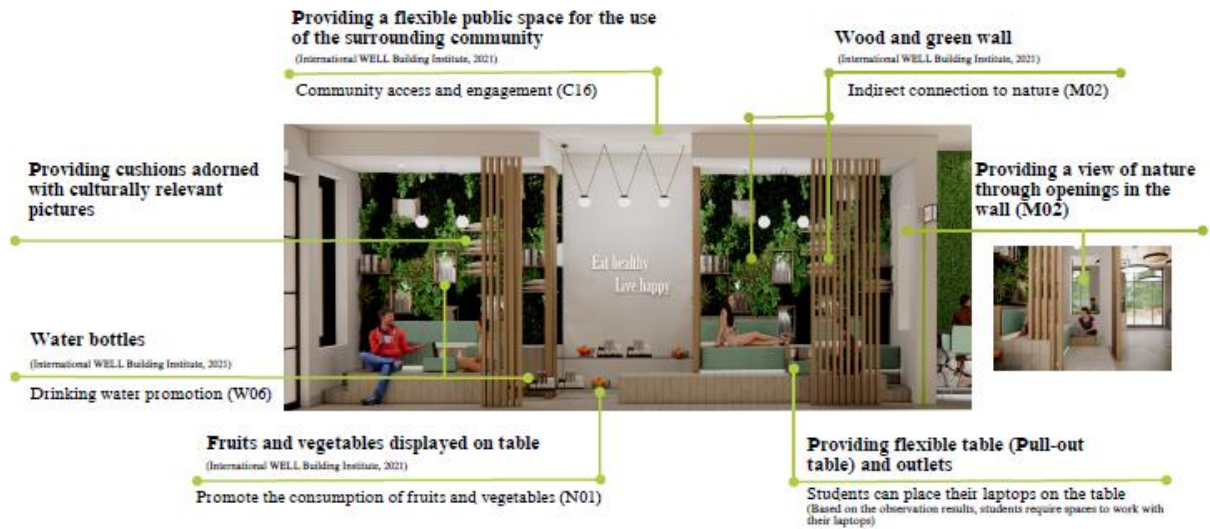
<b>Furniture</b>			<b>Finishes</b>		
			<b>WALL</b>		
Chair by Steelcase	Height Adjustable Desk by Steelcase	Criterion office chair by Steelcase (High adjustable)			
			<b>FLOORING</b>		
Buzzi Booth stand and sitting workstation	Verb education desk by Steelcase	Buzz ring and Buzzimilk bar			
<b>Lighting</b>			<b>CEILING</b>		
					
STL-FLP pendant by EAE lighting	Cylinder LED sconce by West elm	Swing Arm Sconces	Olympus White SW 6253	Tanager SW 6601	

**Figure B34. Before (Existing photo of Office of intercultural engagement)**





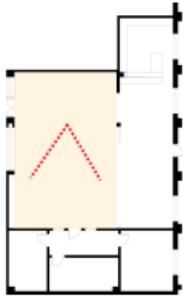
**Figure B35. After (Community space 1)**



**Figure B36. Before (Existing photo of Office of intercultural engagement)**







**Figure B37. After (Community space 1)**



**Figure B38. Before (Existing photo of kitchen at the Office of intercultural engagement)**





**Figure B39. After (International Cafe)**

**Using natural stone under counters and natural wood on the ceiling**  
(International WELL Building Institute, 2021)

**Using acoustic panels on the ceiling and acoustic wallpaper on the wall**  
(International WELL Building Institute, 2021)

**Using sound-absorbing objects and materials (S04)**

**Large windows**  
(International WELL Building Institute, 2021)

- Circadian lighting design (L03)
- Enhanced daylight access (L05)
- Connection to the nature (M02)

**Providing outlets to charge electronic devices**  
 It promotes extended student stays by permitting device usage

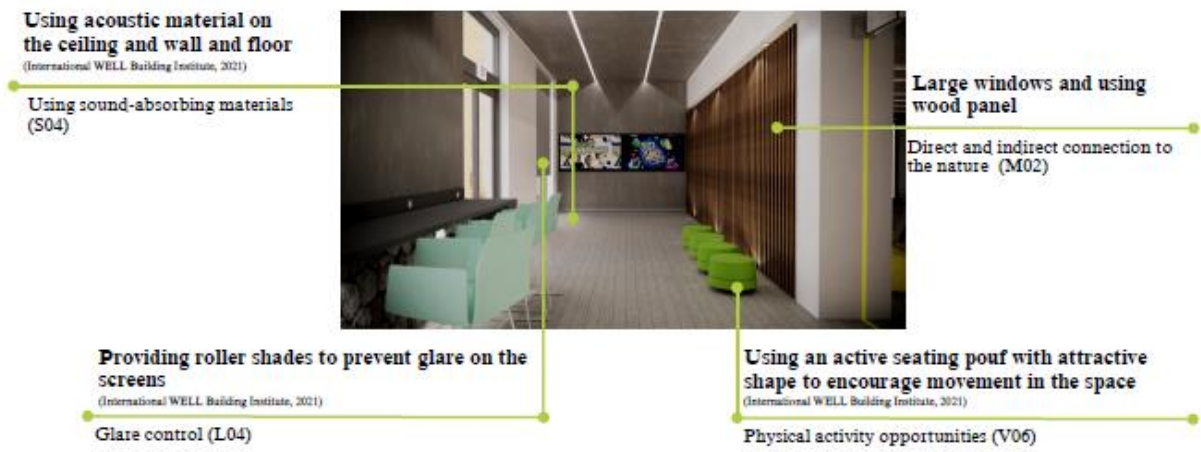
**Volatile compound reduction through using natural materials (X10)**

**Figure B40. Before (Existing photo of Office of intercultural engagement)**

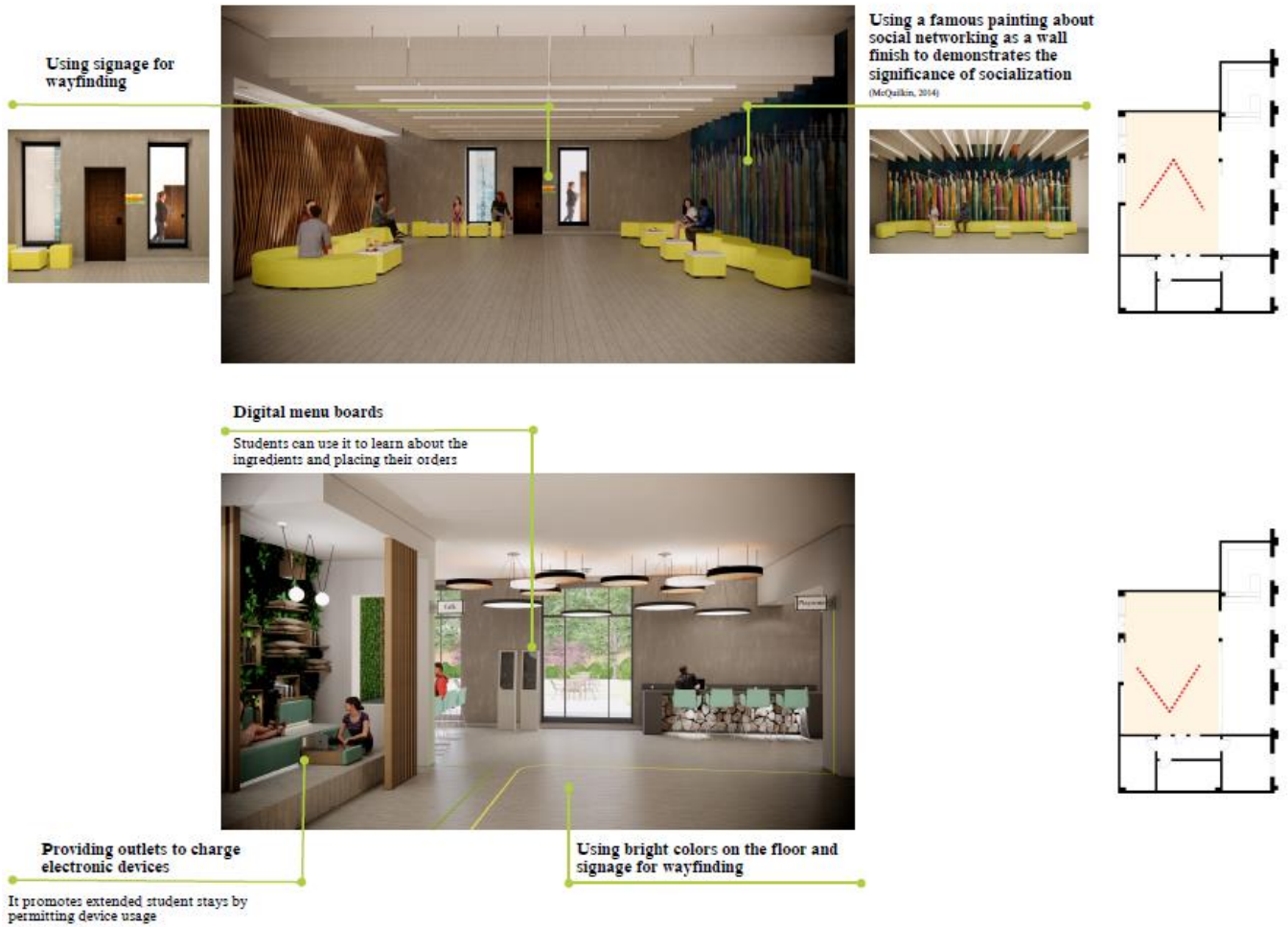




**Figure B41. After (Game area)**



**Figure B42. After (Community space 1 and international cafe)**





**Figure B43. Furniture and finishes specification of the community space 1, International Café and Game area**

**Furniture**



K. Lounge Modular bench by Knoll



Powered table by Knoll



Jalis bar chair by COR



BuzziBalance

**Lighting**



MINE GLASS SPACE 2L White suspension By Faro Barcelona



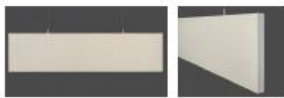
Acousto Round S by Intro lighting



Round shape sound absorbing ceiling panel by FilzFelt



STL-FLP pendant by EAE lighting



Sound absorbing ceiling panel by FilzFelt

**Finishes**

**WALL**



Olympus White SW 6253



Night OWL SW 7061



Buzzi skin Concrete pattern

**FLOORING**



Proximity Mills Low VOC Vinyl

**CEILING**



Olympus White SW 6253



Buzzi skin Concrete pattern

**Figure B44. Before (Transition area)**



**Figure B45. After (Community space 2)**

**Display the alphabet of each language**

**Bamboo partition**

- Symbol of virtue in chinese' culture ("Chinese Bamboo Culture," n.d.)
- Bamboo is sacred in Indian religious (Chandrasekhara & Vivanash, 2019)

**Operable window**  
(International WELL Building Institute, 2021)

Increase indoor air quality (A07)

**Portable furniture provides a flexible community space for groups**  
(International WELL Building Institute, 2021)

Community access and engagement (C16)

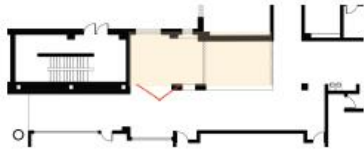
**Large windows**  
(International WELL Building Institute, 2021)

- Circadian lighting design (L03)
- Enhanced daylight access (L05)
- Connection to the nature (M02)

**Lotus flower (Fake)**

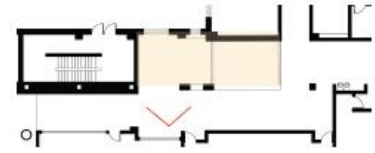
The national flower of India ("National Flower of India," n.d.)  
Lotus is precious in Buddhism and is symbol of purity in chine culture ("Chinese Flower: Lotus," n.d.)

**Figure B46. After (Community space 2)**



**Using a painting of a palm tree as a wall finish**

The Palm Tree holds great significance in Saudi Arabia as the national tree, providing dates as a vital food source, and playing a key role in traditional crafts, culture, and the economy. (Bhajan, n.d.)



**Haftsin**

Symbol of Iranian new year  
(\*All About Haft Sin,\* n.d.)

There is a QR code on the board to give more information to students about Nowruz



Holi festival  
(<https://www.zenophiles.com>)

**Holi**

Symbol of festival of color in India  
(\*Festival of Colors in India,\* n.d.)



**Figure B47. Furniture and finishes specification of the community space 2**

**Furniture**



K. Lounge Modular bench by Knoll



Powered table by Knoll



BuzziHub for two people



BuzziTube



Desk bike by FlexiSpot



Maya Lin table by Knoll

**Lighting**



BuzziJet



Wide LED Mini Pendant by Lamps plus



Round Downlight by WAC lighting

**Finishes**

**WALL**



Olympus White SW 6253

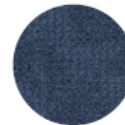


Luxe Blue SW 6538



Forbo Solid Concrete 3741

**FLOORING**



Carpet by Interface



GRAND CALACATA PORCELAIN TILE by Floor & Décor

**CEILING**



Olympus White SW 6253



Luxe Blue SW 6538

**Figure B48. Before (Tv lounge)**



**Figure B49. After (Community space 3)**

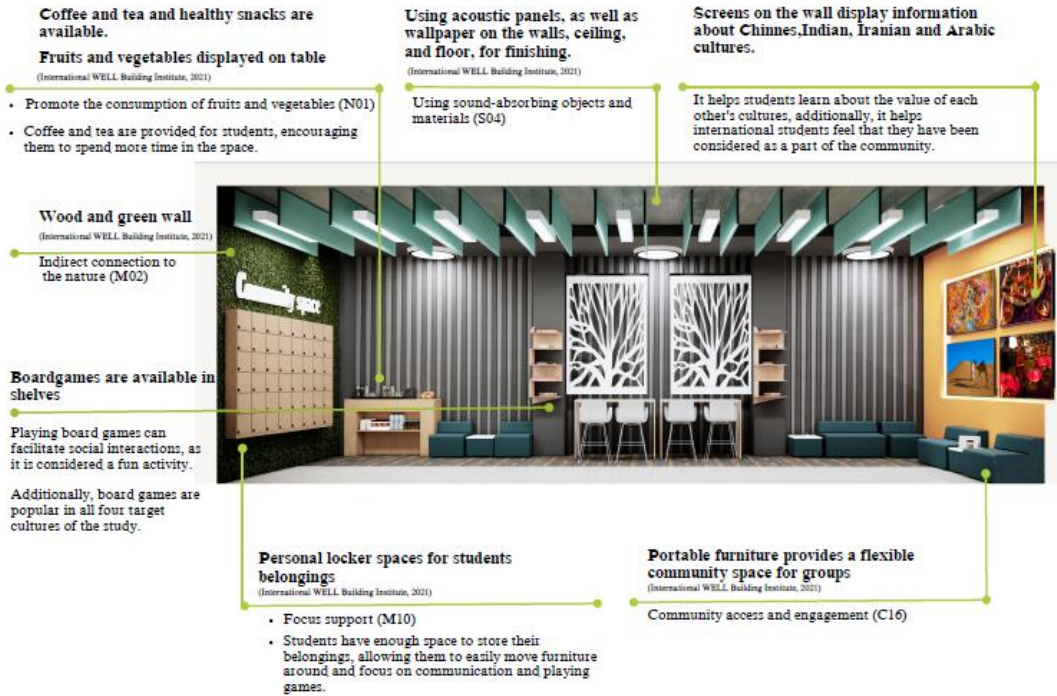
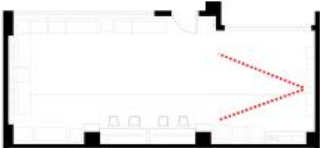
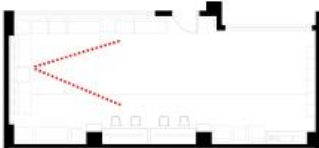




Figure B50. After (Community space 3)



Perspective 3



Perspective 4



Perspective 3



















Perspective 4

Air quality monitoring (A08)

(International WELL Building Institute, 2021)

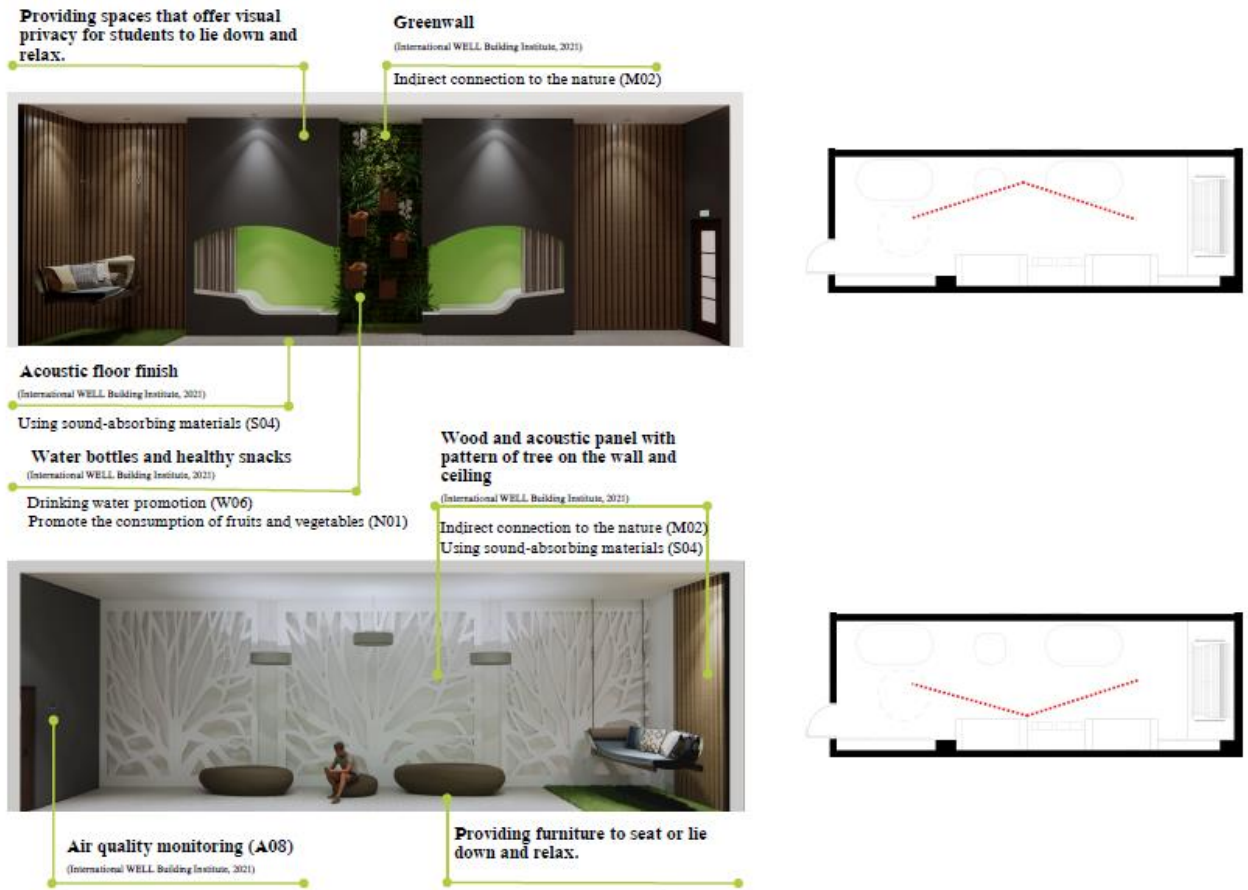
**Figure B51. Furniture and finishes specification of the community space 3**

<p><b>Furniture</b></p>  <p>K. Lounge Modular bench by Knoll</p>  <p>BuzziFall</p>  <p>Powered table by Knoll</p>  <p>Jalis bar chair by COR</p>  <p>Acoustic panel by FilzFelt</p>  <p>Samos bartable by Borek</p> <p><b>Lighting</b></p>  <p>Supernova light by Deltalight</p>  <p>Sound absorbing ceiling panel by FilzFelt</p>  <p>STL-FLP pendant by EAE lighting</p>	<p><b>Finishes</b></p> <p><b>WALL</b></p>  <p>Olympus White SW 6253</p>  <p>GUSTO Gold SW 6904</p>  <p>Buzzi skin Concrete pattern</p> <p><b>FLOORING</b></p>  <p>Carpet by Interface</p>  <p>Proximity Mills Low VOC Vinyl</p> <p><b>CEILING</b></p>  <p>Night OWL SW 7061</p>  <p>Buzzi skin Concrete pattern</p>
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**Figure B52. Before Alderman lounge 1**



**Figure B53. After (Restorative area)**





**Figure B54. Furniture and finishes specification of Restorative area**

**Furniture**



3 and 6 ft Sofa Sack



Lounge Swing



BuzziFold

**Lighting**



BuzziJet



Round Downlight  
by WAC lighting

**Finishes**

**WALL**



Olympus White  
SW 6253



Center Stage  
SW 6920



Night OWL  
SW 7061

**FLOORING**



Proximity Mills  
Low VOC Vinyl

**CEILING**



Olympus White  
SW 6253

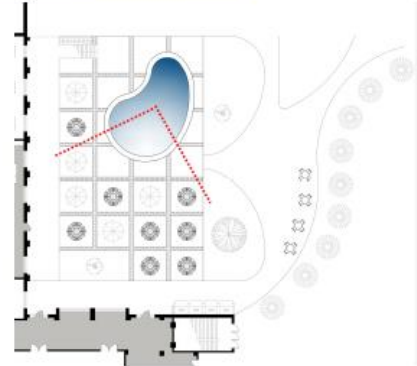
**Figure B55. Taylor Garden**



**Figure B56. After (Taylor Garden)**

Based on the observations students gravitate towards seating areas with tree shades, while other benches often go unoccupied. By adding shades, I aim to promote increased utilization of the garden space and encourage students to spend more time in a comfortable and inviting environment.

Providing Round-shaped furniture for groups facilitates socialization by encouraging face-to-face interactions and creating an engaging environment.



Using architectural patterns and arts as symbolic representations of each culture, the street food stations are designed to celebrate the unique heritage and artistic expressions associated with the cultural traditions of India, China, Iran, and Saudi Arabia.



Adding hooks underneath each table to provide students with a convenient place to hang their backpacks.

**Figure B57. Furniture specification of Taylor Garden**

**Furniture**



Pantagrul Picnic Table by Steelcase



Hosu Lounge Seating by Steelcase

**Lighting**



Round Downlight  
by WAC lighting

**Finishes**

**WALL**



Olympus White  
SW 6253



Night OWL  
SW 7061

**FLOORING**



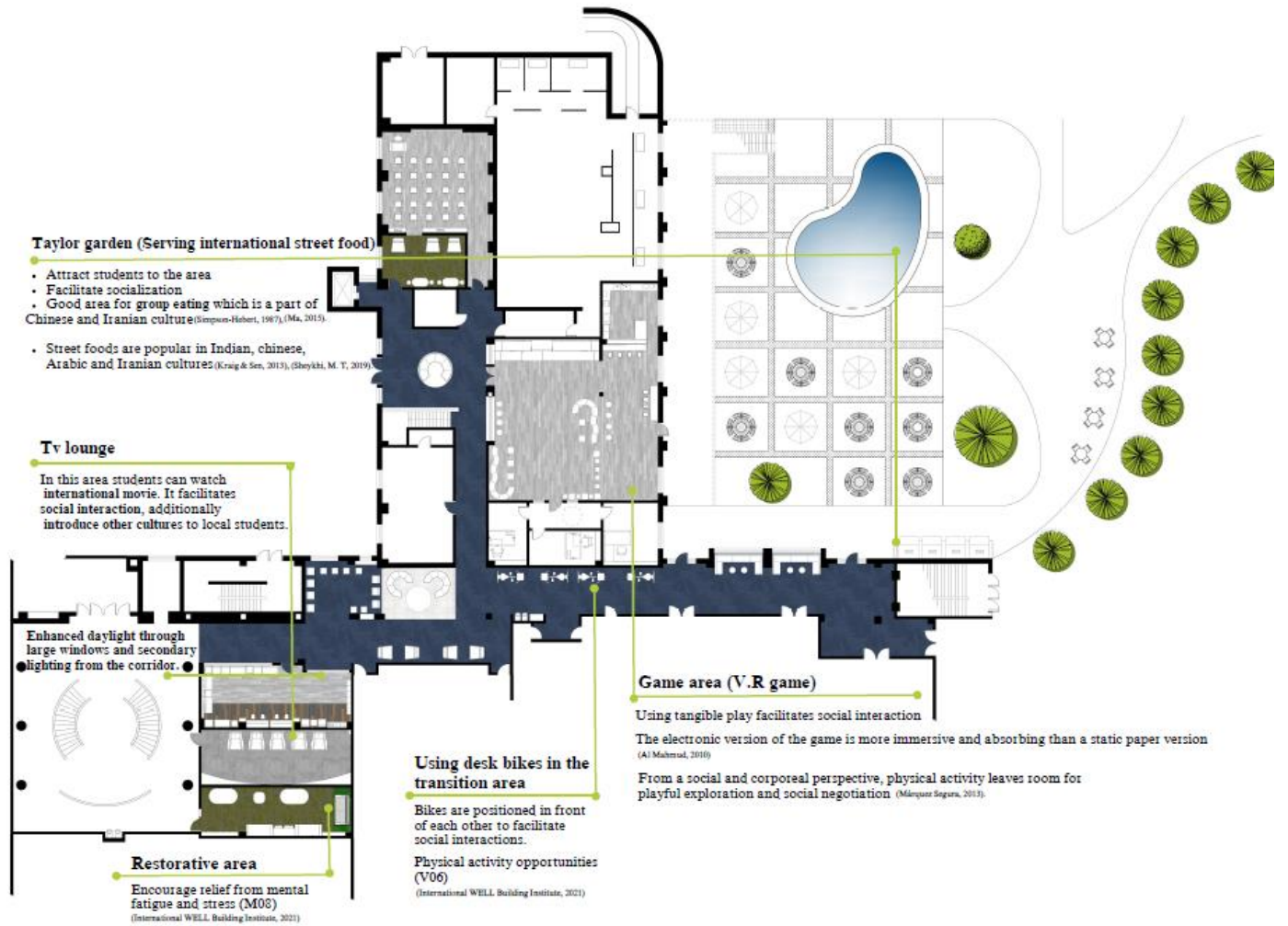
Carpet by  
Interface

**CEILING**



Night OWL  
SW 7061

**Figure B58. Furniture plan**



## APPENDIX C: IRB APPROVAL

Date: 8-22-2023

IRB #: IRB-FY23-150

Title: The influence of university spaces on international students' mental well-being

Creation Date: 10-4-2022

End Date:

Status: **Approved**

Principal Investigator: Shima Talebian

Review Board: UNC-Greensboro IRB

Sponsor:

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### Study History

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Submission Type	Initial	Review Type	Exempt	Decision	No Human Subjects Research
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### Key Study Contacts

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Member	Shima Talebian	Role	Principal Investigator	Contact	s_talebian@uncg.edu
Member	Shima Talebian	Role	Primary Contact	Contact	s_talebian@uncg.edu
Member	Amanda Gale	Role	Co-Principal Investigator	Contact	ajgale@uncg.edu

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**To:** Shima Talebian  
Interior Architecture

**From:** UNCG IRB  
**Date:** 11/11/2022

**RE:** Determination that Research or Research-Like Activity does not require IRB Approval  
**Study #:** IRB-FY23-150  
**Study Title:** The influence of university spaces on international students' mental well-being

This submission was reviewed by the above-referenced IRB. The IRB has determined that this submission does not constitute human subjects research as defined under federal regulations [45 CFR 46.102 (d or f)] and does not require IRB approval.

If your study protocol changes in such a way that this determination will no longer apply, you should contact the above IRB before making the changes.