Students' sense of belonging at Architecture of Campus Spaces

Suvekshya Acharya a, Sudha Shrestha b

- a, b Department of Architecture, Pulchowk Campus, Institute of Engineering, Tribhuvan University, Nepal
- a 078march019.suvekshya@pcampus.edu.np, b ioe.sudhashrestha@gmail.com

Abstract

This study explores the relationship and indicators of students' sense of belonging at architecture of spaces of two engineering colleges in Nepal. Using a qualitative approach, including surveys and interviews with architecture students, the study examines how various physical spaces on campus, such as parks, canteens, and gathering spaces, influence students' perceptions of belonging and well-being. The findings suggest that campus physical spaces play a critical role in students' sense of belonging and community on campus, with green spaces and gathering spaces emerging as particularly important. The study also highlights the need for greater student input in the design and use of campus physical spaces, as well as the importance of promoting diversity and inclusivity in these spaces. The implications of these findings for enhancing students' sense of belonging and overall well-being on campus are discussed, along with recommendations for future research and practice.

Keywords

Sense of belonging, physical space, college environment

1. Introduction

Belonging in education is the perception of being accepted, valued, and included in class activities [1]. perceptions of belonging at university are crucial to their overall experience and well-being during their time in higher education. This experience might include a sense of belonging to the institution as a whole as well as to particular communities or groups within, including fellow students, professors, or student organizations. Sense of belonging has been linked to a number of outcomes for college students, including retention, academic standing, and self-worth [2]. Universities have a variety of purposes. They are significant communal hubs in addition to being places of learning, scholarship, teaching, and research [3]. Sense of belonging has various dimensions as aspects of belonging to place [4] and geography [5]. This connection is often rooted in personal experiences and memories, cultural and social ties, and a sense of community. The university campus can bring together diverse groups of individuals, thereby promoting integration [6], however, not all groups necessarily utilize campus space in the same way, which could unintentionally disadvantage others [7].

The ideal campus permits learning to take place anywhere, not just in formal learning areas. Communal spaces such as lounges, cafes, and outdoor areas can provide opportunities for students to come together and form relationships, which in turn can contribute to a stronger sense of belonging. Universities are also places where many groups interact, and how these groups use space may have an impact on their personal, educational, and sense of belonging there [8]. Several factors influence how students perceive the campus environment. These include their comprehension of the nature, significance, and symbolism of campus settings; appropriate behaviors within spaces; and the human interactions they encounter therein [9].

Campus architecture, public areas, residential life, and classroom design are some of the characteristics that contribute to a sense of belonging in the physical setting of college [10]. According to [11], campus architecture and design can influence students' sense of belonging by establishing areas that encourage connection, engagement, and community development. [12] and colleagues investigated the impact of classroom design on sense of belonging and discovered that classrooms built to promote cooperation and interaction resulted in higher levels of belonging.

The perception of a college campus environment's physical setting can have a significant impact on students' learning experiences. Several studies have found that students who have a strong sense of belonging and connection to their campus environment are more likely to participate in academic and social activities, which can lead to higher levels of academic accomplishment and satisfaction with their college experience [13]. However, students' perceptions of the campus environment are very subjective and can vary greatly. Furthermore, students' opinions of the physical setting of the campus environment can be influenced by a variety of elements, including the quality of facilities, classroom design, resource availability, and service accessibility. belonging and accessibility to one another are impacted by the campus' spatial organization [8]. The design and arrangement of physical spaces on campus to create an environment that supports the goals of the institution and the needs of its users. When it comes to enhancing the sense of belonging among university students, spatial planning can play a key role in creating spaces that encourage social interaction and foster a sense of community.

2. Research Objectives

The study delves into the various elements that foster a sense

of belonging among students and investigates how the environment influences their engagement, motivation, and overall learning outcomes. This study aims to achieve two primary objectives:

- To study the architectural features that contribute to the sense of belonging of students at campus spaces.
- To study the design impact of the campus environment on students' learning experiences.

3. Literature Review

3.1 Academic Belonging

As stated by Lewis and colleagues, "Belonging has long been recognized as an innate human need and an important driver of physical and psychological well-being," and they define academic belonging as "the extent to which individuals feel like a valued, accepted, and genuine member in their academic domain." [14]. Students' cognition, emotion, and attitude are all influenced by their sense of belonging [15]. It suggests that when students feel like they belong in their academic community, they are more likely to engage in academic behaviors, feel more confident in their abilities, and have a stronger sense of purpose and motivation. This can result in improved academic performance and overall Interpersonal interactions with students. well-being. instructors, advisers, and staff members within a program and department take effect in an academic setting. It matters how frequently people engage with one another and how intensely these relationships are [16]. Being socially linked to people in their major requires having interpersonal interactions. Interventions that focus on increasing academic belonging can involve promoting inclusivity and a sense of belonging, providing opportunities for student-faculty interaction, and helping students feel that they have a meaningful role in the academic community.

3.2 Social Interaction Theory

According to social interaction theory, individuals build a sense of self and belonging through their interactions with others in social circumstances [17]. According to this idea, social contact is crucial in defining one's identity and sense of belonging, especially in contexts like colleges where people are continuously interacting with new people and groups. Social connection is important in establishing a sense of belonging at universities, according to research. discovered, for example, that students who reported higher degrees of social integration and peer relationships were more likely to report a sense of belonging at their university. Similarly, [18] discovered that social contacts, such as participation in student clubs and activities, were positively connected with students' sense of belonging. Furthermore, research has shown that the quality of social contacts is important in establishing a sense of belonging. discovered, for example, that the quality of contacts with peers, such as feeling respected and appreciated by others, was a better predictor of sense of belonging than the frequency of interactions.

3.3 Spatial Belonging

Students' learning and university experiences are significantly impacted by the campus environment [20]. This extends beyond the buildings to include the entire campus, including the outdoors [21]. Student belonging and ease of interaction are impacted by the physical setting of the campus. The physical space of the campus contributes to the development of social and learning relationships and feelings of belonging; it is not neutral [14]. This refers to the idea that students develop a sense of belonging to their university through their physical experiences in the built environment of the campus. This includes elements such as buildings, spaces, and places, as well as social interactions with other students, staff, and faculty. Campus space at universities is a contested matter since it is a result of social interactions [22]. The way that space is utilized and negotiated indicates the claims of various groups, and practices of belonging are fundamentally exclusive [5]. The theory suggests that students who feel a strong sense of belonging to their university are more likely to have positive academic and social outcomes, including increased motivation, engagement, and overall satisfaction with their university experience. The low degree of social interaction in learning environments is frequently caused by weak environmental elements, notably symbolic, semantic, and physical ones [23].

4. Research Method

A qualitative research approach is used to carry out this research. Under the qualitative research methodology, phenomenology is used as focuses on the study of lived experiences of individuals, and how they make meaning of those experiences. In the context of studying students' sense of belonging at university, a phenomenological approach would involve understanding how students experience and interpret their sense of belonging in that environment.

Participants in this study are university undergraduate students from a diverse range of backgrounds. The process of selecting participants involved criterion sampling, in which potential participants are chosen based on particular standards or traits relevant to the research. Twenty undergraduates from architecture faculty, ten from each Thapathali Engineering campus and engineering campus are interviewed. Two students from each batch year- one male and one female are taken as sample for the research.

Thapathali Engineering Campus is located in the Thapathali area of Kathmandu, Nepal and has an area of 39-9-1-3 (R-A-P-D). This college offers six bachelor's and two master's level programs in engineering and technology. Approximately 1800 students are enrolled in various programs at Thapathali Engineering Campus, and the research study is limited to the 240 architecture students in the college. Similarly, Pulchowk Engineering Campus is also located in the Kathmandu Valley and has a much larger land area of about 480 ropani. The college offers eight bachelor's and twenty-two master's level programs in engineering and technology. Approximately 3800 students are enrolled in various programs at Pulchowk Engineering Campus, and the research study is limited to the 240 architecture students in the college.

Participants were questioned in semi-structured interviews to gather data. The focus of the open-ended interview questions was on the participants' experiences of belonging, including factors that enhance or diminish that sense of belonging. Audio recordings and transcriptions of the interviews were made for analysis. Thematic analysis method is used for data analysis for examining data in this research. It entails discovering and understanding patterns, themes, and meanings in data obtained from participants. The research objective and participants' rights were all be explained to participants. Prior to the interview, informed consent was managed to gather from each participant.

5. Data Analysis

During the course of fifteen days, two open ended interviews were conducted. Twenty students took part. Gender ratio was even among participants. Every participant was a full-time architecture student. A total of 75 comments were made about the campus, which fell into seven major themes. Table 1 displays these, along with subthemes and explanatory notes.

The data results present a number of themes and subthemes relevant to the college setting. A key component that has emerged is interpersonal engagement, which includes social interaction areas, exhibitions, conference rooms, discussion shows, sporting activities, and social clubs. Participants observed how outdoor activities facilitated connections between students from different faculties and strengthened bonds between seniors and juniors.

Another important factor was the proximity of the spaces, with an emphasis on the visual links between them and the ease of access inside departments. Participants found it convenient that classrooms and other areas were close to the entrance because it made finding them easier. However, issues like skipping lessons because of the layout, such while playing basketball, were troublesome. Discussions on design grandeur, architectural façade, and visual contrast all had an impact on the external appearance. Positive comments were made about the welcoming entry, however there were also concerns raised about mismatches between the departmental identity and the exterior of the building. The difficulty finding classes inside the building had been brought into focus, especially in the absence of appropriate signage. The integration of nature contributed to the mood, with exposure to green spaces lifting spirits and

fostering social cohesiveness. The presence of the natural elements in the college environment contributed much to the satisfaction of the participants. The presence of the natural elements in the college environment contributed much to the satisfaction of the participants.

Accessibility was considered important for public events; however, some people thought the building's internal navigation might be improved. Inclusiveness was focused on interaction and communal areas, with a desire for greater opportunities to connect across departments. While there were compliments on comfort, such as how much participants enjoyed being in a collegiate environment, there were also comments about how uncomfortable old spaces were, notably in the design studio

6. Discussion

Overall, the data demonstrated the complexity of the college environment, where interactions, space layout, exterior appearance, integration of nature, accessibility, inclusivity, and comfort all work together to shape students' experiences and view

The study conducted at Pulchowk Campus revealed that students placed a great deal of emphasis on the visual connection between physical spaces and their proximity to one another. Students reported that the proximity of the playground, dabali, and terrace to the classrooms had a positive impact on their university experience, as it provided them with a space to relax and socialize in between classes. Their importance of space design for student's comfort is crucial. On the other hand, the study also found that certain physical spaces had a negative impact on students' university experience. For example, students mentioned the long, dark corridors in the department buildings, which made them feel uncomfortable and unsafe. Additionally, the presence of pigeon poop around certain spaces also had a negative impact on students' perceptions of the cleanliness and overall quality of the campus environment.

"The most important design studio class is very uncomfortable, more than the studio, it's like a consultation room."

"No interesting class space, the spaces haven't been updated according to the time"

- one of the second year and third-year respondent respectively of Pulchowk Engineering Campus said while talking about the importance of the design and upkeep of the university's physical space to students' sense of belonging. For instance, the lack of interesting class spaces and consultation rooms can make it difficult for students to engage with their coursework and seek help when needed. This can lead to feelings of isolation and disconnection from the academic community. Similarly, spaces that are not updated or well-maintained can be unappealing and uncomfortable for students to spend time in.

Discussing on the event or activity in the university that helped feel more connected to the university community, the exhibitions, sports events, talk programs, cultural programs has helped students build interpersonal relationship between seniors and juniors. More Interaction spaces leads to more student's engagement is seen in this research. These can include exhibitions, sports events, talk programs, and cultural programs, which offer opportunities for students to connect with each other and build relationships. Participating in such events and activities can help students feel more connected to the university community and facilitate interaction between seniors and juniors. For instance, cultural programs can showcase the diverse backgrounds and talents of students, leading to a greater appreciation for and understanding of different cultures. Similarly, sports events and exhibitions can foster a sense of camaraderie among students who share a common interest. Moreover, events and activities that encourage interaction and engagement can have a positive impact on students' academic and personal development. Like, attending talk programs or participating in debates can improve students' communication and critical thinking skills.

Table 1: The main themes and subthemes identified by participants

Themes	Sub themes	Illustrative comments
Interpersonal interaction (n=20)	Social interaction spaces, Exhibition, Conference Hall, Talk program, Sport events, social clubs,	"The bonding between senior and junior gets better during outdoor programs", "i get to hang out and know friends from other faculties"
Space proximity (n=12)	Visual connection between spaces, connection within departments, design clarity	"The classes and other spaces are near the entrance of the gate so its easy", "When playing basketball, you have to go down and come back up, and by the time you return, you've missed classes, and that's really frustrating."
External Appearance (n=17)	Design grandeur, The visual axis, A blended architectural façade design, Visual Contrast	"Welcoming Site Entrance", "the exterior isn't according to the department. the first time i came here, I thought dean office as architecture block but i came to know the building aside was the one. though the site has welcoming entrance, after entering the building its confusing where the class is, there's a wall ahead without signage about class and admin."
Integration of nature (n=15)	Exposure to nature and social cohesion, green space, freshen mood	"I find this college environment enjoyable", "The natural aspect still is something that brings out life in me. After 30-40 mins of transport, the nature and trees refresh the mood and it gives a new kind of energy, that is something that has made me fall in love with Pulchowk for the first time"
Accessibility (n=11)	Wander around, walkability,	"Accessibility is good in terms of public gathering", "It is good to roam around with same ground level but can be better inside building"
Inclusiveness (n=16)	Interaction spaces, communal spaces,	"There is very little reason to interact with other students.", "A common meeting spot between different departments could be built where they could cross paths."
Comfort (n=19)	Thermal, classroom, comfort through design, visual comfort	"The spaces haven't been updated according to the time", the most important design studio class is very uncomfortable, more than the studio, it's like a consultation room."

Interacting with seniors and faculty members can also provide valuable insights into academic and career opportunities.

Students have emphasized the need for a sports area near department blocks. This can help students take a break from their academic work and engage in physical activity, leading to better physical and mental health. It can also foster a sense of community among students who share a common interest in sports. Secondly, students have highlighted the importance of visual connections between spaces. This means that physical spaces should be designed in a way that allows students to easily move between them, leading to a more connected and cohesive university environment. This can help students feel more included and engaged with their academic community. Thirdly, students have suggested using abandoned spaces to revive bonding between seniors and juniors. This can involve creating spaces where students can gather and socialize, such as a common room or lounge area. Such spaces can help foster a sense of community and belonging among students and facilitate interaction between seniors and juniors. Fourthly, students have emphasized the need for an updated cafeteria with working space and charging spots. This can provide students with a comfortable and functional space to study and socialize, while also addressing their practical needs, such as access to charging facilities.

Talking about the university's exterior and its impact on students' sense of belonging, one of the respondents of Pulchowk Campus said-

"The exterior isn't according to the department. The first time I came here, I thought dean office as architecture block but later came to know the building aside was the one. though the site has welcoming entrance, after entering the building its confusing where the class is, there's a wall ahead without signage about class and admin."

The lack of coherence in the exterior design of the university

can be disorienting and confusing for students. This can make it difficult for students to navigate the campus and find the buildings and classrooms they need. Additionally, the monotonous brick buildings and lack of visual contrast can also contribute to a feeling of disconnection and disengagement from the university community. Students may feel that the buildings do not reflect their interests or values, which can lead to a decreased sense of belonging and a lack of motivation to participate in university activities. To address these issues, universities can consider implementing more cohesive and visually appealing exterior designs that reflect the values and interests of their student community. This can include the use of color and texture to create a more dynamic and interesting visual landscape. Additionally, clear signage and wayfinding can help students navigate the campus more easily and feel more connected to the university community.

"The natural aspect still is something that brings out life in me. After 30-40 mins of transport, the nature and trees refresh the mood and it gives a new kind of energy, that is something that has made me fall in love with Pulchowk for the first time"

– 1st Year Respondent from Pulchowk Campus added. The impact of nature on human well-being has been extensively studied and is widely recognized. The presence of green spaces, trees, and nature in general, has a calming effect on the human mind and can boost mood and energy levels. This is particularly important in urban areas, where the concrete jungle can often feel oppressive and draining. The respondent's quote highlights the importance of nature in their experience of the Pulchowk Campus campus. Despite the long commute, the sight of trees and the green spaces on campus refreshes their mood and gives them a new kind of energy.

Pulchowk Campus is located in the heart of Kathmandu valley, which is a densely populated urban area with heavy traffic.

Amidst this concrete jungle, the open green spaces in the college campus stand out. The Love Garden, which is a small park within the campus, is a popular spot for students to relax and socialize. The playground and sports area are also surrounded by trees, which provide shade and a sense of calm. The sight of trees around the campus is a welcome respite from the chaotic and noisy environment outside. Moreover, research has shown that exposure to nature can improve cognitive function and academic performance. A study by the University of Illinois found that students who had views of trees from their classroom window performed better on tests than those who had views of a brick wall. The presence of nature on campus can also create a sense of connection between students and the environment, which can promote a sense of responsibility and stewardship towards the natural world.

"A common meeting spot between different departments could be built where they could cross paths."

- 1st Year Respondent from Pulchowk replied. Lack of communal space can lead to the isolation and disconnection. Having a communal space in the university campus, where students from different departments can meet, interact and collaborate with each other can be highly beneficial. Such a space can encourage the formation of social networks and the exchange of ideas, creating a sense of community that fosters student engagement and motivation. Moreover, these facilitate interdisciplinary communal spaces can collaboration and help students to develop a broader perspective on their academic fields. When students from different disciplines come together, they bring with them unique perspectives and skill sets, creating a diverse and dynamic learning environment. This can lead to innovative thinking and problem-solving, which can ultimately benefit the wider community. In addition to fostering social connections and academic collaboration, communal spaces can also help students to develop important life skills such as communication, teamwork and leadership. These skills are highly valued in the workforce and can be applied to many different career paths.

The results of the mind maps drawn by participants suggest that there are several design elements that are important in promoting a sense of belonging in college campuses.

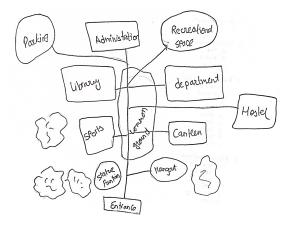


Figure 1: Mind map by First year student of Pulchowk Campus

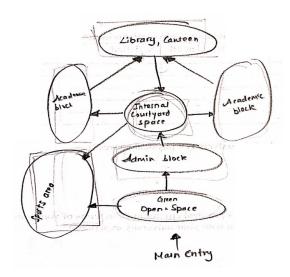


Figure 2: Mind map by Fifth year student of Pulchowk Campus

Firstly, the participants commonly drew a visual axis from the entrance to the administrative or department block. This visual axis can create a sense of direction and purpose for students, as it provides a clear path to their academic and administrative needs. It can also contribute to a sense of unity and community, as students can easily identify and connect with other members of the college community.

Secondly, participants commonly drew a green park or plaza located near the entrance. Green spaces can provide a relaxing and refreshing environment for students, contributing to their well-being and sense of belonging. It can also serve as a gathering place for students, promoting social interaction and community-building.

Thirdly, participants drew various college spaces designed with libraries, cafes, sports areas, community buildings, and playgrounds at visual proximity. These spaces can provide opportunities for students to engage in various activities, interact with peers, and connect with the college community. It can also provide a sense of belonging and ownership, as students can utilize and personalize these spaces to meet their individual needs and interests.

Similarly, the study conducted at Thapathali Campus revealed that it being smaller in site area compared to Pulchowk Campus, one of the main concerns expressed by students is the easy accessibility within departments. Another positive aspect for students' sense of belonging at Thapathali Campus is the availability of common ground, though small in size is for everyone from every faculty. Having a designated common area that is easily accessible to all students, regardless of their department or major, can create opportunities for social interaction and community-building. The students have expressed their dissatisfaction with the thermal performance of the classrooms and the boys' hostel being in a corner left-out space, making them feel unwelcome and excluded. Temperature and lighting are important factors that can affect students' ability to learn and concentrate. If the classroom's thermal performance is poor, with insufficient heating or cooling, it can cause discomfort and distraction for students, hindering their academic performance. Furthermore, inadequate lighting can cause eye strain and headaches, leading to discomfort and difficulty in focusing.

"There is no space to freshen up the mood, there's no place to sit during break time."

-5th year Respondent of Thapathali Campus added. This clearly shows Importance of space design for student's comfort. Break time is an essential part of the college experience, where students can take a break from their studies and socialize with their peers. However, the lack of comfortable and inviting spaces for students to relax and socialize during break time can have a negative impact on their mood and overall well-being, as indicated by the statement. Design elements such as comfortable seating, adequate lighting, and appealing decor can contribute to the creation of inviting and comfortable spaces that promote students' well-being and sense of belonging. By creating such spaces, colleges can foster a positive campus environment where students feel welcomed, valued, and connected to their peers and the institution. Moreover, the design of physical spaces can also impact students' academic performance, as it can affect their ability to concentrate and learn. For example, an environment that is too hot or too cold can cause discomfort and distract students from their studies, as discussed earlier. Therefore, the design of physical spaces must take into account the students' comfort and well-being, which in turn can contribute to a positive sense of belonging.

"If Thapathali Campus had a provision for a good library space, I swear I could stay there the whole day"

-3rd year Respondent from thapathali campus replied. As mentioned by the student from Thapathali Campus, the provision of a good library space can make a significant difference in a student's experience. A well-designed library space can provide students with a quiet and comfortable environment to study, read, and engage in academic activities. This can lead to better academic performance and a greater sense of engagement with the university community. In addition to a good library space, students have also highlighted the importance of pocket spaces to hang out and workspace for group work. These spaces can provide students with opportunities to interact with each other, engage in collaborative work, and build interpersonal relationships. They can also help students feel more comfortable and supported within the university community.

"On 2075, It was a day of aptitude test I entered the college and felt I've entered to an abandoned Place, a similar vibe from an abandoned Janakpur Cigarette Factory"

– 4th year Respondent from Thapathali Campus expressed his first experience while going to the campus area. The student's comment highlights the importance of the overall design and visual appeal of the university's exterior in creating a sense of belonging for students. When students enter the campus, they form an immediate impression of the university based on the exterior design, which can greatly influence their perception of the institution. A cohesive and well-planned architectural design, with a harmonious blend of different architectural styles, can create a welcoming and inclusive atmosphere for students. Clear and well-defined pathways, signage, and visual axis can also contribute to a sense of belonging by helping students navigate the campus with ease and feel a sense of familiarity with the space. In contrast, a lack of design clarity, unattractive and mismatched architectural elements,

and poorly maintained spaces can create a feeling of abandonment and detachment from the university community.

"Our department is near the canteen, so we can see the greenery. In the beginning, there used to be a lot, but now everything has been covered with concrete paving. If they had kept the green patch, it would have been better."

-3rd Year Respondent from Thapathali Engineering Campus. Exposure to nature increases social cohesion which consists of shared norms, positive relationships with others and feelings of belonging. In the case of the respondent from Thapathali Engineering Campus, they expressed a preference for green grass over concrete paving, highlighting the importance of natural spaces within the built environment of a university. This sentiment is supported by research which shows that access to green spaces can have a positive impact on mental health and well-being, leading to reduced stress levels and improved mood.

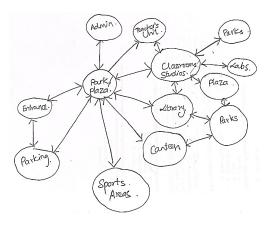


Figure 3: Mind map by Fifth year student of Thapathali Campus

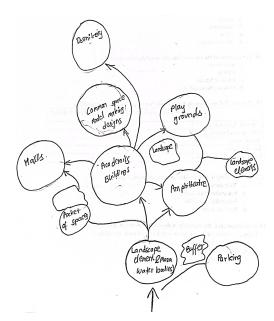


Figure 4: Mind map by fourth year student of Thapathali Campus

The results of the mind maps drawn by participants suggest that there are several design elements that can promote a sense of belonging on college campuses. Firstly, the participants commonly drew a green space near the entrance, with some even adding a water body. Green spaces can provide a natural and calming environment for students, promoting their well-being and sense of belonging. Adding a water body can enhance this effect, as it can create a tranguil and reflective space for students to enjoy. Secondly, participants commonly drew buffer spaces between buildings. Buffer spaces can provide a sense of separation and privacy, reducing noise and visual clutter between buildings. This can contribute to a more peaceful and focused environment for students, enhancing their academic performance and well-being. Thirdly, participants drew academic buildings surrounded by cafes, libraries, parking, and green environments. This combination of spaces can provide a sense of balance and variety, allowing students to engage in various activities, interact with peers, and connect with the college community.

The common spaces mentioned by the participants - Park Plaza, Parks, Canteen, Amphitheatre, Halls, Playground, gathering spaces, green spaces, Space for programs, dabali, Courtyard, Sports area, Internal courtyard space, and Library are physical areas in a school or college campus that are frequently used by students for various purposes. These spaces play a significant role in the social and emotional well-being of students. For example, park plaza, parks, and green spaces are outdoor areas where students can relax, play, and socialize with their peers. These spaces offer a break from the monotony of academic work and can help reduce stress levels. Similarly, the amphitheater, halls, and space for programs are areas where students can attend cultural events, guest lectures, and other extracurricular activities, which can broaden their horizons and help them develop new skills and interests.

Canteens and Dabali are areas where students can gather to have a meal, share their thoughts and experiences, and build relationships with their peers. These spaces can help create a sense of community and foster social connections, which are essential for student well-being and success. The Playground, Sports area, and Internal courtyard space are physical areas where students can engage in physical activity, such as sports These spaces provide students with an opportunity to stay active and healthy, and they can also help develop teamwork, leadership, and other valuable skills. Library and Courtyard are spaces where students can study, read, and reflect. These spaces offer a quiet and peaceful environment where students can focus on their academic work and expand their knowledge and understanding of the world. The common spaces mentioned by the participants provide opportunities for students to socialize, learn, relax, and stay physically active. They help create a sense of community and belonging, which can have a positive impact on student well-being and academic success.

7. Findings

The physical space of a college plays an important role in creating a conducive environment for students. The design and layout of a college, the availability of spaces for different activities such as study, socializing, and relaxation, all impact

a student's experience. The physical environment can either encourage or discourage interaction and engagement among students. Similarly, the social environment also plays a vital role in creating a sense of belonging. The social environment is shaped by the people around us, the interactions we have with them, and the relationships we build. A friendly and supportive social environment can make students feel valued and respected, while a negative social environment can lead to feelings of exclusion and isolation.

Regarding campus architecture and how it affects an individual's sense of belonging, the difference between the campuses in Thapathali and Pulchowk is a significant factor to take into account. Students at Pulchowk Campus have positive things to say about the design. They attribute their good experiences to the campus's openness and green surroundings. It is also notable that areas such as the projected dabali or courtyard are included on purpose, indicating a purposeful attempt to improve the entire atmosphere. On the other hand, Thapathali Campus presents a different picture, as students express dissatisfaction mostly about its compact dimensions and restricted spaces outside of the classrooms. Students in Thapathali show resiliency in spite of this restriction, making the most of the spaces that are available. The disparity in satisfaction levels highlights the importance of intentional design, a point that Pulchowk students emphasize. They value places that are not merely open but intentionally built.

When students feel connected to their surroundings, it can increase their sense of ownership and investment in the campus community. Visual connections between spaces can help students see how different areas of the campus are interconnected, creating a sense of unity and coherence. For example, if a student can see the library from their dorm room or a classroom, it may encourage them to use the library more often.

8. Conclusion

The participants defined numerous characteristics and indicators of belonging. The most frequently mentioned topics were interpersonal interaction, and spatial design. Quite apart from the fact that the study only covers data from two colleges, the participant numbers were relatively enough, and the themes highlighted are consistent with what others have discovered. This emphasizes the significance of knowing the barriers to and facilitators of belonging in pupils. Furthermore, the data showed that a significant sample of undergraduate students agreed that a sense of belonging at university was important to them. Their motivations were personal, societal, and academic. Positive emotions were frequently related with belonging. A number of factors influenced whether or not students felt they belonged. Yet, the critical roles of peers and spatial setting were emphasized.

The significance of facilities and visible layout planning in shaping students' perceptions and developing a sense of connectedness becomes clear. The good experiences at Pulchowk highlight the value of a well-planned design that extends beyond the mere establishment of open spaces. However, Thapathali's difficulties draw attention to the

necessity of strategic planning in order to make the most use of constrained locations.

At Pulchowk, different exhibitions and engaging activities cultivates a vibrant community where students are more likely to feel included and known to one another, fostering a strong sense of belonging. This sense of connection has the potential to positively impact academics, as students are motivated to actively participate in their studies, collaborate with peers, and seek academic support within this supportive community. In contrast, the lack of such dynamic activities at Thapathali may pose a challenge to student unity and connection. This deficiency in opportunities for shared experiences may, in turn, hinder the development of a robust sense of belonging. The community that supports students and fosters active involvement, collaboration, and a positive attitude toward learning is ultimately responsible for the relationship that exists between a student's academic success and their sense of belonging.

Ultimately, a sense of belonging is ultimately forged through the strategic utilization of spaces and meaningful social interactions. Therefore, it is essential to intentionally create environments that promote accessibility, inclusion, and social engagement.

9. Recommendation

The design of a campus should be a student-centric endeavor, placing students at the heart of decision-making and implementation. Such a mentioned approach will not only enhance the overall student experience but also contribute to the long-term success and reputation of the institution.

Inclusion of Student Input: To ensure that the campus design truly resonates with the needs and preferences of its primary users, the students, it is essential to actively seek their input. Forming focus groups, conducting surveys, and holding open forums can be instrumental in gathering valuable insights into what students desire in their campus environment.

Informed Decision-Making: The design process should involve students in key decision-making stages. Their consent and agreement should be sought regarding critical design elements, including building aesthetics, interior layouts, and the overall campus ambiance.

Acknowledgments

The authors express their heartfelt gratitude to all of the participants whose invaluable efforts were critical to the successful completion of this research project. Additionally, a sincere thanks is offered to everyone who gave this study their unwavering support.

References

[1] Carol Goodenow. The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools*, 30(1):79–90, 1993.

- [2] Patrick O'Keeffe. A sense of belonging: Improving student retention. *College student journal*, 47(4):605–613, 2013.
- [3] CABE. Sustainable design, climate change and the built environment. *CABE Breifing*, 2007.
- [4] Richard H Schein. Belonging through land/scape. *Environment and Planning A: Economy and Space*, 41(4):811–826, 2009.
- [5] Kathleen Mee and Sarah Wright. Geographies of belonging. *Environment and Planning A: Economy and Space*, 41(4):772–779, 2009.
- [6] Johan Andersson, Joanna Sadgrove, and Gill Valentine. Consuming campus: Geographies of encounter at a british university. Social & Cultural Geography, 13(5):501– 515, 2012.
- [7] Peter Hopkins. Towards critical geographies of the university campus: understanding the contested experiences of muslim students. *Transactions of the Institute of British Geographers*, 36(1):157–169, 2011.
- [8] Michelle Samura. Understanding campus spaces to improve student belonging. About Campus, 23(2):19–23, 2018.
- [9] C Carney Strange and James H Banning. *Designing* for learning: Creating campus environments for student success. John Wiley & Sons, 2015.
- [10] George D Kuh, Jillian Kinzie, John H Schuh, and Elizabeth J Whitt. Student Success in College, (Includes New Preface and Epilogue): Creating Conditions That Matter. John Wiley & Sons, 2010.
- [11] Alexander W Astin, Helen S Astin, and Jennifer A Lindholm. *Cultivating the spirit: How college can enhance students' inner lives.* John Wiley & Sons, 2010.
- [12] J. B. Wong, M. J. Erb, H. P. Roese, and N. J. Hirt. Classroom design and belonging: Perspectives from college students. *Journal of Environmental Psychology*, 2018.
- [13] Terrell L Strayhorn. *College students' sense of belonging:*A key to educational success for all students. Routledge, 2018.
- [14] Karyn L Lewis, Jane G Stout, Steven J Pollock, Noah D Finkelstein, and Tiffany A Ito. Fitting in or opting out: A review of key social-psychological factors influencing a sense of belonging for women in physics. *Physical Review Physics Education Research*, 12(2):020110, 2016.
- [15] Sylvia Hurtado and Deborah Faye Carter. Effects of college transition and perceptions of the campus racial climate on latino college students' sense of belonging. *Sociology of education*, pages 324–345, 1997.
- [16] John Weidman. Undergraduate socialization: A conceptual approach. *Higher education: Handbook of theory and research*, 5(2):289–322, 1989.
- [17] PJ Burke and JE Stets. *Identity Theory*. Oxford University Press, 2009.
- [18] A. Hurtado Spuler. Latino students' transition to a large research university: Social and environmental adjustments. *The Journal of Higher Education*, 1996.
- [19] M. T. Newman, M. L. Shell, and D. F. Wang. Minority adolescents' perceptions of school social climate and their academic outcomes: A multilevel analysis. *Journal of Youth and Adolescence*, 2015.
- [20] H. Band. Re-inventing learning spaces with case study examples. *The Research and Development Bulletin*, 2012.
- [21] T. M. Abu-Ghazzeh. Communicating behavioural research to campus design. factors affecting the perception and use of outdoor spaces at the university of jordan. *Environment & Behavior*, 1999.

- [22] M. Starke and J. C. M'Gonigle. Minding place: towards a (rational) political ecology of the sustainable university. *Environment and Planning D: Society and Space*, 2006.
- [23] Avner Caspi, Eran Chajut, Kelly Saporta, and Ruth

Beyth-Marom. The influence of personality on social participation in learning environments. *Learning and Individual Differences*, 16(2):129–144, 2006.