

The Role of Spatial Layout and Functionality in Enhancing Student Retention and Advocacy

Praveen Kumar Awasthi¹, Prof. (Dr.) Indu Shukla²

¹ Research Scholar, Department of Management, Rama University, Kanpur, Uttar Pradesh, India

praveenawasthi32@gmail.com

² Professors, Faculty of Commerce and Management, Rama University, Kanpur, Uttar Pradesh, India

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ABSTRACT

The physical environment of higher education institutions has emerged as a critical determinant of student experiences, satisfaction, and long-term engagement. Among the various dimensions of educational servicescapes, spatial layout and functionality play a significant role in shaping learning outcomes, social interactions, and institutional loyalty. Universities worldwide are increasingly investing in modern learning spaces, flexible classrooms, collaborative environments, and technology-enabled infrastructures to enhance student experiences and improve retention rates. Despite growing recognition of the influence of the built environment on educational outcomes, limited research has systematically examined the mechanisms through which spatial layout and functionality contribute to student retention and advocacy.

This study explores the role of spatial layout and functionality in fostering student satisfaction, engagement, persistence, and advocacy within higher education institutions. Drawing upon servicescape theory, environmental psychology, place attachment theory, and student engagement frameworks, the paper synthesizes contemporary literature published between 2017 and 2022. The analysis demonstrates that well-designed educational spaces positively influence academic engagement, collaborative learning, psychological comfort, and social integration. Flexible learning environments facilitate active learning pedagogies, while functional campus facilities strengthen students' perceptions of institutional support and service quality.

The findings suggest that spatial layout and functionality indirectly influence student retention through enhanced satisfaction, belongingness, and emotional attachment to the institution. Furthermore, students who perceive campus environments as supportive and conducive to learning are more likely to recommend their institution to prospective students, thereby acting as institutional advocates. The study contributes to the growing body of literature on educational servicescapes by proposing an integrated framework linking spatial attributes to retention and advocacy outcomes. Practical implications are provided for university administrators, architects, facility planners, and policymakers seeking to develop student-centered campus environments that support long-term educational success.

Keywords: Servicescape, Spatial Layout, Functionality, Student Retention, Student Advocacy, Higher Education, Student Satisfaction, Campus Design, Learning Environment, Institutional Loyalty

1. INTRODUCTION

The global higher education sector has undergone significant transformation over the last decade. Universities are no longer evaluated solely on academic excellence but increasingly on their ability to deliver holistic student experiences that foster engagement, satisfaction, and institutional loyalty. As competition among institutions

intensifies, student retention and advocacy have become strategic priorities for higher education administrators. Retaining students throughout their academic journey not only contributes to institutional sustainability but also enhances reputation, funding opportunities, and graduate success outcomes (González-Zamar & Abad-Segura, 2020).

Student retention refers to the ability of an institution to support learners in continuing and successfully completing their educational programs. Student advocacy, on the other hand, reflects students' willingness to positively promote their institution through recommendations, referrals, and favorable word-of-mouth communication (Wilkins et al., 2022). Both outcomes are increasingly recognized as indicators of institutional effectiveness and educational quality.

Contemporary higher education institutions operate within an experience-driven environment where students function as active participants in service co-creation. Consequently, the concept of servicescape has gained prominence in educational research. Originally introduced by Bitner (1992), servicescape refers to the physical surroundings in which services are delivered and experienced. Within educational settings, servicescape encompasses classrooms, laboratories, libraries, recreational facilities, outdoor spaces, technological infrastructure, and other environmental components that shape student experiences.

Among the various dimensions of educational servicescapes, spatial layout and functionality have emerged as particularly influential factors. Spatial layout refers to the arrangement and organization of physical elements within an environment, whereas functionality denotes the extent to which these elements effectively support intended activities and user needs (Wilson & Cotgrave, 2020). Together, these dimensions determine how students interact with educational spaces, access resources, engage with peers, and participate in learning activities.

Recent advancements in educational design emphasize flexibility, collaboration, inclusivity, and technology integration. Traditional lecture-based classroom models are increasingly being replaced by active learning environments designed to support teamwork, interaction, and experiential learning (Peng et al., 2022). Flexible furniture arrangements, adaptable learning spaces, collaborative zones, and digitally enhanced classrooms have become essential features of contemporary campus design.

Research indicates that educational environments significantly influence student behaviors, emotions, and academic performance. Students spend substantial portions of their daily lives within campus environments, making the quality of these spaces a critical determinant of educational outcomes. Positive environmental experiences contribute to increased engagement, improved concentration, enhanced well-being, and stronger institutional attachment (Costa & Steffgen, 2020). Conversely, poorly designed spaces may hinder learning, reduce satisfaction, and increase the likelihood of student withdrawal.

The COVID-19 pandemic further highlighted the importance of physical learning environments. As institutions transitioned between online, hybrid, and face-to-face learning modes, the need for adaptable and multifunctional spaces became increasingly evident. Universities were compelled to rethink campus design strategies to accommodate changing pedagogical requirements, health considerations, and student expectations (Leijon et al., 2022).

Although previous studies have explored relationships among campus facilities, student satisfaction, and educational outcomes, significant gaps remain in understanding how specific dimensions of spatial layout and functionality influence long-term student retention and advocacy. Existing literature often focuses on short-term learning outcomes while overlooking broader behavioral consequences such as institutional loyalty and recommendation intentions (Ji et al., 2023).

This paper addresses this gap by examining the role of spatial layout and functionality in enhancing student retention and advocacy. Through an extensive review of contemporary literature, the study seeks to develop a comprehensive understanding of how educational spaces contribute to student experiences and institutional success. The objectives of this study are:

1. To examine the concept of spatial layout and functionality within higher education servicescapes.

2. To analyze the relationship between campus design and student satisfaction.
3. To investigate the influence of spatial layout on student engagement and social integration.
4. To evaluate the role of functionality in promoting student retention.
5. To explore how educational environments contribute to student advocacy and institutional loyalty.
6. To propose an integrated conceptual framework linking spatial design attributes with retention and advocacy outcomes.

2. LITERATURE REVIEW

2.1 Servicescape Theory in Higher Education

The servicescape concept has become increasingly relevant in higher education as institutions recognize the importance of environmental factors in shaping student experiences. Servicescape theory suggests that physical surroundings influence cognitive, emotional, and behavioral responses among service users. Within educational contexts, students continuously interact with campus environments, making the physical setting an integral component of the educational experience.

Educational servicescapes differ from commercial servicescapes because they simultaneously support academic, social, recreational, and developmental functions. Universities serve as learning communities where environmental conditions facilitate knowledge creation, collaboration, and personal growth. Consequently, campus design influences not only academic outcomes but also students' psychological and social experiences.

Recent studies emphasize that educational servicescapes contribute significantly to student perceptions of institutional quality. Modern facilities, aesthetically appealing environments, and functional learning spaces create positive impressions that enhance satisfaction and institutional image (Abisuga et al., 2019). Students increasingly evaluate institutions based on the quality of campus environments, making servicescape management a strategic priority.

Research further demonstrates that servicescape dimensions influence emotional responses such as comfort, belongingness, motivation, and confidence. These emotional reactions subsequently affect behavioral outcomes including engagement, persistence, and advocacy. Thus, understanding the role of spatial layout and functionality within educational servicescapes is essential for improving student experiences and institutional performance.

2.2 Spatial Layout and Learning Effectiveness

Spatial layout refers to the physical arrangement of furniture, equipment, pathways, and architectural elements within educational environments. Effective spatial layouts facilitate movement, accessibility, communication, and interaction while minimizing distractions and physical barriers.

Traditional classroom designs were primarily structured around instructor-centered teaching methods. Fixed seating arrangements and rigid room configurations often limited student participation and collaboration. However, contemporary pedagogical approaches emphasize active learning, requiring more flexible and interactive environments.

Flexible learning spaces enable educators to implement diverse instructional strategies, including group discussions, project-based learning, collaborative problem-solving, and experiential activities. Research indicates that students in flexible classrooms demonstrate higher levels of engagement, participation, and academic achievement compared to those in traditional learning environments (Peng et al., 2022). The arrangement of learning spaces also influences cognitive processing. Open, accessible layouts facilitate communication and knowledge sharing, while overcrowded or poorly organized environments may create stress and hinder concentration. Environmental psychology research suggests that individuals perform more effectively when physical environments align with task requirements and personal preferences (Costa & Steffgen, 2020).

Moreover, spatial layout affects social interactions among students. Informal gathering spaces, collaborative workstations, and shared learning areas encourage peer engagement and community formation. Such interactions contribute to social integration, a critical predictor of student persistence and retention.

Universities increasingly incorporate collaborative learning zones, innovation hubs, maker spaces, and interdisciplinary work environments to support student engagement. These spaces encourage creativity, teamwork, and problem-solving while fostering a sense of belonging within the campus community.

2.3 Functionality and Student Experience

Functionality represents the extent to which physical environments effectively support user needs and intended activities. In higher education settings, functionality encompasses accessibility, technological support, comfort, adaptability, safety, and operational efficiency.

Students expect campus facilities to provide reliable technological infrastructure, adequate seating, accessible resources, and supportive learning conditions. Functional environments reduce barriers to participation and enhance students' ability to focus on academic activities.

Studies consistently demonstrate that functional facilities positively influence student satisfaction. Access to modern laboratories, well-equipped libraries, collaborative learning spaces, and technology-enabled classrooms contributes to positive educational experiences. Conversely, inadequate facilities often generate frustration and dissatisfaction.

Functionality also influences perceptions of institutional support. When students perceive that universities invest in high-quality facilities and responsive environments, they develop stronger trust and confidence in the institution. These perceptions contribute to increased satisfaction and commitment.

Accessibility represents a particularly important dimension of functionality. Inclusive campus design ensures that facilities accommodate diverse student populations, including individuals with physical disabilities and varying learning needs. Inclusive environments promote equity, participation, and social integration, strengthening overall student experiences.

Furthermore, functional spaces enhance operational efficiency by supporting multiple learning modalities and adapting to evolving educational requirements. As higher education increasingly embraces blended and hybrid learning approaches, multifunctional spaces have become essential components of campus infrastructure.

2.4 Environmental Psychology and Student Behavior

Environmental psychology provides a theoretical foundation for understanding how physical environments influence human behavior. The field examines interactions between individuals and their surroundings, emphasizing the psychological and behavioral consequences of environmental conditions.

Within educational settings, environmental psychology suggests that spatial characteristics influence emotions, perceptions, motivation, and performance. Students continuously interpret environmental cues that shape their experiences and behaviors.

Key environmental factors include comfort, privacy, territoriality, crowding, accessibility, and aesthetics. Positive environmental conditions promote psychological well-being and engagement, whereas negative conditions may generate stress and withdrawal behaviors. Research demonstrates that students are more likely to participate actively in learning activities when they perceive environments as comfortable, supportive, and conducive to interaction. Such perceptions contribute to stronger emotional connections with educational institutions and increased persistence.

2.5 Spatial Layout, Social Integration, and Student Belongingness

The physical arrangement of educational spaces plays a critical role in facilitating social interactions and fostering a sense of belonging among students. Contemporary higher education institutions increasingly recognize that learning occurs not only within formal classrooms but also through informal interactions in communal spaces,

study lounges, libraries, cafeterias, and outdoor learning environments (Sandström, 2020). Consequently, spatial layouts that encourage collaboration and social engagement contribute significantly to students' overall educational experiences.

According to Tinto's Student Integration Model, students who successfully integrate into the social and academic systems of an institution are more likely to persist and complete their studies (Tinto, 2017). Spatial design directly supports this integration process by creating opportunities for interaction, communication, and relationship building among students and faculty members (Ji et al., 2023). Open learning environments, collaborative workspaces, and multifunctional student centers facilitate meaningful social exchanges that strengthen students' connections to their institution (Leijon et al., 2022).

Research indicates that well-designed communal spaces promote peer learning, knowledge sharing, and collective problem-solving (Wilson & Cotgrave, 2020). These interactions enhance academic performance while simultaneously fostering social support networks that help students navigate academic challenges (Costa & Steffgen, 2020). Students who establish strong social connections often report greater satisfaction, increased engagement, and stronger institutional commitment (Wilkins et al., 2022).

Furthermore, the availability of informal gathering spaces contributes to the development of campus communities by encouraging spontaneous interactions and extracurricular participation (Abisuga et al., 2019). Such interactions strengthen students' emotional attachment to the institution and create a sense of ownership and belonging. Consequently, spatial layouts that support social engagement contribute significantly to long-term student retention and advocacy behaviors.

2.6 Place Attachment Theory and Educational Environments

Place Attachment Theory provides a useful framework for understanding how students develop emotional connections to educational environments. Place attachment refers to the emotional bond that individuals establish with specific physical locations through repeated experiences and meaningful interactions (López-Chao & Pena, 2021). Within higher education settings, students spend considerable amounts of time interacting with campus facilities, resulting in the formation of place-based identities and attachments.

Educational environments influence both functional and emotional dimensions of place attachment. Functional attachment develops when students perceive campus facilities as effective in supporting their academic and personal needs (Peng et al., 2022). Emotional attachment emerges through positive experiences, social relationships, and personal achievements associated with the institution (Ghorbanzadeh, 2019).

Research suggests that students who experience strong place attachment demonstrate greater academic engagement, satisfaction, and institutional loyalty (Vacca & Vandi, 2023). Such students are more likely to participate in campus activities, maintain positive relationships with peers and faculty, and persist through academic challenges (DeFrain & Hong, 2020). Place attachment therefore serves as a critical mediator between environmental quality and student retention outcomes.

Physical design characteristics contribute significantly to attachment formation. Comfortable learning environments, aesthetically pleasing architecture, accessible facilities, and collaborative spaces enhance students' perceptions of environmental quality and increase their emotional investment in the institution (Sanz & Sánchez, 2023).

As attachment strengthens, students become more likely to recommend the institution to others, thereby contributing to positive institutional advocacy.

2.7 Student Retention in Higher Education

Student retention remains one of the most important indicators of institutional effectiveness in higher education. Retention reflects an institution's ability to support students throughout their academic journey and ensure successful progression toward graduation (González-Zamar & Abad-Segura, 2020). High retention rates are

associated with improved financial stability, stronger institutional reputation, and enhanced student success outcomes (Wilkins et al., 2022).

Several theoretical models have been developed to explain student persistence and retention. Tinto's Integration Theory emphasizes the importance of academic and social integration in influencing students' decisions to remain enrolled (Tinto, 2017). Bean's Student Attrition Model highlights the role of satisfaction, institutional fit, and environmental factors in shaping retention outcomes (Bean & Eaton, 2018).

Recent studies suggest that physical campus environments significantly influence retention through their impact on satisfaction, engagement, and belongingness (Leijon et al., 2022). Students who perceive campus facilities as supportive and conducive to learning report stronger commitment to their institution and lower intentions to withdraw (Peng et al., 2022).

Spatial layout contributes to retention by enhancing accessibility, reducing environmental stress, and facilitating social interaction (Wilson & Cotgrave, 2020). Functional environments further support retention by providing resources and infrastructure necessary for academic success (Costa & Steffgen, 2020). Together, these factors create positive educational experiences that encourage students to continue their studies.

Moreover, institutions that invest in student-centered campus design demonstrate a commitment to educational quality and student well-being (Abisuga et al., 2019). Such investments strengthen perceptions of institutional support and increase students' confidence in their educational experience, ultimately improving retention outcomes.

2.8 Student Advocacy and Institutional Loyalty

Student advocacy refers to the willingness of students to promote and recommend their institution to prospective students, family members, and professional networks (Wilkins et al., 2022). Advocacy represents a valuable outcome for higher education institutions because positive word-of-mouth communication significantly influences enrollment decisions and institutional reputation.

Student advocacy is closely linked to satisfaction, trust, engagement, and loyalty. Students who experience positive educational environments are more likely to develop favorable attitudes toward their institution and actively share their experiences with others (Ghorbanzadeh, 2019). Consequently, advocacy serves as an important behavioral indicator of institutional success.

The servicescape literature suggests that environmental quality influences advocacy through both cognitive and emotional pathways (Abisuga et al., 2019). Students evaluate campus environments based on functionality, aesthetics, accessibility, and comfort. Positive evaluations contribute to satisfaction and strengthen emotional attachment, which subsequently increases advocacy intentions (López-Chao & Pena, 2021).

Modern campus facilities also contribute to institutional image formation. Universities with technologically advanced classrooms, collaborative learning spaces, sustainable infrastructure, and attractive campus environments are often perceived as innovative and student-centered institutions (Peng et al., 2022).

These perceptions positively influence students' willingness to recommend the institution.

Furthermore, students who feel supported by their physical environment often develop a sense of pride and affiliation with their institution (Vacca & Vandi, 2023).

Such feelings strengthen loyalty and encourage long-term advocacy behaviors, even after graduation.

2.9 Conceptual Framework

Based on the reviewed literature, this study proposes a conceptual framework linking spatial layout and functionality to student retention and advocacy through several mediating mechanisms.

The framework suggests that:

Spatial Layout

- Student Engagement
- Social Integration
- Student Satisfaction
- Student Retention

Functionality

- Perceived Service Quality
- Institutional Support
- Student Satisfaction
- Student Retention

Simultaneously,

Student Satisfaction

- Place Attachment
- Institutional Loyalty
- Student Advocacy

This framework integrates principles from Servicescape Theory (Bitner, 1992), Environmental Psychology (Costa & Steffgen, 2020), Place Attachment Theory (López-Chao & Pena, 2021), and Student Integration Theory (Tinto, 2017).

The proposed model assumes that spatial layout and functionality serve as antecedent variables influencing both cognitive and emotional responses. These responses subsequently affect behavioral outcomes such as retention and advocacy.

3. HYPOTHESES DEVELOPMENT

Based on the literature review and theoretical foundations, the following hypotheses are proposed:

H1

Spatial layout positively influences student engagement in higher education institutions (Peng et al., 2022).

H2

Spatial layout positively influences social integration among students (Wilson & Cotgrave, 2020).

H3

Functionality positively influences perceived service quality in higher education servicescapes (Abisuga et al., 2019).

H4

Functionality positively influences student satisfaction (Costa & Steffgen, 2020).

H5

Student engagement positively influences student satisfaction (Ji et al., 2023).

H6

Social integration positively influences place attachment (López-Chao & Pena, 2021).

H7

Student satisfaction positively influences student retention (Leijon et al., 2022).

H8

Place attachment positively influences institutional loyalty (DeFrain & Hong, 2020).

H9

Institutional loyalty positively influences student advocacy (Wilkins et al., 2022).

H10

Student retention positively influences advocacy intentions toward the institution (González-Zamar & Abad-Segura, 2020).

4. RESEARCH METHODOLOGY

4.1 Research Design

This study adopts a Systematic Literature Review (SLR) approach guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) framework (Page et al., 2021). The objective is to synthesize empirical evidence regarding the influence of spatial layout and functionality on student retention and advocacy within higher education institutions.

The systematic review methodology was selected because it provides a transparent, rigorous, and replicable process for identifying, evaluating, and synthesizing relevant literature (Snyder, 2019). Unlike traditional narrative reviews, systematic reviews reduce selection bias and enhance the reliability of findings.

4.2 Data Sources

Relevant studies were identified from major academic databases including:

- Scopus
- Web of Science
- ScienceDirect
- Emerald Insight
- SpringerLink
- Taylor & Francis Online

These databases were selected due to their extensive coverage of higher education, environmental psychology, architecture, facility management, and services marketing research.

5. RESULTS AND THEMATIC ANALYSIS

From the literature, five dominant themes emerge.

Theme 1: Flexible Learning Spaces Enhance Student Engagement

Flexible learning environments improve collaboration, participation, and active learning experiences. Students report greater interaction and involvement when classrooms support multiple pedagogical approaches (Wilkins et al., 2022).

Theme 2: Functional Facilities Improve Student Satisfaction

Access to technologically advanced classrooms, libraries, laboratories, and collaborative workspaces enhances perceptions of educational quality and institutional support (Wilkins et al., 2022).

Theme 3: Campus Design Strengthens Institutional Attachment

Students develop stronger emotional bonds with institutions that provide aesthetically pleasing and functional environments. These environments facilitate both academic achievement and social interaction.

Theme 4: Spatial Layout Facilitates Social Integration

The availability of communal and collaborative spaces supports relationship development among students and faculty members. Such interactions contribute to stronger campus belongingness and persistence.

Theme 5: Positive Servicescape Encourages Advocacy

Students who experience high-quality campus environments are more likely to recommend their institution to prospective students and external stakeholders. Positive servicescape perceptions contribute to favorable word-of-mouth communication.

6. DISCUSSION

The findings indicate that spatial layout and functionality represent strategic dimensions of educational servicescapes. Consistent with Servicescape Theory, physical environments shape cognitive, emotional, and behavioural responses among students. Well-designed environments create conditions that support learning, collaboration, and social integration.

The review demonstrates that flexible and functional educational spaces contribute indirectly to student retention through satisfaction, engagement, and institutional attachment. These findings align with contemporary student-centered educational philosophies emphasizing experiential learning and collaborative knowledge creation.

Moreover, the study highlights the transition from traditional facility management toward strategic campus experience management. Universities are increasingly competing not only on academic quality but also on the quality of the student experience delivered through the built environment.

7. THEORETICAL IMPLICATIONS

The study contributes to higher education literature by:

1. Extending Servicescape Theory to higher education.
2. Integrating Place Attachment Theory with student retention models.
3. Demonstrating the mediating role of satisfaction and engagement.
4. Linking environmental design directly to advocacy behaviour.
5. Developing an integrated framework connecting spatial layout, functionality, retention, and advocacy.

8. Managerial Implications

University administrators should:

- Invest in flexible learning environments.
- Enhance collaborative and informal learning spaces.
- Improve accessibility and inclusivity.
- Upgrade technological infrastructure.
- Design student-centred campuses.

Architects and planners should prioritize adaptability, comfort, sustainability, and social interaction opportunities when designing future educational facilities.

9. CONCLUSION

This review demonstrates that spatial layout and functionality significantly influence student experiences within higher education institutions. Educational environments characterized by flexibility, accessibility, technological support, and collaborative design contribute positively to student engagement, satisfaction, retention, and advocacy. As higher education becomes increasingly competitive, universities must recognize that physical environments are strategic assets capable of shaping institutional success and long-term sustainability. Through

intentional campus design and effective facility management, institutions can foster stronger emotional connections with students, improve retention rates, and generate positive advocacy behaviours that strengthen institutional reputation and competitiveness.

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