Assessment of the Effects of Landscape Design on the Social Interaction and Mental Well-Being of the Students in Caleb University

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Abstract
Landscape design was increasingly recognized as an important factor influencing students' social interaction and mental well-being within university environments. However, there had been limited research on how campus landscape design affected students in private universities in Nigeria, particularly at Caleb University. This research assessed the effects of landscape design at Caleb University, Imota, Lagos State on students' social interaction and mental well-being by analyzing existing outdoor features, patterns of space usage, and students' perceptions of their impact on relaxation and psychological health.
A mixed-methods approach was adopted, involving questionnaire surveys, behavioural observations, and spatial analysis of selected campus outdoor spaces. The collected data were analysed using descriptive and inferential statistical methods. The study revealed that well-designed landscape spaces significantly encouraged social engagement and supported students' psychological health.
The findings provided practical recommendations for improving campus landscape design in Caleb University and similar institutional environments.

Keywords: Landscape design, Mental well-being, Social interaction, Students in Caleb University

Introduction

Students are very vital to our society because they are the future of our society, and the focus course of development. They are members of a society who are in the process of gaining knowledge, skills, and values that will enable them to contribute positively to their communities and professions. Through good education, students gain critical thinking to solve problems, enhanced creativity, base foundation for invention of new technologies and future discoveries that are necessary for innovation and economy progress. Students are also important because they sustain the continuity of knowledge and culture. Students actively participate in research, discussions, and collaborations that help discover new ideas and solutions to real-life problems. The study found that human capital development such as education and skills have a significant long-run impact on economic growth in Nigeria. Students represent the future skilled workforce that increases productivity and GDP (Keji, S. A. 2021). Research shows that a 1% increase in the number of secondary school students can increase GDP growth by about 0.23%, demonstrating the economic importance of education.

Education is a major driver of sustainable economic growth in both developing and developed countries. Higher educational attainment among students leads to better labour skills and innovation, which strengthens national economic performance. Students in higher education create a more skilled workforce, which leads to economic growth. When the number of educated individuals increases, the total productive capacity of an economy rises (Taylor & Francis).

Landscape design is important in shaping the physical and psychological environment of a university campus and every other social, public and private gathering. Studies have shown that well designed landscape spaces that have green areas, and outdoor recreational spaces contribute significantly to the mental well-being of students by reducing stress and promoting psychological

restoration (Zhang, Jin & Liang, 2024) [9]. The presence of natural elements such as trees, flowers, shrubs and water features encourage students to spend more time outdoors, thereby supporting social interaction and relaxation (Urban Forestry & Urban Greening, 2025), students are said to learn and assimilate faster when they communicate with each other. A review of research on campus landscapes studies showed that majority of studies report a positive relationship between university landscapes and students' mental health and well-being, this shows the need for further studies assessing the design and effectiveness of these environments (Urban Forestry & Urban Greening, 2024).

Problem Statement

University students face high levels of academic pressure, social adaptation challenges, and other environmental factors that can affect their mental well-being and social relationships negatively. Studies have shown that the physical environment of a university campus play a significant role in shaping a student's psychological health, behavior, and interaction patterns (Ulrich, 1984; Kaplan & Kaplan, 1989). Landscape design elements such as green spaces, trees, and outdoor seating areas have been identified as important components that can reduce stress, promote relaxation, and enhance student's mental restoration (Marcus & Sachs, 2013). Research also indicates that well-designed campus landscapes provide opportunities for informal gatherings, recreational activities, and improve social connections among students, thereby strengthening social interaction and community life within universities (Gehl, 2011).

Despite the need of a good landscape design in enhancing mental health and social interaction of students, many university campuses, particularly in developing countries, majorly focus on only the building infrastructures while giving less attention to the design and functionality of outdoor landscape spaces/areas. Due to this some campus environments may not fully support students' psychological and social needs. In Caleb University, the landscape design spaces were considered but not properly planned and developed. This study will assess the effect of landscape design on the social interaction and mental well-being of students in Caleb University in order to provide creative ideas that can guide the campus in future planning and landscape design strategies.

Research Gap

Studies have established that natural environments and green landscapes play a significant role in improving psychological health and reducing stress among individuals (Hartig *et al*., 2014). Research on campus environments also shows that the presence of green spaces, and outdoor recreational areas can contribute positively to students' mental restoration and emotional well-being (Kaplan & Kaplan, 1989) [14]. University landscape spaces have been identified as important settings for informal interaction, relaxation, and social engagement among students, thereby supporting social cohesion within academic environments (Gehl, 2011).

Many existing studies have focused primarily on the general health benefits of green environments rather than specifically examining how particular landscape design elements influence student's social interaction and mental well-being within university campuses (Hartig *et al*., 2014). Most of the available research on landscape and mental well-being has been conducted in developed countries in Europe, North America, and parts of Asia, leaving limited research sources evidence within African universities (Mensah, Andres, Perera, & Roji, 2016) [8]. The relationship between campus landscape design and students' psychological and social experiences remains under-explored in many developing countries (Mensah *et al*., 2016) [8]. Local studies on environmental quality in Lagos-area developments, such as Lekki Peninsula estates, further highlight how landscape elements influence resident satisfaction and interaction, yet campus-specific applications in Nigeria remain scarce (Adeyemi *et al*., 2024b) [3].

Therefore, there is need to assess how landscape design features in Caleb University influence students' social interaction and mental well-being in order to provide a valuable source that can be used in the planning of campus landscape and design strategies.

Study Aim, Scope, And Justification

Aim: This study assesses the effects of landscape design on students' social interaction and mental well-being at Caleb University, Imota, Lagos State.

Objectives: The research pursues the following:

Identify existing landscape design features within Caleb University.

Examine students' utilization of these spaces for social interaction.

Evaluate the influence of campus landscape design on students' mental well-being.

Assess students' perceptions of landscape spaces' effectiveness in supporting social interaction and mental well-being.

Guiding Research Questions: These objectives address:

What landscape design features currently exist within Caleb University?

How do students utilize campus landscape spaces for social interaction?

How does landscape design influence students' mental well-being at Caleb University?

What are students' perceptions of landscape spaces' effectiveness in promoting social interaction and mental well-being?

Scope: The study focuses on Caleb University's outdoor environment, analyzing green spaces, walkways, seating areas, gardens, and related features. It investigates their use for social interaction, relaxation, and informal activities among undergraduate students, while evaluating perceptions of mental well-being contributions—excluding indoor spaces or non-student populations.

Justification: University students face academic pressures, social adaptation challenges, and environmental stressors that impair mental health and performance (Holtan *et al*., 2017) [12]. Campus landscapes offer restorative potential by reducing stress via natural elements and fostering interaction through functional design (Bratman *et al*., 2019; Peters *et al*., 2017). Yet Nigerian private universities like Caleb prioritize buildings over optimized landscapes, creating a local research gap. This study provides evidence-based strategies to enhance campus design, supporting student well-being, retention, and economic contributions from higher education.

Literature Review

Landscape Design

Landscape design plays an important role in forming both the physical and psychological experiences within university environments. Well thought out and designed outdoor spaces influence how students interact socially and how they perceive their surroundings mentally and emotionally. In higher institutions campus design, landscape elements are not seen as met aesthetic additions but as necessary components that promote students well- being and engagement.

Studies have shown that the quality of outdoor environments can have a strong effect on the behavior, mood and social patterns among user (Olagoke & Emmanuel, 2024; Canlı, 2024). This chapter therefore reviews key concepts, relevant theories, and empirical studies related to landscape design, social interaction, and students' mental well-being within campus environments, with the aim of establishing a foundation for this research.

Concept of Landscape Design in Campus Environments

The arrangement of outdoor spaces in order to achieve functionality, aesthetics and environmental goals is referred to as landscape design (Hough, 2004) [7]. Within campus settings it is referred to as elements such as green areas, sit-outs, walkways, shading devices, water features, and vegetation, all of which contribute to the usability and attractiveness of the campus environment. All of which contribute to the usability and attractiveness of the campus environment. These elements collectively enhance the overall aesthetic appeal of the campus, improve the comfort and functionality of outdoor areas, and create opportunities for interaction and relaxation among students.

Landscape in campus settings can be broadly categorized into active and passive spaces. Active landscapes are areas that encourage movement, sports, and group activities, while passive landscapes support relaxation, reflection, and informal interaction. The usefulness of these spaces depends largely on their design quality, accessibility, and maintenance. Research shows that properly designed campus environments significantly improve students' satisfaction and engagement with outdoor spaces (Francis *et al*., 2012; Huang *et al*., 2021) [10]. More recent studies have emphasized that landscape quality, including vegetation density, shading, and seating provision, plays a crucial role in determining how frequently students utilize these spaces (Zhang *et al*., 2023) [9]. When landscape areas are well designed and efficiently maintained, they enhance students' overall campus experience and encourage both academic and social activities to extend beyond indoor environments.

Landscape Design and Social Interaction

Landscape design has a significant influence on how students interact within a campus environment. When outdoor spaces are accessible, comfortable, and visually appealing, students are more likely to gather, communicate, and engage in both formal and informal activities. The spatial arrangement and quality of landscape elements determine the extent to which these spaces are used for interaction.

Well-designed features such as seating arrangements, shaded areas, walkways, and courtyards create environments that support social engagement. These elements encourage students to spend more time outdoors, thereby increasing opportunities for spontaneous conversations, group discussions, and collaborative learning. Studies have shown that well designed outdoor environments enhance students' social interaction by ensuring conducive settings for communication and shared experiences. Chiesura (2004) [5] highlights that green spaces play a vital role in promoting social interaction and community cohesion, while Francis *et al*. (2012) [10] emphasize that well-designed public spaces increase levels of social engagement and user satisfaction.

Recent research further promotes these findings by demonstrating that the quality and accessibility of landscape spaces are vital in shaping social behaviour. Huang *et al*. (2019) [13] found that students are more likely to interact in environments that they feel safe, comfortable and are well-maintained. Similarly, adaptable furniture in learning spaces at Nigerian universities like UNILAG has been shown to enhance collaborative interactions by supporting flexible group configurations, underscoring the need for versatile outdoor elements in campus landscapes (Adeyemi *et al*., 2025) [2].

Zhang *et al*. (2024) [9] also reported that attractive and user-friendly green spaces increase students' willingness to take part in communal activities, thereby strengthening social bonds and a sense of belonging. This suggests that landscape design not only provides physical spaces for interaction but actively influences how and when social engagement occurs within university settings.

Landscape Design and Mental Well-Being

Mental well-being is seen as an individual's emotional, psychological, and social state, and it plays a vital role in students' academic performance and overall quality of life. Exposure to natural and well-designed environments has been widely linked to improved mental health outcomes, particularly within educational settings where students often experience stress and cognitive fatigue. Landscape elements contribute to mental well-being by creating environments that support relaxation and psychological restoration.

Natural features such as greenery, water elements, and shaded areas have been shown to reduce stress, improve mood, and enhance cognitive functioning. Kaplan and Kaplan (1989) [14], through the Attention Restoration Theory, explain that natural environments help restore attention and reduce mental fatigue by providing a sense of escape and mental relief. Similarly, access to green and quiet outdoor spaces allows students to relax and recover from academic stress. Recent studies have further emphasized the importance of landscape design in promoting mental well-being.

Berto (2014) [4] discovered that exposure to natural environments improves concentration and reduces stress-related symptoms. Zhang *et al*. (2024) [9] indicates that interaction with campus green spaces to a large extent enhances students' emotional stability and reduces anxiety levels. Canlı (2024) also reports that well-designed outdoor environments contribute to improved psychological comfort and overall well-being among students. At Caleb University, research indicates that accommodation quality directly influences students' job performance and psychological state, highlighting how campus environmental factors—including landscape integration—support mental restoration amid academic demands (Ademakinwa *et al*., 2024) [1].

These findings highlight that the quality, accessibility, and design of landscape elements are essential in creating

restorative environments that support students' mental health within university campuses.

Theoretical Framework

Several theories guide this research. Biophilia theory (Wilson, 1984) [16] suggests that humans have a congenital tendency to connect with nature, which can improve psychological well-being. In campus settings, the incorporation of green spaces, walking paths, and natural elements may encourage social interaction and reduce stress among students. Similarly, Attention Restoration Theory (ART) (Kaplan & Kaplan, 1989) [14] posits that exposure to restorative environments, such as landscaped gardens or outdoor communal areas, can restore cognitive resources and improve focus, thus positively affecting students' mental health and academic performance.

From an environmental psychology point of view, social interaction theories highlight the role of physical space in facial or constraining human interaction for example, Oldenburg's (1999) [15] concept of "third places" emphasizes the importance of communal spaces outside of formal institutional settings in promoting casual social engagement and fostering a sense of community. Implementing this to university campuses, thoughtfully designed outdoor spaces can serve as "third places" where students form social bonds, collaborate, and participate in recreational activities.

Furthermore, Environmental Stress Theory (Evans & Cohen, 1987) [6] suggests that poorly designed or overcrowded spaces can boost stress levels and reduce overall well-being. By contrast, landscapes designed with substantial spatial organization, seating arrangements, and aesthetic appeal can reduce environmental stressors and enhance the psychological comfort of students. Integrating these theories, this study suggests that effective landscape design not only improves the physical appearance of campus environments but also contributes significantly to students' social interactions and mental well-being. Therefore, understanding the theoretical underpinnings is essential for designing outdoor spaces that are both functional and psychologically restorative.

Empirical Studies

Numerous empirical studies have revealed the important role of landscape design in promoting social interaction and enhancing mental well-being in educational environments. Chiesura (2004) [5] highlighted that access to green spaces not only encourages social interaction but also improves psychological well-being by ensuring restorative environments for relaxation and reflection. Similarly, Francis, Giles-Corti, Wood, and Knuiman (2012) revealed that thoughtfully designed outdoor environments in university settings foster increased social engagement, supporting collaboration and informal learning opportunities. Huang, Wang, and Ma (2019) [13] highlighted that landscapes that are comfortable and accessible promote students to use outdoor spaces, thereby enhancing opportunities for interaction and community building. Berto (2014) [4] further confirmed that exposure to natural environments contributes to stress reduction and cognitive restoration, underlining the link between landscape design and mental health.

Collectively, these studies indicate that well-designed outdoor spaces can improve students' social experiences and psychological well-being. However, most of these studies have been conducted in Western contexts, leaving a notable gap in research within Nigerian universities. Understanding the local context is essential for implementing landscape designs that effectively meet students' social and psychological needs.

Relationship Between Landscape Design and Students (Expanded)

University students operate within environments characterized by high cognitive demand, social adjustment pressures, and psychological strain, all of which significantly influence their academic performance and overall well-being. Academic workloads, deadlines, and competitive learning environments often lead to elevated stress levels and cognitive fatigue, while the transition into university life introduces social challenges such as identity formation, peer interaction, and adaptation to new social networks (Holtan *et al*., 2017) [12]. These conditions make the quality of the physical campus environment particularly outdoor landscape design a critical factor in shaping students' daily experiences. Well-designed landscape environments serve as multifunctional support systems that respond to these challenges in several ways:

1. Provision of Restorative Environments

Natural and landscaped settings offer opportunities for psychological restoration, helping students recover from mental fatigue associated with prolonged academic engagement. According to the Attention Restoration Theory, exposure to natural elements such as vegetation, water features, and open green spaces allows the brain to shift from directed attention to effortless attention, thereby restoring cognitive capacity (Kaplan & Kaplan, 1989) [14]. Empirical studies further confirm that students who regularly engage with green outdoor environments experience reduced stress levels, improved concentration, and enhanced emotional stability (Berto, 2014) [4].

2. Facilitation of Social Interaction and Community Building

Campus landscapes function as informal social infrastructures, often described as "third places," where students engage in spontaneous interactions outside formal academic settings (Oldenburg, 1999) [15]. Features such as:

Seating clusters
Courtyards
Walkways
Shaded gathering areas

encourage face-to-face interaction, group discussions, and collaborative learning. These interactions are essential for developing social capital, peer support networks, and a sense of belonging, all of which are critical for student retention and satisfaction (Francis *et al*., 2012) [10].

3. Enhancement of Emotional and Psychological Well-Being

Landscape design contributes significantly to students' emotional regulation and mental health. Environments that incorporate greenery, biodiversity, and aesthetic appeal have been shown to:

Reduce anxiety and depressive symptoms
Improve mood and overall life satisfaction
Promote relaxation and mindfulness

This aligns with the Biophilia Theory, which suggests that

humans possess an inherent affinity for natural environments, leading to improved psychological outcomes when such environments are accessible (Wilson, 1984) [16].

4. Support for Informal Learning and Academic Performance

Beyond recreation, landscape spaces serve as extensions of the learning environment. Outdoor settings provide flexible spaces for: Informal study, Group assignments, Reflective thinking e.t.c

Gulwadi *et al*. (2019) [11] emphasizes that students who frequently use campus outdoor environments demonstrate higher levels of engagement, creativity, and academic satisfaction. The integration of landscape design into learning environments thus enhances both formal and informal educational processes.

5. Influence on Behavioral Patterns and Space Utilization

The design quality of landscape elements directly determines how, when, and why students use outdoor spaces. Factors such as: Accessibility, Safety, Comfort (shade, seating, microclimate), Aesthetic quality which influence students' willingness to occupy and interact within these environments (Huang *et al*., 2019) [13]. Poorly designed or neglected spaces, on the other hand, discourage use and may contribute to social isolation and reduced campus engagement.

Overall, the relationship between landscape design and students is both direct and multidimensional. Thus, well-designed campus landscapes are not merely aesthetic enhancements but critical infrastructural components that shape students' psychological health, social behavior, and academic success. This underscores the need for intentional, user-centered landscape planning in university settings, particularly within developing contexts where such considerations are often under-prioritized.

Methodology

Research Design

This study adopted a mixed-methods approach, combining: Quantitative (questionnaires) and Qualitative (observations) This ensured comprehensive data collection and validation.

Study Area

The study was conducted at Caleb University, Imota, Lagos State, selected due to its evolving campus landscape structure.

Population and Sample Size

The target population included undergraduate students.

Sample size is determined using Yamane's formula:

n=N1+N(e)2n = \frac{N}{1 + N(e)^2}n=1+N(e)2N

Where:

n = sample size

N = population

e = margin of error (0.05)

Using; N = 6000

e = 0.05

$n = 6000/(1 + 60000(0.05)^2$

$n = 6000/(1 + 60000(0.0025)$

$n = 6000/(1 + 15)$

$n = 6000 / 16$

$n = 375$

Sampling Technique

Stratified sampling (by faculty/year)

Random sampling (within strata)

Data Collection Methods

Structured questionnaires

Behavioral observation

Spatial analysis

Variables Measurement

Independent Variable: Landscape Design Features

Dependent Variables: Social interaction, Mental well-being

Data Analysis Techniques

Descriptive statistics (mean, frequency)

Inferential statistics (correlation, regression)

Ethical Considerations

Informed consent, Anonymity, Data confidentiality

Results and Discussion

Introduction

This chapter presents the results obtained from the field survey and discusses the findings in relation to the study objectives, which examined the effect of landscape design on students' social interaction and mental well-being in Caleb University, Imota, Lagos State. A total of 375 questionnaires were distributed, out of which 328 were returned and found valid, representing a response rate of 87.5%, which is considered adequate for analysis.

Demographic Characteristics of Respondents

The demographic data provide insight into the composition of respondents and ensure that the sample represents the student population.

- **Gender Distribution**
  The results showed a fairly balanced gender distribution, with a slight majority of female respondents. This suggests that both genders were adequately represented in the study.
- **Age Distribution**
  Most respondents fell within the 16–25 years age bracket, indicating that the data reflects the perceptions of typical undergraduate students.
- **Level of Study**
  Respondents were drawn from all academic levels (100–400 level), with a higher concentration in 200 and 300 levels, suggesting that more experienced students had greater exposure to campus landscape spaces.
- **Faculty Representation**
  Students from various faculties participated, ensuring diversity in responses and enhancing the reliability of the findings.

Availability and Quality of Landscape Features

Respondents were asked to evaluate the availability and quality of landscape elements such as green spaces, seating areas, walkways, and recreational zones.

- A majority of respondents indicated that green areas and open spaces were available on campus.
- However, many noted that seating arrangements and shaded areas were insufficient, limiting prolonged outdoor use.

- Walkways were generally considered accessible but lacked aesthetic enhancement in some areas.

Discussion

These findings suggest that while Caleb University has made efforts to incorporate landscape features, there is a need for improvement in functionality and comfort. Well-designed seating and shading are essential in encouraging students to utilize outdoor spaces effectively.

Patterns of Space Usage

The study examined how frequently students used outdoor spaces and for what purposes.

- Most respondents reported using landscape spaces occasionally, rather than frequently.
- Common activities included:
    - Relaxation
    - Group discussions
    - Reading and personal study
- Social gatherings were more likely to occur in areas with adequate seating and greenery.

Discussion

The moderate usage pattern indicates that landscape spaces are not being fully optimized. This may be attributed to inadequate facilities or poor design integration. Spaces that combine comfort, accessibility, and aesthetics tend to attract higher student engagement.

Influence of Landscape Design on Social Interaction

To assess social interaction, respondents rated how landscape features affected their ability to interact with peers.

- A significant proportion agreed that well-designed outdoor spaces encouraged social interaction.
- Areas with trees, lawns, and seating clusters were identified as the most conducive for interaction.
- Poorly maintained or unattractive spaces were largely avoided.

Discussion

The findings confirm that landscape design plays a crucial role in facilitating social interaction among students. Spaces that are visually appealing and comfortable naturally attract group activities, fostering a sense of community within the campus.

Influence of Landscape Design on Mental Well-Being

Respondents were asked to indicate how outdoor spaces affected their mental state, including stress levels and relaxation.

- Most respondents agreed that green spaces contributed positively to relaxation and stress reduction.
- Exposure to natural elements such as trees, grass, and fresh air was associated with improved mood.
- However, some respondents reported that overcrowding and lack of maintenance reduced the calming effect of certain spaces.

Discussion

These results highlight the psychological benefits of well-designed landscapes. Natural environments are known to promote mental restoration, and this study supports that assertion. However, the effectiveness of these spaces depends on proper maintenance and thoughtful design.

Statistical Analysis of Variables

- **Descriptive Statistics**
  The mean responses indicated a generally positive perception of the impact of landscape design on both social interaction and mental well-being.
- **Correlation Analysis**
  There was a positive correlation between landscape design features and social interaction, indicating that improvements in design are likely to enhance student engagement.
- **Regression Analysis**
  Landscape design features were found to have a significant influence on mental well-being, suggesting that they are a strong predictor of students' psychological health on campus.

Discussion

The statistical results reinforce the earlier findings, confirming that landscape design is not just an aesthetic consideration but a functional element that directly impacts students' social and mental experiences.

Discussion in Relation to Study Objectives

The findings align with the study objectives, demonstrating that landscape design has a measurable effect on both social interaction and mental well-being. The results support existing literature that emphasizes the importance of integrating natural elements into educational environments.

However, the study also reveals gaps in the current landscape design at Caleb University, particularly in terms of maintenance, seating provision, and spatial organization. Addressing these issues could significantly enhance the effectiveness of outdoor spaces.

The study reveals distinct usage patterns of landscape spaces, with a high proportion of students utilizing these environments for relaxation purposes, while a moderate level of usage is associated with social interaction. This suggests that although landscape spaces are effective as restorative environments, their full potential as social hubs may not be fully optimized. Statistical analysis demonstrates a positive correlation between landscape quality and student interaction, indicating that well-designed and maintained outdoor environments significantly enhance opportunities for social engagement, consistent with the findings of Francis *et al.* (2012) [10].

In terms of mental well-being, the results show that exposure to campus landscape elements contributes to reduced stress levels and improved mood among students. These findings align with the principles of Attention Restoration Theory, which posits that natural environments support psychological recovery and cognitive renewal (Kaplan & Kaplan, 1989) [14].

Conclusion and Recommendations

Conclusion

Based on the findings, it can be concluded that landscape design plays a crucial role in shaping students' experiences within the university environment. Well-planned and properly maintained outdoor spaces not only enhance the aesthetic value of the campus but also serve as important platforms for social engagement and psychological restoration.

Although Caleb University has incorporated basic landscape features, these spaces are not fully optimized to meet students' needs. Issues such as inadequate seating, insufficient shading, and poor maintenance limit the effectiveness of these environments.

Therefore, improving the quality, accessibility, and functionality of campus landscape design will significantly enhance students' social interaction and mental well-being, contributing to a more conducive learning environment

Recommendations

Based on the study findings, the following recommendations are proposed:

1. Improvement of Landscape Infrastructure

- Provide adequate seating arrangements, including benches and group seating clusters.
- Introduce more shaded areas using trees, pergolas, and canopies to improve comfort.

2. Enhancement of Green Spaces

- Increase the number of green areas with lawns, trees, and ornamental plants.
- Incorporate therapeutic gardens and relaxation zones to promote mental well-being.

3. Maintenance and Management

- Establish a regular maintenance schedule for landscape elements.
- Ensure proper cleaning, trimming of vegetation, and repair of damaged facilities.

4. Functional and User-Centered Design

- Design outdoor spaces to support multiple activities such as studying, relaxation, and group interaction.
- Involve students in the planning and feedback process to ensure their needs are met.

5. Spatial Planning and Accessibility

- Improve the connectivity of walkways to make landscape spaces more accessible.
- Ensure even distribution of outdoor spaces across different parts of the campus.

6. Integration of Recreational Facilities

- Introduce light recreational features such as outdoor fitness areas and social hubs.
- Create designated zones for group discussions and informal gatherings.

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