Student Perceptions of the Infrastructure Impact on their Learning Experience

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Abstract

This study attempts to explore the significance of campus infrastructures and the impact of them to the students' learning activities. The governments and societies around the world are continuously trying to improve their education systems and ensure that all students have the opportunity to go to campus and acquire the knowledge and skills they need to lead a healthy and productive life. The key inputs to the education system, such as curricula, teachers, and infrastructures help to improve the quality of education. The goals of sustainable development are defined by the United Nations and the scope of the development agenda for all countries in the world requires countries to build and upgrade education facilities that are child, disability, and gender sensitivity, and provide the safe, non-violent, inclusive and effective learning environments for all. This studies have shown that the students' performance has been enhanced in schools with better physical learning environments. The New technologies and emerging pedagogical practices create better spaces for students to increase the efficiency of investments in educational infrastructure. In this context, this study adopted a quantitative research design including a questionnaire using Likert scale in descriptive statistics. This study showed that the incomplete administrative and academic buildings have created the problems in students' teaching-learning activities at the constituent campus under Mid-West University, Bheri Gyanodaya Multiple Campus, Jajarkot.

Keywords: Student perceptions, infrastructure, learning experience, quantitative study, pedagogical practices

Introduction

Infrastructure development is an important aspect regarding the learning of the students in higher educational institutions. The term infrastructure includes personnel, building and equipment. The institutions in higher levels need to invest resources to bring improvement in infrastructures. This leads to the desired educational objectives and progress of educational institutions. It is necessary to promote infrastructures continuously. Bheri Gyanodaya Multiple Campus, Jajarkot is plagued with multiple challenges: shortage of teachers, poor teaching quality through rote learning methodologies, poor physical infrastructures etc. These quality gaps manifest into low participation rates, high dropouts and poor learning outcomes. We face infrastructure deficit with lack of e-classrooms, furniture, lighting, toilets, computer labs, physically disabled friendly classrooms etc. Indian Embassy began our campus infrastructure in 2013 AD, but unfinished yet. The contractor should complete it and handover to campus within 2016 AD.

Baral (2016) described that history of formal education in Nepal began with the establishment of Durbar School in 1853 AD. The establishment of Tri-Chandra College in 1918 AD is the beginning of higher education in Nepal. There is inadequate budget on infrastructure management and programs though the policy expects to increase the budget on HE up to 10 percent of the national budget. There is a nominal investment in general education. The government should

take the responsibility to ascertain investment in such education unless the public or private sectors should be encouraged to invest. The higher education policy provides public, community, and private (PCP) partnership to start, operate, and develop higher education in Nepal (pp.30-34).

Formal academic instruction in Nepal originated with the founding of Durbar School in the mid-nineteenth century, followed by the birth of higher education via Tri-Chandra College in 1918. Current strategic frameworks aim to allocate a tenth of the national budget to tertiary studies, yet contemporary funding for infrastructure and programming remains largely insufficient. While general education suffers from minimal financial support, the state is encouraged to bridge this gap by fostering public, community, and private partnerships. These collaborative models are viewed as essential mechanisms for the long-term operation and expansion of the country's academic landscape. Ultimately, the text highlights a significant discrepancy between ambitious policy goals and the actual economic resources available for institutional development for higher education.

Krishnaiah et al. (2024) noted that a skilled instructor and teaching pedagogy resemble infrastructure in influencing students' academic lives. Infrastructure fosters an environment conducive to pupils' holistic growth. The children should feel safe and comfortable while learning and enjoying their college experience. The parents want to make certain that the schools have adequate safety standards and amenities to make learning enjoyable. The educational infrastructure in Telangana is deplorable as it faces several issues: crowded classrooms, high enrolment, a lack of suitable restrooms, the provision of good and safe drinking water, a shortage of school libraries, and a lack of playground equipment. Studies have shown that there is correlation between performance, physical facilities, and educational resources. The past studies also indicated that teachers' and students' academic performance is negatively impacted by infrastructural issues in schools (p. 30).

Research by Krishnaiah et al. highlights the vital connection between physical facilities and the academic success of both students and staff. While qualified teachers and effective pedagogical methods are essential, the study argues that a school's environment must be safe and well-equipped to support comprehensive development. Currently, educational institutions in Telangana suffer from significant deficiencies, including overcrowded classrooms, poor sanitation, and a lack of recreational space. These substandard conditions are linked to lower performance levels, as parents and students require a comfortable setting to facilitate learning. Ultimately, the source suggests that addressing infrastructure gaps is crucial for revitalizing the educational quality of the region.

This research paper investigates how physical campus facilities influence the educational development of students at Bheri Gyanodaya Multiple Campus, Jajarkot. By utilizing surveys and structured questionnaires, the authors examine the direct relationship between institutional infrastructure and academic engagement. The text highlights that the quality of the learning environment plays a crucial role in shaping a student's daily activities. Ultimately, the study aims to demonstrate how essential amenities serve as a fundamental pillar for scholastic success in Jajarkot. The findings offer a comprehensive look at the tangible factors that facilitate or hinder effective study habits within this specific setting.

Stakeholders in Higher Educational Institutions

Stakeholders have been categorized into two parts: primary and secondary. The stakeholders who affect organizations' well-being are primary. Their main role is to identify and eliminate possible problems within HEIs. HEIs include program planning, designing, and development form a participatory process, and all stakeholders: staff, students, alumni, employers, and professional associations are involved in order to ensure the development of high-quality, market-oriented, and modern educational programs. We classify the stakeholders of universities as internal and external. Students, alumni and the university's administrative and academic staff not only be affected by employers but are also directly impacted by the content. The most powerful external groups of stakeholders are employers. Another important group of interested people is the professors. Students are also considered the most valuable stakeholders. Alumni are good advocates of the university among youngsters (Gogiashvili, 2021, pp.30-33).

In higher education, stakeholders are typically divided into primary and secondary groups based on how they influence an institution's welfare and problem-solving capabilities. These individuals, whether situated internally or externally, collaborate to ensure that academic curricula remain modern and market-oriented. While students are viewed as the most significant participants, academic staff and alumni also play vital roles in shaping and promoting the university's mission. Furthermore, external employers exert substantial influence over the educational content to meet professional demands. Ultimately, this participatory process relies on the diverse contributions of all parties to maintain high educational standards. These people who are associated to the educational institutions play a vital role to the students' teaching-learning activities.

Infrastructural Facilities

Aithal and Aithal (2023) in their article stated that higher educational institutions should have various kinds of infrastructures for the quality education to their students: physical infrastructure, digital infrastructure, teaching-learning infrastructure, intellectual property infrastructure, emotional infrastructure and networking infrastructure (pp.361-62). Similarly, Aithal and Aithal argue that modern higher education requires a multidimensional approach to institutional support to ensure academic excellence. They move beyond basic physical facilities, highlighting the essential role of digital systems and modern teaching-learning frameworks in the classroom. The authors also emphasize the importance of cultivating intellectual property and fostering emotional wellbeing within the student body. Finally, the text suggests that robust networking infrastructure is vital for creating a collaborative and well-connected learning environment. Together, these six pillars form a comprehensive blueprint for the holistic development of educational institutions.

The infrastructure required for a successful educational environment is categorized into six types, each playing a crucial role in the overall functioning of institutions. Physical infrastructure includes classrooms equipped with modern teaching aids, specialized laboratories for scientific and computer-based experiments, and libraries that provide both physical and digital resources like e-books and journals. Hostels offer accommodation for students coming from distant areas. Digital infrastructure is equally important, with high-speed internet and Learning Management Systems (LMS) supporting online learning and research. Teaching-learning infrastructure is vital for maintaining academic standards, encompassing interactive whiteboards, e-learning platforms, and

online labs for virtual classrooms. Intellectual property infrastructure, such as technology transfer offices and patent management systems, ensures the protection and commercialization of research.

Equally significant is emotional infrastructure, which fosters a sense of belonging and well-being within the institution. Counseling and mental health services support students' emotional needs, while peer support networks encourage collaboration. Wellness centers promote physical and mental health. Networking infrastructure also plays a key role, with alumni networks and research collaborations strengthening ties between institutions. Together, these elements form a comprehensive framework that not only enhances the quality of teaching and learning but also elevates the institution's global reputation, supporting both academic and personal growth within the community.

Objectives

The objectives of the study are as follows:

- to scrutinize the entire insufficient physical facilities at Bheri Gyanodaya Multiple Campus, Jajarkot.
- to compel the local, national and university stakeholders to complete the construction of academic and administrative buildings instantly.

Literature Review

This chapter presents the best practices and cases that have already been done to the related studies i.e. the impact of infrastructures to students' teaching-learning activities within educational institutes.

According to Singh and Kumar (2017), library resources have a positive impact on the learning of students. It provides suitable information to enhance better learning among students. School libraries have a positive impact on student achievement and can be measured in terms of reading scores, literacy and learning. The computer network should connect the library's resources to the classroom. Students with easy access to school libraries achieve higher than those who do not have such access. The students who have many books in their homes achieve higher level than those who have fewer books. This shows that the library is the most important infrastructure to students (p. 17301).

Research by Singh and Kumar highlights that robust library access serves as a vital foundation for academic success among students. The study indicates that individuals with readily available learning materials, whether through school facilities or personal home collections, consistently demonstrate higher literacy levels and test scores. By providing essential information and modern digital connectivity between classrooms and resources, libraries significantly enhance the learning experience. Ultimately, the text argues that these facilities represent the most critical infrastructure for fostering educational growth. Consequently, ensuring that students can easily navigate and utilize these tools is indispensable for improving overall achievement.

Ibrahim et al. (2017) have studied the infrastructures and stated:

School facilities constitute the major components of both direct and indirect elements in the environment of learning. According to him, the school plant and facilities are materials designed to serve specific purposes. She suggested the following as the need for plant and

facilities in schools, to provide opportunity for the firsthand experience, for experimentation and demonstration; for specific investigation, to provide diversity of thought; for observation and inquiry for development of scientific attitudes and skills, to protect the individual, provide comfort and to illustrate concepts.…While school facilities are moveable structures which are also designed to promote teaching and learning effectiveness. (p. 881)

Educational success relies heavily on the physical infrastructure provided by an academic institution. These environments comprise both immovable school plants, such as buildings and libraries, and portable facilities like equipment and teaching aids. Such resources are essential because they facilitate practical experimentation, protect student well-being, and foster a scientific mindset through observation. By offering a diverse range of sensory experiences, these physical assets help to illustrate complex concepts and promote instructional efficiency. Ultimately, a functional school environment acts as a vital tool for shaping student skills and encouraging independent inquiry.

Gloria et al. (2025) stated that well-maintained physical facilities remain a clear strength of the university. Students valued the technological elements as important for learning. The university's efforts to consistently upgrade and enhance its digital infrastructure also received a favorable response. Similarly, research indicates that robust and reliable internet connectivity is essential for effective participation in modern higher education. The primary concerns among students are: poor ventilation, overcrowding, and insufficient seating. It means physical learning environments are the main challenges to student comfort and engagement (pp. 513-517).

Research by Gloria et al. (2025) highlights a significant contrast between the digital strengths and physical weaknesses of contemporary university campuses. While students appreciate the institution's commitment to high-quality technological infrastructure and reliable internet access, the tangible learning spaces often fall short of expectations. Serious issues such as inadequate ventilation, limited seating, and overcrowded rooms create substantial obstacles to effective study. These environmental deficiencies directly impair student comfort and their ability to remain fully engaged during academic activities. Consequently, the study suggests that while virtual resources are flourishing, the physical architecture requires urgent attention to meet modern standards. This disconnect reveals an infrastructure gap where digital advancement outpaces the quality of the actual classroom experience.

The old facilities that are well-updated and maintained can also meet the need of students. A building that has not been maintained well can bring the negative impact on student performance. On the contrary, the well-maintained and renovated building provides us with the most conducive environment for the advancement of education. "The goal is always to create an environment where teachers can teach to the best of their abilities and students can learn to the best of their abilities" (Yangambi, 2023, p.793).

University infrastructure is blended learning environments. Omodan (2024) emphasizes that "physical classrooms become spaces for lectures, collaborative activities, and discussions, while online platforms facilitate resource sharing, remote lectures, and asynchronous learning" (pp. 6-7).

This duality comprises the digital platforms that offers flexibility and a vast area of resources and the physical presence on the other hand, fosters a sense of community, interpersonal skills and hands-on experiences. Now the universities have modern demands like modern libraries have been transitioned from housing books to digital databases, e- journals and multimedia resources. They have become collaborative hubs with digital workstations. The relevance of physical assets in modern universities remains unequivocal. Lecturer halls, laboratories and libraries are the bedrock upon which the ethos of a university is built. The physical campus is a hub where students, staff and faculty interact, congregate and perform collaborative endeavors.

This research highlights a significant lack of comprehensive investigation into the physical resources at Bheri Gyanodaya Multiple Campus, Jajarkot. The authors argue that inadequate facilities directly obstruct the effectiveness of both teaching and learning within this specific academic environment. By identifying a notable research gap, the text emphasizes that previous studies have overlooked how this institution's setting impacts its members. It underscores the philosophical belief that a supportive physical environment is essential for fostering a healthy and productive mind. Ultimately, the source advocates for a deeper examination of how institutional infrastructure shapes the overall academic success and vitality of students.

Methodology

This study adopted a quantitative research design to analyze the data collected through a specifically designed questionnaire to assess student perceptions of the relationship between infrastructure and learning experiences. The research utilizes questionnaires as primary data collection methods. The questionnaire consists of 10 items, each with 5 response options based on the Likert Scale method range from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was administered directly to a sample of 10 students selected from a population of 300 students enrolled in Bachelor's (BA, B.Ed., BBS) and Master's (M.Ed.) programs at Bheri Gyanodaya Multiple Campus, Jajarkot. The students were randomly chosen using random sampling, ensuring an unbiased selection process. Participants were asked to circle the option that best represented their perception of each statement, with the responses being voluntary and anonymous, as no personal identifiers were collected.

After the data collection, the responses were analyzed using descriptive statistics to summarize and interpret the results. The statistical analysis was conducted using SPSS which facilitated the computation and evaluation of the collected data. The findings derived from the Likert scale responses are presented in the subsequent section, highlighting the key patterns and insights related to the infrastructure's impact on student learning experiences.

Results

This study has determined the impact of infrastructures to students' learning at Bheri Gyanodaya Multiple Campus, Jajarkot. A questionnaire has been administered to students to answer without their names. The data has been collected and analyzed from the selected students' responses using SPSS software and Likert Scale. The analysis of the results from the above table of Mean and Standard Deviation shows that 10 students have been selected as a sample out of 300 students, and they are from bachelor and master levels, within 20-30 years of age. There is a strong adherence to

assertion of the questions' options no. 1 and 2 i.e. strongly disagreed and disagreed, natural, agreed and strongly disagree. The other assertions have been selected least in number. This shows that the campus lacks the infrastructure and they are highly affecting the students' learning activities. So, Table 1 denote that the students are suffering from the inadequacy of campus infrastructures.

Table 1: *Demographic Characteristics*

Category	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Age Group				
20-25	6	60.0	60.0	60.0
26-30	4	40.0	40.0	100.0
Gender				
Male	6	60.0	60.0	60.0
Female	4	40.0	40.0	100.0

The provided data presents a demographic breakdown of a small group of young adults, categorized by age and gender. A majority of the participants, specifically sixty percent, fall within the younger bracket of twenty to twenty-five years old. The remaining individuals are aged between twenty-six and thirty, representing a smaller portion of the total cohort. Regarding gender distribution, the figures indicate that males comprise sixty percent of the sample, while females make up forty percent. These statistical tables offer a concise quantitative summary of the primary characteristics defining this specific research population. Through these metrics, the source establishes a clear statistical profile for the subjects involved in the study.

This document outlines the analytical framework used to interpret data collected from a specific survey. It explains how descriptive statistics, such as the mean and standard deviation, are utilized to evaluate participant responses. The text also clarifies that the results are categorized through frequency tables that incorporate Likert Scale measurements. Furthermore, the methodology details the inclusion of demographic variables, specifically the age and gender of those surveyed. These figures are presented alongside percentage breakdowns to provide a comprehensive view of the findings. Overall, the source serves as a guide for understanding the statistical techniques applied to the research data.

Table 2: *Distribution of Responses Regarding Learning Environment and Demographic characteristics*

Statements	Strongly Disagreed	Disagreed	Netural	Agreed	Strongly Agreed	Total (N)
Easy access to library	8	2	0	0	0	10
The disabled students are easily learning	9	1	0	0	0	10
Campus environment allows students to learn and teachers to teach	5	3	1	1	0	10
Insufficient infrastructure of buildings creates an appropriate teaching and learning environment	5	3	1	1	0	10
Classrooms offer configuration for teaching and learning	7	1	1	1	0	10
No noise interferes with teaching and learning	6	1	1	2	0	10
Headache and dry skin are caused by the lack of fresh air in classrooms	5	2	2	0	1	10

Lighting facilities boost the teaching-learning activities of students and teachers	0	1	2	2	5	10
Too hot and too cold temperature compromises teaching-learning activities	6	2	2	0	0	10
E-learning classrooms are large enough for teaching-learning activities	7	0	2	0	1	10

Table 2 shows how physical infrastructure impacts the educational experience for students and staff. Survey results indicate that mobility and accessibility are major concerns, as participants overwhelmingly reported difficulties in accessing the library and other facilities. Furthermore, the physical layout of the campus and classrooms is largely viewed as inadequate for fostering an effective learning atmosphere. Issues such as insufficient fresh air and noise disturbances are highlighted as significant detractors from academic focus. While lighting is perceived as a positive feature, most other environmental factors are seen as barriers to success. Ultimately, the source illustrates a profound dissatisfaction with the current campus building standards and their effect on education.

Table 3**:** *Physical Learning Environment and Respondent Characteristics*

Variable	Valid (N)	Missing	Mean	Std. Deviation
Easy access to the library	10	0	1.20	0.422
Accessibility for students with disabilities	10	0	1.10	0.316
Campus environment supports teaching and learning	10	0	1.80	1.033
Poorly maintained buildings affect learning environment	10	0	1.80	1.033
Classroom configuration supports teaching and learning	10	0	1.60	1.075
Noise does not interfere with teaching and learning	10	0	1.90	1.287
Poor air quality causes headache and dry skin	10	0	2.00	1.333
Natural lighting improves morale of students and teachers	10	0	4.10	1.101
Extreme temperature affects teaching and learning	10	0	1.60	0.843
E-classrooms are adequate for teaching and learning	10	0	1.80	1.398
Age (categorical coding)	10	0	1.40	0.516
Gender (categorical coding)	10	0	1.40	0.516

Table 3 presents data on the physical learning environment and respondent characteristics. It includes various variables such as accessibility to the library, campus environment, classroom configuration, and factors like noise, air quality, and temperature that affect teaching and learning. The table reports the number of valid responses (N = 10) for each variable, with no missing data. The mean and standard deviation for each variable are also provided, showing a range of values that reflect the respondents' perceptions of the learning environment. For instance, "natural lighting improves morale" has the highest mean (4.10), while "easy access to the library" and "accessibility for students with disabilities" have lower means of 1.20 and 1.10, respectively. Additionally, respondent characteristics such as age and gender are categorized with similar values for mean and standard deviation.

Discussion

This study investigates the status of physical and technological infrastructure and its influence on student learning outcomes. The results suggest that inadequacies in physical infrastructure are perceived to negatively affect students' learning activities. This aligns with evidence indicating that physical learning environments have a significant relationship with student academic outcomes. Empirical research has shown that various dimensions of school infrastructure, such as classroom conditions, lighting, and space configuration, are associated with student learning effectiveness and performance (Owoseni et al., 2020). These findings support the view that physical infrastructure contributes meaningfully to educational processes by shaping the conditions under which teaching and learning occur.

Further literature indicates a positive correlation between the availability and quality of physical infrastructure and academic achievement. Studies conducted in different global contexts reveal that improvements in facilities are linked to better student outcomes; for example, research conducted in both African and Asian educational settings found significant associations between building condition, learning resources, and student performance (Yangambi, 2023; Ntahomvukiye et al., 2024). Such evidence underscores the importance of adequate infrastructure in creating environments conducive to learning. These research insights reinforce the implication that institutions aiming to enhance learning outcomes must prioritize investment in physical infrastructure. Adequate facilities not only support instructional delivery but also contribute to students' engagement and academic success. Therefore, improving campus infrastructure should be considered a key strategy for advancing teaching and learning quality.

Conclusion

This research investigates how insufficient physical facilities at Bheri Gyanodaya Multiple Campus, Jajarkot have severely hindered academic success and instructional quality. By utilizing the Likert Method, the study highlights that a lack of proper buildings and equipment: natural and electricity lighting, computer-labs, interactive boards, e-library etc. lead to declining student numbers and poor staff productivity. The findings emphasize that modern infrastructure is a fundamental requirement for any effective educational environment. Consequently, the report urges local and national authorities, alongside university stakeholders, to prioritize campus development and end construction delays. Ultimately, the text serves as a call to action for immediate investment to prevent further academic deterioration.

Author's Biography

Lok Bahadur Shahi is an Assistant Professor at Bheri Gyanodaya Multiple Campus, Jajarkot, under Mid-West University's Graduate School of Humanities and Social Sciences. He holds an MA in English and has contributed significantly in teaching English.

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