Journal of Social & Organizational Matters

Vol 2 No 3 (2023): 25-33

Teachers' Perspectives on availability of infrastructure and resources: A Quantitative Study based on Gender and Sector

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Keywords: *Infrastructure, Resources, Teachers' Perspective, Gender, Sector*

DOI No: https://doi.org/10.56976/jsom.v3i3.40

A maintainable infrastructure of educational organization have to arrange for a venue free of bias, violence, and terror, where learners can actually feel psychologically, environmentally, emotionally and physically satisfied . Key infrastructure includes readily available and user-accessible textbooks, teaching and learning materials, print-rich environments, and other amenities and facilities, which enable students to concentrate more on their academics. The basic objective of current research was to examine teachers opinions about infrastructure of school and available resources in the 21st century. It was a descriptive study in nature using a survey research design. For data collection, a self-developed questionnaire was used comprising 30 items. Data was collected from different public and private secondary schools. Data was analyzed by using SPSS and deploying descriptive and inferential statistics e.g. a mean score, standard deviation, and t-test for comparing teachers' perceptions based on gender and sector. The result of the study revealed no significant difference based on gender and sectors which revealed teacher perception of the school infrastructure and available resources in the 21st century. All school components are in charge of maintaining the school's infrastructure and facilities.

1. Introduction

Several nations want their school to be adaptive and innovative, despite uncertainties in a quickly changing world. To achieve these expectations, educational policymakers implement new adjustments**.** Future classrooms will be designed for the digital age, while current ones were designed for the Industrial Age (Göçen et al., 2020). Before the 2000s, education was primarily focused on imparting knowledge. In recent years, the focus has shifted to developing trustworthy compass and navigation abilities under uncertain circumstances (OECD, 2015; Xiaomin & Auld, 2020).

Only focusing on current situation and needs is not enough for an organization, as the skills needed in today's systems may not be relevant in 20 years (Barber & Mourshed,2009). A literature genre has emerged focusing on designing learning spaces and instructional practices for the future infrastructure of schools and classrooms (Sardinha, et al., 2017). Furthermore, the OECD presented examples of current designs and best practices for improved learning environments (Engeness, 2021). Few researchers have examined instructors' perspectives on future learning settings. The basic aim of the study was to investigate the teacher opinions about school infrastructure in the 21st century. Innovative educational systems can equip instructors and students with 21st-century abilities and prepare them for the future.

To achieve it in an effective way, decision makers should discus the new approaches of education and its executions in a better way (Gutierrez-Franco et al., 2021). Teachers might include new teaching concepts based on technological advancements and pedagogical research (Kakhkhorov & Rasulova, 2020). Educational systems now incorporate technological management, education based on science, technology, engineering and mathematics, flipped classrooms, digital literacy, online courses, adaptive learning settings, and knowledge hubs, among other changes (Al-Samarraie et al., 2020). New educational understandings and adjustments will emerge as schools strive to align with developing world concerns. These priorities encompass far broader domains, such as improved teacher education and freshly constructed classroom layouts. Pedagogy aims to identify educators' preferences for future learning settings to align with global developments (Santika,2021).

Objective of the Study

- To explore teachers' perspectives about the availability of infrastructure and resources in elementary schools based on gender and sector.

2. Literature review

Education is essential for daily life and cannot be overlooked. To enhance education quality during the Industrial Revolution, it's crucial to consider the infrastructure and resources of schools at different stages, including high schools. Education cannot be implemented effectively without

adequate facilities and infrastructure (Kompri, 2014). The availability and management of school facilities play an important role in quality of education and student success (Akpan, 2020).

School infrastructure and resource management is not an easiest task. There are still challenges in managing educational school infrastructure and resources, including inaccuracies because of insufficient information about arrangement, acquirement, record, preservation, and exclusion. Provision of a safe, comfortable, and pleasant learning environment are most important aspects to manage organizational structure and resources to. Infrastructure management regulates and maintains educational facilities to ensure optimal and meaningful contributions to the process of education. Managing learning structures and arrangement is essential for creating a positive learning environment for students, teachers, and school staff (Mulyasa, 2004).

To ensure effectiveness of resources and structure of schools, correct procedures and mechanisms must be in place. It helps achieve effective and efficient learning objectives. Ensuring proper educational facilities and structure is crucial for boosting the excellence of education and organizations. Educational institutions must have enough facilities and infrastructure (Agustin & Permana, 2019). The government and community invest heavily in school facilities. Effective management of school facilities is crucial since they play a significant role in education. The school's well-maintained facilities and grounds are said to reflect the quality, care, and importance in academic programs. This remark implies that the exterior appearance of educational facilities influences public perceptions of academic programming (Akpan, 2020). School administrators face significant challenges in managing facilities in primary, secondary, and tertiary institutions. Abandoned equipment such as duplicating machines, typewriters, photocopiers, and automobiles, can remain damaged and rusted for years. Building fissures, leaking roofs and windstorm damage can go unnoticed for months or even years. These indicate inadequate management and upkeep of school infrastructure and equipment (Mbipom, 2000). Whereas, Physical amenities create an appropriate educational settings for students. New and updated amenities are crucial and effective for learning of learners and their achievements (Shami & Hussain, 2005).

Organizational amenities play a significant role to make sure the educational quality. It is the basic standard used to assess educational progress. a study conducted in united kingdoms revealed that academic achievement of learners are effected by school infrastructure (Teixeira et al., 2017).

We must define school facilities as structures that house classrooms, labs, dormitories, administrative, athletic, or related amenities run in conjunction about organization. It plays significant role in guaranteeing educational excellence. It is a basic standard for measuring educational progress (Yangambi, 2023). So, we must be honest and recognize the need to eliminate differences in learning environment quality among schools (Clemmons, 2014).

Today's schools must prepare kids for an uncertain and ever-changing future. Many schools remain unchanged from a generation ago, and teachers are not creating the necessary pedagogies and practices to meet the different needs of today's learners (OECD, 2015). Policymakers must address issues like, "What does society want to achieve and with what kind of education?" based on educational organizations' future aspirations. What resources, physical conditions, and curriculum will be used to achieve this goal? Evidence suggests that the following factors boost the likelihood of students and instructors attending school, keeping healthy, and remaining in their profession:

- Schools that are well-built and proof against natural calamities
- Basic services include water, sanitation, trash disposal, energy, and communications.
- Excellent interior environmental quality, particularly in terms of air quality and humidity.
- Opportunities for outdoor play
- Schools are maintained in good physical condition (Barrett, 2019).

Educational structure comprises buildings, lecture hall, laboratories, and tools, are important elements of learning environment or any educational institute. It is proven that the quality of infrastructure supports good teaching and learning, increase the learning outcomes of learner, minimize the dropout rate of learners and so on (Teixeira et al.,2017).

Educational facilities include classrooms, learning media, tools, and materials, while infrastructure includes land, buildings, roads, sports fields, water, phones, and furniture that indirectly support teaching and learning. Providing adequate school facilities and infrastructure benefits teachers, students, and society as a whole. Complete school facilities and infrastructure have an impact on student enrollment (Herwan et al., 2018). Facilities and infrastructure have a significant influence in attracting students to schools (Vincent, 2012).

Achieving educational goals requires high-quality resources, including facilities and infrastructure. Non-systematic educational practices can impact the learning process (Alkadri et al., 2018). Schools recognize that learning is a dynamic process that evolves with the rapid advancements of science and technology. To increase education quality, schools must consider all aspects, including facilities and infrastructure. School facilities and infrastructure play a vital role in facilitating effective educational process. Achieving it requires proper educational buildings and infrastructure, as well as effective management (Nurbaitii, 2015).

Hypothesis

- There is no significant difference between perceptions about the availability of infrastructure and resources in elementary schools based on gender.
- There is no significant difference between perceptions about the availability of infrastructure and resources in elementary schools based on sector.

3. Methodology

A survey research method was used which is a more comprehensive research method that collects and analyses input (date) from a considerable number of respondents. For getting the study objectives, a questionnaire was used. The sample of the study was based on 200 individuals who were selected by using a convenient sample technique. In this sample Data is obtained from a readily accessible and available group of people (Simkus, 2023). A self-originated questionnaire was used to collect data from individuals. The instrument was developed after reviewing the literature. The data was analyzed through a statistical package for social science (SPSS) 21 which comprises descriptive and inferential statistics e.g. mean score, standard deviation, and t-test. The reliability of the questionnaire was .805. To measure the difference between the mean score of the participant gender and sector bases, a t-test was employed to ascertain if the scores of 2 groups were significantly different or not.

4. Findings of the Study

The findings of the study are described in the following tables:

Table No 1: Mean Score and Standard Deviation

Respondent	No of items	Mean	SD	Alpha Cronbach reliability
200	30	131.57	7.24	.805

Above table results revealed that there were 200 participant and 30 items and on likert type scale the range of scores was 1-5 for each statement. Above 3 mean score was deliberated as above average and it indicate agree whereas, below than 3 reflect the below average and indicate disagreement. Above table result reveal that perception of teachers about school infrastructure was high.

Table No 2: Means of factors

Factors	N	No of items	Mean	SD
Resources	200	10	48.21	3.19
A/ V Aids	200	5	26.41	1.90
Labs	200	5	26.34	1.83
Registers	200	6	21.89	1.51
Activities	200	4	21.74	1.79

It is evident from the above table that teachers' perceptions about the school infrastructure about; different types of resources availability (M=48.21, SD=3.19), audio-visual aids (M=26.41, SD=1.90), Labs (M=26.34, SD=1.83), registers (M=21.89, SD=1.51), different type of activities (M=21.74, SD=1.79) shows high mean scores.

Table 3: Difference between perceptions about the infrastructure and available resources in school based on gender

Gender	N	Mean	SD	Df	T	p
Male	112	39.60	3.07	198	1.221	.223
Female	88	39.11	2.50			

The above table reveals that there was no significant difference between the mean score of male school teachers' perception (M=39.60, SD=3.07) and female school teachers' perception (M=39.11, SD=2.50) of school infrastructure and availability of resources. Therefore, both male and female school teachers have the same perception about the availability of resources. The difference between the mean scores is just by chance.

Table 4: Difference between teacher perceptions about the infrastructure and available resources in schools based on sectors

Sector	N	Mean	St.d	df	t	p
Public	100	26.28	1.91	198	.115	.909
Private	100	26.31	1.77			

The above table reveals that there was no significant difference between the mean score of public-school teachers' perception (M=26.28, SD=1.91) and private school teachers' perception (M=26.31, SD=1.77) about school infrastructure and availability of resources. Therefore, both public and private school teachers have the same perception about the availability of resources. The difference between the mean scores is just by chance.

4.1 Discussion

Ensuring proper educational facilities and structure is important in boosting the education excellence in educational institutions. Educational institutions must have enough facilities and infrastructure (Kompri, 2014). These are essential components of the education process as they assist and facilitate the learning experience. To improve education quality and quantity, it's crucial to prioritize facilities and infrastructure. Improving educational quality requires effective execution of facilities and framework. Facility and infrastructural management involves effectively and efficiently managing educational facilities to accomplish their stated objectives. To achieve high-quality education, facilities, and infrastructure must be standardized to provide smooth and effective learning processes. Today's schools must prepare learners for an uncertain and ever-changing future. Many schools remain unchanged from a generation ago, and teachers are not creating the necessary pedagogies and practices to meet the different needs of today's learners (OECD, 2015). Modern educational institutions should use creative techniques to facilitate the acquisition of 21st-century skills, reflecting changing global needs. Schools must prepare children for future economic, environmental, and social changes, including job

opportunities, technological advancements, and societal challenges (OECD, 2018). As learner and teacher profiles change, design of class and school should be adapt (Yildirm, 2018). This study aims to explore teacher perspectives on school infrastructure and other associated aspects. Computerized tools and instructional technologies are essential for effective communication and learning (Sahinet al., 2013). Scholars, educators, and policymakers argue that schools should be reimagined as "learning organizations" capable of adapting to changing environments, embracing innovation, and improving student outcomes (OECD, 2018).

5. Conclusion

The school administrator is responsible for ensuring adequate infrastructure. Providing these facilities involves significant capital investment, especially as educational material costs continue to rise. Maintaining public school facilities is essential for their intended purpose. Proper operation and maintenance are essential for optimal functionality. On the bases of findings it was concluded that most of the participants agreed that they facilitate their learners, organization also ensured the provision of facilitation to the learners. Whereas the infrastructure of schools plays an important role in the production of qualified and skilled manpower for the development of the nation. The research findings revealed that pupils in schools are provided with amenities such as laboratories, school buildings, chairs/tables, administration blocks, multimedia, school maps, school calendars, and so on. 21st-century school infrastructure is an upgrade in the educational environment that provides an academic way to learn with full potential and interest based on student needs. It also affects the teacher's ability to teach productively. Infrastructure facilities are becoming more specialized. 21st-century school infrastructure should be positioned in appropriate locations, considering the needs of the users. There are physical facilities that teachers and students should improve to facilitate teaching and learning; therefore, teachers and students should supply such school infrastructure amenities. The conclusion of this study will provide information regarding the facilities in 21st-century school infrastructure.

5.1 Recommendation

- School leaders be aware of their school's infrastructure.
- Improving school facilities is necessary for successful operations.
- Science labs and libraries can help improve school standards.
- Meeting fundamental requirements can improve school efficiency.
- The administration should be assisted in providing physical amenities.

6. Reference

Agustin, H. Y., & Permana, J. (2019). Management of facilities and infrastructures for improving the learning quality of vocational high school . *Advances in Social Science, Education and Humanities Research,400*, 64-68.

Akpan, C. (2020). Strategies for sustainable management of school physical facilities in the 21st century. *International Journal of Educational Administration, Planning & Research, 1(1)*, 125-135.

Alkadri et al. (2018). Essentiality of management of facilities and infrastructure toward a number of students of early years institution. *Advances in Social Science, Education and Humanities Research (ASSEHR), 169*, 77-79.

Al-Samarraie, H., Shamsuddin, A., & Alzahrani, A. I. (2020). A flipped classroom model in higher education: a review of the evidence across disciplines. *Educational Technology Research and Development*, *68*, 1017-1051.

Barber, M., & Mourshed, M. (2009)Shaping the future: How good education systems can become great in the decade ahead. Singapore: McKinsey Company.

Barrett, P. (2019). *The Impact of School Infrastructure on Learning: A Synthesis of the Evidence.International Development in Focus.* Washington: World Bank Group.

Clemmons, J. (2014). *5 Ways Your School Facilities Impact Student Achievement.* Texas Association of School Boards.

Engeness, I. (2021). Developing teachers' digital identity: towards the pedagogic design principles of digital environments to enhance students' learning in the 21st century. *European Journal of Teacher Education*, *44*(1), 96-114.

Göçen et al. (2020). Teacher perceptions of a 21st century classroom. *International Journal of Contemporary Educational Research,7(1)*, 85-98.

Gutierrez-Franco, E., Mejia-Argueta, C., & Rabelo, L. (2021). Data-driven methodology to support long-lasting logistics and decision making for urban last-mile operations. *Sustainability*, *13*(11), 6230.

Herwan et al. (2018). The role of school committee in supporting the fulfillment of education facilities and infrastructure . *Journal of Education Teacing and Learning, 3(2)*, 282-287.

Kakhkhorov, S. K., & Rasulova, Z. D. (2020). Methodology of improving the professional activity of the future teacher of technology on the basis of modern educational technologies. *Universal J. of Educational Research*, *8*(12), 7006-7014.

Kompri, K. (2014). Manajemen sekolah teori dan praktek. *Southeast Asian Journal of Islamic Education Management 2(1)*, 113-124.

Mbipom, G. (2000). *Educational administration and planning.* Calabar. Nigeria: University of Calabar press.

Mulyasa, E. (2004). *School-Based Management: Concepts, Strategies and Implementation.* Teen Rosdakarya: Bandung.

Nurbaitii, N. (2015). Manajemen Sarana dan Prasarana Sekolah. *Manajer Pendidikan, 9(4), https://doi.org/10.33369/mapen.v9i4.1156*, 536-546.

OECD. (2015). *Schooling redesigned: Towards innovative learning systems.* Research and Innovation, OECD Publishing.

OECD. (2018). *The future of education and skills: Education 2030.* OECD Publishing.

Sahin et al. (2013). Analysis of relationships between technological pedagogical content knowledge. *Journal of Digital Learning in Teacher Education, 29(4)*, 110-117.

Sardinha et al. (2017). Bridging approaches: Classroom physical space as a learning ecosystem. *Interaction Design and Architecture(s) Journal, (35)*, 56-74.

Shami, P., & Hussain, K. S. (2005). *Basic Education in Pakistan: Academy of Educational Planning and Management.* islamabad: Ministry of Education.

Simkus, J. (2023, July 31). *simply psychology*. Retrieved Feburary 2, 2023, from simply psychology: https://www.simplypsychology.org/convenience-sampling.html

Teixeira et al. (2017, October 3). *World Bank Blogs*. Retrieved Feburary 3, 2023, from World Bank Blogs: https://blogs.worldbank.org/education/why-education-infrastructure-matters-learning

Thomas, R. (2023, July 4). *Enago Academy.* Retrieved October 02, 2023, from Enago Academy: https://www.enago.com/academy/population-vs-sample/

Vincent, M. J. (2012). *California's K-12 educational infrastructure investments: leveraging the state's role for quality school facilities in sustainable communities.* Berkeley: Center for Cities & Schools.

Xiaomin, L., & Auld, E. (2020). A historical perspective on the OECD's 'humanitarian turn': PISA for Development and the Learning Framework 2030. *Comparative Education, 56*(4), 503-521.

Yangambi, M. (2023). Impact of school infrastructures on students learning and performance: case of three public schools in a developing country. *Creative Education, 14(4)*, 788-809. doi: 10.4236/ce.2023.144052.

Yildirm, B. (2018). Research on Teacher Opinions on STEM Practices. *Eğitim Kuram ve Uygulama Araştırmaları Dergisi, 4(1)*, 42-53.