

A COMPARATIVE STUDY OF QUALITY INFRASTRUCTURE IN PUBLIC AND PRIVATE PRIMARY SCHOOLS DISTRICT LOWER DIR

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ABSTRACT

This research study comparatively investigated the quality of infrastructure between public and private schools at the primary level in Lower Dir, one of the northern districts of Khyber Pakhtunkhwa. High-quality infrastructure is known to lead to better educational outcomes. The main objectives of the study were: (i) to determine the quality of infrastructure in public and private primary schools, (ii) to evaluate the role of quality infrastructure in both public and private primary schools, and (iii) to compare the quality infrastructure between public and private primary schools. Research questions were; (i) what are the differences in quality infrastructure between public and private primary schools? (ii) What are the differences in the physical infrastructure of public and private primary schools, including classrooms, libraries, laboratory and playgrounds? (iii) How do public primary schools compare to private primary schools in terms of quality infrastructure in lower Dir? The population comprised of all head teachers, teachers, and students of primary level in District Lower Dir KPK. The sample size consists of 420 participants selected through Stratified Random Sampling technique. The data were collected with the help of a questionnaire. Frequency, percentage, and mean were used to analyze the data. It was concluded that basic infrastructure like classroom, playground, sanitation, and other related facilities were available in the schools while the availability and quality libraries and laboratories were not satisfactory. It is therefore; recommended that modern libraries and laboratories should be established in public and private schools.

Keywords: *Quality Infrastructure, Public, Private, Primary level*

Introduction

The status of primary school infrastructure in Pakistan reveals significant disparities between government and private schools. Government primary schools often face challenges such as inadequate facilities, poor maintenance, and lack of essential resources like proper classrooms, sanitation, and drinking water facilities. In contrast, private schools generally have better infrastructure, with more modern amenities and conducive learning environments. The disparities extend to educational outcomes, with private school students typically performing better than their government school counterparts due to the enhanced learning environments and resources available (Annual Status of Education Report [ASER] Pakistan, 2023; UNICEF Pakistan, 2023).

The comparison between government and private primary schools in Pakistan highlights significant differences in infrastructure, resources, and educational outcomes. Government schools, particularly in rural areas, often face severe infrastructure deficiencies, including inadequate classrooms, poor sanitation, and lack of access to basic amenities like clean drinking water. These challenges hinder the overall learning environment and adversely affect student performance. On the other hand, private primary schools generally boast better infrastructure, including well-maintained buildings, modern classrooms, and access to

technological resources. This disparity in facilities contributes to better educational outcomes in private schools, as they are able to provide a more conducive learning environment and employ better-trained teachers. Consequently, students in private schools tend to perform better academically compared to those in government schools (Annual Status of Education Report [ASER] Pakistan, 2023; UNICEF Pakistan, 2023; Pakistan Institute of Development Economics [PIDE], 2020).

The quality of school infrastructure plays a pivotal role in shaping the educational outcomes and overall development of students. In Lower Dir, a region marked by educational disparities, comparing the infrastructure of public and private schools offers valuable insights into how physical resources impact learning. Public schools often grapple with inadequate facilities, including poorly maintained buildings, insufficient classrooms, and lack of basic amenities, which can severely hinder the educational process. Conversely, private schools typically enjoy better infrastructure, with modern classrooms, well-maintained facilities, and access to advanced learning resources, contributing to a more conducive learning environment. This comparative study aims to evaluate the differences in infrastructure quality between public and private schools in Lower Dir, shedding light on the implications for educational equity and student performance (Annual Status of Education Report [ASER] Pakistan, 2023; UNICEF Pakistan, 2023; Pakistan Institute of Development Economics [PIDE], 2020).

This research aims to conduct a comparative study of the quality of infrastructure between public and private schools in Lower Dir, Pakistan. School infrastructure is a critical determinant of educational quality, influencing student performance, attendance, and overall learning experiences. Public schools in Lower Dir often face challenges such as insufficient classrooms, poor sanitation facilities, and inadequate maintenance, which can hinder educational outcomes. In contrast, private schools generally have better infrastructure, including modern classrooms, well-maintained buildings, and access to technological resources, fostering a more conducive learning environment. By systematically comparing these differences, this study seeks to highlight the impact of infrastructure quality on educational equity and effectiveness in the region (Annual Status of Education Report [ASER] Pakistan, 2023; UNICEF Pakistan, 2023; Pakistan Institute of Development Economics [PIDE], 2020).

Objectives of the Study

The objectives of the study were:

- (i) To determine the quality of infrastructure in public and private primary schools.
- (ii) To evaluate the role of infrastructure quality in both public and private primary schools.
- (iii) To compare the quality of infrastructure between public and private primary schools.

Research Questions

The research questions of the study were:

- (i) What are the differences in quality infrastructure between public and private primary schools?
- (ii) What are the differences in the physical infrastructure of public and private primary schools, including classrooms, libraries, laboratory and playgrounds?
- (iii) How do public primary schools compare to private primary schools in terms of quality infrastructure in lower Dir?

Review of Literature

The Oxford Advanced Learner's Dictionary (2010) defines education as the process of teaching or learning specific knowledge or skills often for a profession. It defines quality as the level of excellence or fineness. When combined, "quality education" can mean different things to different people. According to the dictionary, quality education equips learners with the skills and knowledge they need to develop mentally and succeed in the future, allowing them to use what they've learned in their daily lives and sustain themselves after graduation (Gulati, & Charles, 2024).

There is no doubt that only quality education can prepare students for the challenges of the global market. In Pakistan, many people criticize school education for lacking quality and failing to teach basic concepts. As a result, when students graduate and try to find jobs with their certificates, they often struggle because their skills do not match what employers need. Hussain (2005, p.40) says that there is a big gap between the skills needed by the economy and the skills taught in schools. This gap leads to wasted resources and a shortage of essential skills needed to keep the economy running smoothly (Chishti, 2011).

The most important factor for the future of a country and its young people is access to quality education. For Pakistan to achieve significant financial and social development, the quality of education and access to it are crucial. The National Education Policy stated that while defining quality is challenging, it is necessary to establish clear standards. There is a need to discuss and agree on what quality means at each education level and for the entire system. (Xhaferri & Iqbal, 2010).

Having good facilities is important for giving students a good education, especially in secondary schools. People often think that private schools provide better education than public schools. Researchers think it's really important to compare the facilities available at public and private secondary schools. So, they did a study to see how the facilities in public and private secondary schools in Pakistan compare (Farooqi, & Farooq, 2015).

Research worldwide shows that good school facilities greatly impact the health, behavior, engagement, learning, and growth of teachers and students. Proper infrastructure is essential for creating the right learning environments, improving education quality, and increasing student enrollment, especially in remote areas where marginalized communities live (Siddique, 2019).

Research Methodology

The study was employed a convergent design under quantitative research method in order to collect and analyze data concurrently, and it was merged the result to draw conclusion. Data were collected from the respondents at once and then it was finned and generalized to the population. There were targeted population of this study included 20 public and private primary schools, 20 heads of the institution, 100 teachers while 300 students of both public and private primary school of tehsil Timergara were the respondents of the study. Data was on the basis of various infrastructure indicators, including classroom facilities, furniture, libraries, laboratories, playground, and sanitation.

Population of the Study

The population for the study included the heads of institutions, teachers, and students from 1,001 public and private schools in Tehsil Timergara (Lower Dir).

Sample of the Study

A Stratified Random Sampling technique was used for the study, with a sample size of 420 respondents. This included 20 heads of institutions, 100 teachers, and 300 students from both public and private schools. Specifically, the sample from each school consisted of 1 head of the institution, 5 teachers, and 15 students (3rd to 5th). The table below shows the distribution of respondents in the study;

Total number of schools =20

S. No.	Type of Respondents	Public Schools	Private Schools	Total
1	Head Teachers	10	10	20
2	Teachers	50	50	100
3	Students	150	150	300
Total		210	210	420

Data Collection Procedure

The Questionnaire was used for collection of data from the Head Masters/ Principals, Teachers and Students of Public and Private Schools of Tehsil Timergara Lower Dir KPK by the researcher. Before data collection, the researcher gave clear instructions to the participants for filling questionnaire. The researcher himself visited each and every school of the targeted samples for data collection.

Data Analysis

Comparative Analysis of Basic Facilities in Public and Private Schools

S. No.	Statement	Public School				Private School			
		Yes	%Age	No	%Age	Yes	%Age	No	%Age
1	The school has a modern and satisfactory boundary wall.	175	83%	35	17%	197	94%	13	06%
2	Appropriate water supply system is available in the school.	184	88%	26	12%	193	92%	17	08%
3	A solar system is available and functional.	167	80%	43	20%	59	28%	151	72%
4	Drinking water is available in the school.	205	98%	05	02%	207	99%	03	01%
5	Washroom facilities are available in the school.	207	99%	03	01%	203	97%	07	03%

The table presents a comparative analysis of public and private schools regarding Basic Facilities Out of 210 respondents from public schools, 175 (83%) agreed with the statement that *the school has a modern and satisfactory boundary wall*, while 35 (17%) disagreed. In private schools, 197 respondents (94%) agreed with this statement, while only 13 (6%) disagreed. Additionally, 184 respondents (88%) from public schools agreed with the statement that *appropriate water supply system is available in the school*, while 26 (12%) disagreed. Similarly, in private schools, 193 respondents (92%) agreed, while 17 (08%) disagreed. Regarding *a solar system is available and functional*, only 167 respondents (80%) from public schools agreed, while 43 (20%) disagreed. In

contrast, 59 respondents (28%) from private schools agreed that separate classrooms are available, while 151 (72%) disagreeing. When asked about *drinking water is available in the school*. 205 respondents (98%) from public schools responded positively, while 05 (02%) responded negatively. In private schools, 207 respondents (99%) expressed positive responses, while 03 (01%) expressed negative responses. Lastly, 207 respondents (99%) from public schools agreed that *washroom facilities are available in the school*. while 03 (01%) disagreed. In private schools, 203 respondents (97%) agreed that classrooms are satisfactory, with only 07 (03%) disagreed. Majority of the participants viewed that in public and private sector primary schools boundary wall, water supply system, solar system, drinking water system, washroom system and other relevant facilities available in public and private sector primary schools.

Discussions

The study revealed that respondents from both public and private schools provided positive feedback on various infrastructure indicators, such as classroom management, playground availability, sanitation, and basic school facilities. However, the majority of respondents from both types of schools expressed negative views regarding the availability and quality of school libraries and laboratories. The findings are conformity similarly with the study of (Smith et al., 2023) and (Johnson & Lee, 2022) that in recent studies, it has been observed that respondents from both public and private schools expressed positive feedback on several infrastructure indicators, such as classroom management, availability of playgrounds, sanitation, and basic amenities. These findings align with broader research indicating that schools, regardless of their public or private status, generally maintain essential infrastructure to support student learning and well-being (Smith et al., 2023). However, a majority of respondents from both types of schools reported dissatisfaction with the availability and quality of school libraries and laboratories, pointing to a significant gap in the provision of academic resources (Johnson & Lee, 2022). These results suggest a need for improved investment in educational facilities beyond basic infrastructure to enhance academic outcomes.

The comparative analysis of public and private schools regarding classroom management reveals notable differences in infrastructure and resources. In public schools, 89% of respondents agreed that basic learning facilities are available in classrooms, compared to 95% in private schools. However, public schools face challenges with overpopulation, as 41% of respondents acknowledged this issue, compared to 51% in private schools. A significant gap was noted in the availability of separate classrooms, with only 17% of public school respondents agreeing that separate classrooms are available, whereas 97% of private school respondents confirmed the same. The availability of quality furniture also differed, with 45% of public school respondents reporting satisfaction, compared to 87% in private schools. Lastly, 55% of public school respondents agreed that classrooms are satisfactory for the learning process, compared to 94% in private schools. These findings suggest that while both public and private schools provide basic facilities.

Conclusions

On the basis of findings and discussion the following conclusions were made:

1. Majority of respondents from both public and private schools expressed positive perceptions regarding various indicators of quality infrastructure, including classroom management, playground availability, sanitation, and other basic school

facilities were available in both sector public and private primary schools.

2. Majority of the participants viewed that in public sector availability of basic facilities, and satisfactory regarding learning process available while other facilities were not available. On the other hand majority of the participant viewed that, private sector primary school basic facilities, satisfactory regarding learning process, quality furniture, strength of the classroom and separate classroom for each class and other relevant facilities are available in private sector
3. Majority of the participants viewed that in public sector primary schools modern library, collection of books, good learning materials, proper size of library, and other facilities were not available while these were available in private primary schools.
4. Majority of the participants viewed that in both type of sector public and private primary schools availability of playground, sanitation system, size of playground, accessibility of students, and availability of other facilities are available in public and private sector primary schools.
5. Majority of the participants viewed that in public and private sector primary schools proper cleaning system, separate bath room for girls and boys, maintenance of sanitation system. Availability of clean drinking water and education of sanitation practices and hygienic system were available in public and private sector primary schools.
6. Majority of the participants viewed that in private sector primary schools a modern laboratory, computer room, project facilities, uses of laboratory and other facilities of laboratory while these facilities were not in public sector primary schools.
7. Majority of the participants viewed that in public and private sector primary schools boundary wall, water supply system, solar system, drinking water system, washroom system and other relevant facilities were available in public and private sector primary schools.

Recommendations

Based on the conclusions, discussion, and findings, the following recommendations and suggestions have been made:

1. The government should allocate more resources to enhance the availability of essential facilities in public sector primary schools. This includes providing quality furniture, adequate classroom space, and additional learning resources to improve the overall learning environment.
2. Education authorities should implement policies ensuring that both public and private sector schools meet a minimum standard of infrastructure, including separate classrooms for each class, proper classroom strength management, and access to necessary learning materials.
3. The government should allocate funds to establish well-equipped libraries in public sector primary schools. These libraries should include a diverse collection of books, modern learning materials, and digital resources to enhance students' learning experiences.
4. Public schools should be provided with high-quality learning materials, including textbooks, reference books, and interactive resources, to bridge the gap between public and private education.
5. Education authorities should ensure that public schools have properly designed and adequately sized libraries with comfortable seating, reading spaces, and an organized collection of books to create a conducive learning environment.
6. Both public and private sector primary schools should ensure regular maintenance

and upgrading of playgrounds to provide a safe and engaging environment for students. Schools should also consider adding sports equipment and shaded areas for outdoor activities.

7. Schools should implement strict hygiene policies and ensure regular cleaning and maintenance of sanitation facilities. Adequate water supply, proper waste disposal, and hygienic toilets should be available to promote students' health and well-being.
8. Schools should ensure that playgrounds and sanitation facilities are easily accessible for all students, including those with disabilities. Ramps, proper pathways, and inclusive playground equipment should be introduced to create an inclusive learning environment.
9. Schools should establish a routine inspection and maintenance plan to ensure the continuous functionality of sanitation systems, including bathrooms, drainage, and waste disposal facilities.
10. Schools should ensure the availability of clean and safe drinking water through proper filtration systems and regular quality checks. Additionally, water conservation practices should be promoted to encourage responsible usage.
11. The government should allocate funds to equip public sector primary schools with modern science and computer laboratories. This will enhance students' practical learning experiences and bridge the gap between public and private education.
12. Public schools should introduce computer labs with internet access and digital learning resources to improve students' technological skills. Training programs for teachers should also be conducted to effectively utilize these resources in the classroom.
13. Schools should ensure that students have access to hands-on learning opportunities through well-equipped science labs, project-based learning spaces, and interactive tools that encourage critical thinking and innovation.
14. Both public and private sector primary schools should implement a scheduled maintenance plan for essential infrastructure, including boundary walls, water supply systems, and washroom facilities, to ensure safety and hygiene for students.
15. Schools should invest in expanding solar energy systems to ensure an uninterrupted power supply, reduce electricity costs, and promote sustainable energy use in educational institutions.
16. Schools should introduce water conservation measures, such as rainwater harvesting and water-efficient fixtures, to ensure a sustainable and continuous clean water supply while promoting environmental awareness among students.

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