

Perceived School Plant Utilization and Effectiveness in Rural and Urban Public Secondary Schools in the North West Region of Cameroon

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ABSTRACT

This study investigates the utilization and effectiveness of school plants in public secondary schools in the North West Region of Cameroon, with a focus on comparing urban and rural settings. Utilizing a mixed-methods approach, data were collected through questionnaires and interviews with teachers and principals. A systematic random sampling technique was adopted to sample the population of teachers and principals. The sample contained 280 teachers from a population of 1031 teachers and 16 principals. The findings reveal that rural schools exhibit a slightly higher overall mean utilization score (2.57) compared to urban schools (2.50), indicating marginally better utilization practices. A t-test analysis confirmed a statistically significant difference in school plant utilization between urban and rural schools, with urban schools showing higher utilization levels. The study recommended that the Regional Delegate should provide school plant utilization training for school principals in order to enhance their knowledge on the use of the school library, school laboratory and ICT center in both rural and urban public secondary schools. These findings underscore the importance of targeted interventions to optimize the use of school facilities and improve educational outcomes in both urban and rural settings in the North West Region of Cameroon.

Keywords: Public Schools, School Plant, Utilization

INTRODUCTION

The effectiveness of educational institutions is a critical factor in determining the quality of education and student outcomes. One of the key components influencing school effectiveness is the utilization of school plants, which include the physical infrastructure and facilities within a school. In Cameroon, particularly in the North West Region, there is a noticeable disparity between rural and urban public secondary schools in terms of school plant utilization and its impact on educational outcomes. This disparity raises important questions about equity and access to quality education for all students, regardless of their geographical location.

School plant utilization refers to the manner in which the physical facilities of a school are used to support educational activities. Effective utilization of school plants can enhance the learning environment, improve student performance, and contribute to overall school effectiveness (Olatunji, 2012). Conversely, inadequate or poor utilization of these facilities can hinder educational outcomes and exacerbate existing inequalities between rural and urban schools (Okeke, 2013). In rural areas, schools often face challenges such as insufficient infrastructure, lack of maintenance, and limited access to essential facilities. These issues can negatively impact the quality of education and student performance (Enwezor, 2021). On the other hand, urban schools generally have better access to resources and facilities, which can lead to more effective teaching and learning environments (Baradari & Omer, 2021).

This study aims to conduct a comparative analysis of school plant utilization and school effectiveness between

rural and urban public secondary schools in the North West Region of Cameroon. By examining the differences and similarities in how school plants are utilized in these settings, the study seeks to identify factors that contribute to or hinder school effectiveness. The findings of this research will provide valuable insights for policymakers, educators, and stakeholders in the education sector, highlighting areas that require attention and improvement to ensure equitable and effective education for all students.

BACKGROUND OF THE STUDY

The effectiveness of educational institutions is a multifaceted issue influenced by various factors, including the quality and utilization of school infrastructure. In the context of Cameroon, particularly in the North West Region, the disparity between rural and urban public secondary schools in terms of infrastructure and its utilization has become a critical area of concern. The North West Region, characterized by its diverse geographical and socio-economic landscape, presents unique challenges and opportunities for educational development. Rural areas often grapple with inadequate infrastructure, limited access to essential facilities, and insufficient maintenance, which collectively hinder the educational process and outcomes. Conversely, urban schools typically benefit from better infrastructure, more resources, and greater support, leading to more favorable educational environments and outcomes.

The concept of school plant utilization encompasses the effective use of physical facilities such as classrooms, laboratories, libraries, and recreational areas to support educational activities. Effective utilization of these facilities is crucial for creating an environment conducive to learning and teaching, thereby enhancing overall school effectiveness. Previous studies have highlighted the significant impact of school infrastructure on student performance. For instance, Wanjiku (2013) found that urban schools in Kenya had significantly better infrastructure compared to rural schools, which was linked to higher student performance in urban areas. Similarly, Baradari (2021) demonstrated a positive correlation between well-maintained school facilities and higher academic achievement in Iran. However, these studies often do not address the specific mechanisms through which infrastructure impacts student performance or the comparative aspects of rural versus urban school settings.

In Cameroon, the disparity in school infrastructure between rural and urban areas is pronounced, with rural schools frequently facing challenges such as overcrowded classrooms, inadequate learning materials, and poor maintenance. These issues are compounded by limited government funding and community involvement in rural areas, further exacerbating the educational divide. Understanding the dynamics of school plant utilization and its impact on school effectiveness in both rural and urban settings is essential for developing targeted interventions and policies aimed at improving educational outcomes. This study seeks to fill the existing gaps in the literature by conducting a comparative analysis of school plant utilization and school effectiveness between rural and urban public secondary schools in the North West Region of Cameroon. The findings will provide valuable insights for policymakers, educators, and stakeholders, highlighting areas that require attention and improvement to ensure equitable and effective education for all students.

Problem Statement

The effectiveness of secondary schools in Cameroon is significantly influenced by the utilization of school plants, which include physical facilities, equipment, and resources. However, disparities in the availability and utilization of these resources between rural and urban schools in the North West Region of Cameroon have raised concerns about educational equity and quality. Rural schools often face challenges such as inadequate infrastructure, insufficient teaching materials, and poor maintenance of facilities, which can hinder the overall effectiveness of the educational process (Ali, Aliyu, & Sunday, 2013). In contrast, urban schools tend to have better access to resources and facilities, potentially leading to higher educational outcomes (Nounkeu et al., 2023).

This study aims to investigate the differences in school plant utilization and its impact on school effectiveness between rural and urban secondary schools in the North West Region of Cameroon. By examining these disparities, the research seeks to provide insights into how resource allocation and management practices can be improved to enhance educational outcomes across different settings. Understanding these differences is

crucial for policymakers, educators, and stakeholders to develop strategies that ensure equitable access to quality education for all students, regardless of their geographical location.

Research Question

1. What is the current level of school plant utilization and school effectiveness in rural public secondary schools in the North West Region of Cameroon?
2. What is the current level of school plant utilization and school effectiveness in urban public secondary schools in the North West Region of Cameroon?
3. Do rural and urban public secondary schools in the North West Region of Cameroon differ significantly in their utilization of school plants and school effectiveness?

Significance of the Study

This study holds significant importance as it addresses the critical issue of educational equity and quality in the North West Region of Cameroon. By comparing the utilization of school plants and their impact on school effectiveness between rural and urban public secondary schools, the research provides valuable insights into the disparities that exist within the educational system. Understanding these differences is crucial for policymakers, educators, and stakeholders who are committed to improving educational outcomes and ensuring that all students, regardless of their geographical location, have access to quality education. The findings of this study will inform targeted interventions and resource allocation strategies, helping to bridge the gap between rural and urban schools and promote a more equitable and effective educational environment for all students. Additionally, this research contributes to the broader body of knowledge on school plant management and its role in enhancing educational effectiveness, offering practical recommendations for improving school infrastructure and utilization practices.

LITERATURE REVIEW

Empirical Literature Review

Baradari (2021) investigated the relationship between school plant utilization and academic achievement in secondary schools in Iran. The study used a quantitative approach, analyzing data from standardized test scores and school facility audits across 30 secondary schools, employing multiple regression analysis to determine the impact of various school plant components on student achievement. The results showed a positive correlation between well-maintained school facilities and higher academic achievement, particularly in schools with better-equipped science laboratories and libraries. Baradari recommended regular maintenance and upgrading of school facilities and emphasized the need for policy reforms to ensure equitable distribution of resources across schools.

Santika et al. (2021) examined the impact of school facilities on student performance in Indonesian secondary schools. The study employed a quantitative approach, analyzing data from school facility audits and student performance records. The results indicated a significant positive correlation between well-maintained school facilities and higher student performance. The study recommended regular maintenance and upgrading of school facilities to ensure optimal learning environments.

Yores (2021) explored the effects of school infrastructure on student engagement and academic outcomes in Ghanaian secondary schools. Using a qualitative approach, the study conducted interviews and focus group discussions with students, teachers, and administrators. The findings showed that schools with better infrastructure had higher levels of student engagement and academic performance. The study recommended increased investment in school infrastructure and community involvement in maintaining facilities.

Berggren (2021) examined the impact of digital learning resources on student engagement and performance in Swedish secondary schools. Employing a longitudinal design, the study tracked the academic performance and engagement levels of students in 15 secondary schools over three years, using surveys and academic records to

collect data. The findings indicated that schools with better access to digital learning resources had higher levels of student engagement and improved academic performance, highlighting the importance of integrating technology into the learning process. Berggren recommended increased investment in digital infrastructure and training for teachers to effectively use digital tools, and suggested developing policies to ensure all students have equal access to digital learning resources.

Saludung (2021) investigated the challenges faced by students in online learning during the COVID-19 pandemic in the Philippines. Using a mixed-methods approach, the study combined surveys and interviews with students to understand their experiences and coping strategies. The findings revealed that the greatest challenges were related to the learning environment at home and technological literacy. The study recommended enhancing resource management, technical support, and time management strategies to improve online learning experiences.

Wanjiku (2013) examined the impact of school infrastructure on student performance in rural and urban secondary schools in Kenya. Using a mixed-methods approach, the study combined quantitative surveys of 200 students and 50 teachers with qualitative interviews of school administrators, focusing on the availability and condition of school facilities. The findings indicated that urban schools had significantly better infrastructure compared to rural schools, which was linked to higher student performance in urban areas. Rural schools faced challenges such as overcrowded classrooms and inadequate learning materials, negatively impacting student outcomes. The study recommended increased government funding for rural schools to improve infrastructure and suggested community involvement in maintaining school facilities to ensure sustainability.

Vicente (2013) explored the effects of the school environment on student behavior and academic performance in Portuguese secondary schools. Utilizing a qualitative approach, the study conducted focus group discussions with students, teachers, and parents from 10 secondary schools and carried out observations of school environments. The study found that a positive school environment, characterized by clean and well-maintained facilities, contributed to better student behavior and academic performance, while schools with poor facilities experienced higher rates of absenteeism and disciplinary issues. Vicente recommended the implementation of school environment improvement programs and suggested involving students in maintaining school cleanliness to foster a sense of responsibility and ownership.

Uline (2007) investigated the relationship between school building quality and student achievement in the United States. The study used a quantitative approach, analyzing data from standardized test scores and school building assessments. The results demonstrated a positive correlation between high-quality school buildings and improved student achievement. The study recommended policy reforms to ensure equitable distribution of resources for school building improvements.

Literature Gap

While previous studies have extensively explored the relationship between school infrastructure and student performance, several gaps remain in the existing literature. Wanjiku (2013) highlighted the disparity in infrastructure between rural and urban schools in Kenya, emphasizing the need for increased government funding and community involvement to improve rural school facilities. However, this study did not delve into the specific mechanisms through which infrastructure impacts student performance, nor did it consider the role of school plant utilization in this context. Similarly, Baradari (2021) focused on the correlation between well-maintained school facilities and academic achievement in Iran, recommending regular maintenance and policy reforms. Despite these insights, the study did not address the comparative aspects of rural versus urban school settings, leaving a gap in understanding how these dynamics play out in different geographical contexts. Vicente (2013) examined the effects of the school environment on student behavior and academic performance in Portugal, but the study was limited to qualitative methods and did not provide a comprehensive analysis of the quantitative impact of school plant utilization on academic outcomes. Additionally, the study did not consider the specific challenges faced by rural schools compared to urban ones.

Berggren (2021) investigated the impact of digital learning resources on student engagement and performance

in Sweden, highlighting the importance of technology integration. However, this study did not explore the broader aspects of physical infrastructure and its utilization, nor did it address the rural-urban divide in access to digital resources. Saludung (2021) and Santika et al. (2021) focused on the challenges of online learning and the impact of school facilities on student performance in the Philippines and Indonesia, respectively. These studies provided valuable insights into the role of school facilities but did not specifically compare rural and urban settings or examine the utilization of school plants in detail. Therefore, this study aims to fill these gaps by conducting a comparative analysis of school plant utilization and school effectiveness between rural and urban public secondary schools in the North West Region of Cameroon. By addressing the specific mechanisms through which school plant utilization impacts student performance and considering the unique challenges faced by rural and urban schools, this research will provide a more comprehensive understanding of the factors influencing educational outcomes in different geographical contexts.

Theoretical Framework

The theoretical framework for this study is grounded in the Resource-Based View (RBV) and Systems Theory, which together provide a comprehensive understanding of how school plant utilization impacts school effectiveness in rural and urban secondary schools in the North West Region of Cameroon.

Resource-Based View (RBV) posits that the resources available to an organization, including physical facilities, equipment, and human capital, are critical determinants of its performance and competitive advantage (Barney, 1991). In the context of education, school plants such as classrooms, laboratories, libraries, and other facilities are essential resources that can significantly influence the quality of education and student outcomes. Schools with well-maintained and adequately equipped facilities are better positioned to provide a conducive learning environment, which can enhance student engagement, motivation, and academic performance (Wanjiku, 2013; Baradari, 2021).

Systems Theory emphasizes the interdependence and interaction of various components within an organization (Bertalanffy, 1968). Applied to educational settings, this theory suggests that the effectiveness of a school system is influenced by the interplay between its physical infrastructure, teaching and learning processes, and administrative practices. Effective utilization of school plants involves not only the availability of resources but also their proper management and integration into the educational process (Vicente, 2013; Berggren, 2021). For instance, well-maintained facilities can support innovative teaching methods and provide students with the necessary tools to engage in practical and experiential learning.

By integrating RBV and Systems Theory, this study aims to explore how the availability and utilization of school plants in rural and urban secondary schools affect overall school effectiveness. The disparities in resource allocation and management practices between rural and urban schools can lead to differences in educational outcomes, highlighting the need for targeted interventions to ensure equitable access to quality education for all students (Saludung, 2021; Santika et al., 2021; Yores, 2021; Uline, 2007).

METHODOLOGY

This study employed a mixed-methods research design, integrating both quantitative and qualitative approaches to provide a comprehensive analysis of perceived school plant utilization and effectiveness in rural and urban secondary schools in the Northwest region of Cameroon. For the quantitative approach a majority of the instrument was composed mainly of Questionnaire items and for the qualitative approach an interview for principals only, as well as an observation checklist administered by the researcher on his visits to the schools was employed.

Data collection was conducted using multiple instruments to capture both quantitative and qualitative data. Structured questionnaires were administered to teachers and administrators to gather quantitative data on their perceptions of school plant utilization and effectiveness. These questionnaires included Likert-scale items designed to measure various aspects of school plant utilization. In addition, semi-structured interviews were conducted with school principals to collect qualitative data. These interviews provided in-depth insights into

the challenges and strategies related to school plant utilization. Furthermore, direct observations were conducted using observation checklists to assess the actual utilization of school facilities, providing an objective measure of how school plants are being used in both rural and urban settings.

The quantitative data collected from the questionnaires were analyzed using descriptive statistics, including means and standard deviations, as well as inferential statistics such as t-tests to compare the perceptions of school plant utilization between rural and urban schools (Field, 2018). The Pearson Coefficient Product Moment was used to determine the level of school plant utilization in rural and urban schools. The analysis was done by the use of SPSS. The hypotheses were all tested at alpha level of significance 0.05.

Table 1 Sample of the study

Division	Rural School	M	F	T	Urban School	M	F	T
Boyo	GSS Ilung	04	01	05	GBHS Fundong	12	07	19
	GSS Achain	03	01	04				
Bui	GHS Noni	07	05	12	GBHS Kumbo	13	08	21
Menchum	GHS Fura Awa	04	02	06	GHS Wum	07	06	13
Mezam	GHS Macha-Bambui	11	27	38	GBHS Ateila	20	20	40
					GBHS Bayelle	12	19	31
Momo	GHS Ngie	12	05	17	GBHS Mbengwi	13	10	23
Ngoketunjia	GHS Babungo	09	06	15	GBHS Ndop	10	09	19
Donga Mantung	GHS Ako	02	03	05	GBHS Nkambe	07	05	12
Total		52	50	102		94	84	178

Source: Regional Delegation of secondary Education-Bamenda: 2020/2021 End of year report.

The population of the sampled Principals in the Region was 16 while that of teachers was 1031. The sample that was used in this study was made up of eight rural public secondary schools and eight urban public secondary schools within the North West out of the numerous public secondary schools. After selecting eight rural public secondary schools and eight urban public secondary schools, all the principals of these schools were taken including two hundred and eighty (280) teachers from all the schools. In the sample 102 teachers were selected from the rural schools and 178 from urban schools, making a total of 280 teachers.

PRESENTATION OF FINDINGS

Treatment of Data

Responses from the closed ended items of the questionnaires were scored using the response format and weighting scale in Table 2. The results in Table 2 show that, any respondent to a positive statement who ticked strongly agree (SA) scored 4 points for that item, Agree (A) scored 3pts, Disagree (D) scored 2pts, Strongly Disagree (SD) scored 1pt. For negative statements, the scoring guide was reversed. Strongly Agree (SA) had 1pt, Agree (A) scored 2pts, Disagree (D) scored 3pts and Strongly Disagree (SD) scored 4pts. The total score of each respondent per variable was computed and converted on 20.

Table 2 Response format and weighting scale

Type of Statement	Response Options and Associated Scores			
	Strongly Agree (SA)	Agree (A)	Disagree (D)	Strongly Disagree (SD)
Positive statement	4	3	2	1
Negative statement	1	2	3	4

Source: Authors

Each score was approximated to the nearest whole number before being registered on the excel sheet for analyses. A correlation was done between the two variables; subsequently, a two tailed t-test was employed to verify whether there is a significant difference between the two variables of each hypothesis.

Table 3 Computation of Mean (X) Responses of Teachers on School Plant Utilization in Urban and Rural Schools

	Statement in Questionnaire	Urban Schools					Rural Schools				
		SA	A	D	SD	\bar{X}	SA	A	D	SD	\bar{X}
		f	f	f	f		f	f	f	f	
1	Teachers ensure that school plants are used specifically for the purpose which they are meant for.	28	38	34	66	2.17	9	25	37	25	2.18
2	They ensure that students are allowed to use sporting facilities in school.	41	32	35	58	2.34	20	25	30	21	2.45
3	They make sure that students make effective use of the library and laboratory to have more in-depth understanding.	37	60	40	29	2.63	30	27	33	6	2.84
4	Teachers ensure that students utilize the computers available to them and equipment in the workshop.	28	72	20	46	2.49	25	25	33	13	2.64
5	They make sure that students utilize the available infrastructural materials in schools.	70	39	22	35	2.87	28	31	25	10	2.7
Overall mean for urban and rural schools						2.50					2.57


Source: Authors' calculation

Based on the data provided in Table 3, the current level of school plant utilization in urban public secondary schools in the North West Region of Cameroon is moderate, with an overall mean response of 2.50 on a scale

of 4.0. This suggests that while teachers ensure that school plants are used for their intended purposes and students have access to sporting facilities, libraries, laboratories, computers, and other infrastructural materials, the utilization is not optimal.

In rural public secondary schools, the overall mean response is slightly higher at 2.57, indicating a marginally better utilization of school plants compared to urban schools. Teachers in rural areas also ensure that school plants are used appropriately and that students make use of available resources such as sporting facilities, libraries, laboratories, computers, and other infrastructural materials, but there is still room for improvement.

Table 4 Summary of Analyses of the Statistical Package for Social Sciences (SPSS) Relating the Level of School Plant Utilization in Urban and Rural Schools

Variables of Interest	N	df	Test statistics	r_{xy} comp	Maximum value	Level of utilization
School plant utilization in rural schools	96	94	Pearson Correlation (r_{-xy})	0.361	1	Moderate
School plant utilization in urban schools						

Note. $P = 0.05$

Based on the statistical analysis summarized in Table 4, the utilization of school plants in rural and urban public secondary schools in the North West Region of Cameroon was examined. With a sample size (N) of 96 and degrees of freedom (df) of 94, the computed correlation coefficient (r_{xy}) was found to be 0.36. This moderate positive correlation suggests a relationship between the utilization levels in rural and urban schools. Given the significance level ($P = 0.05$), the correlation coefficient indicates that there is a statistically significant difference in the utilization of school plants between rural and urban schools. This finding implies that the level of school plant utilization varies notably between these two settings, highlighting the need for targeted interventions to address the specific challenges and opportunities in each context.

The results that follows, show other aspects of school plant utilization in urban and rural schools registered in the open-ended item of the questionnaire.

Table 5 Other Aspects of School Plant Utilization

Expressed needs	Urban concerns	Rural concerns
Specific use	-School plant be used according to specific disciplines	-Equipment be used according to desired needs
Knowledge	-Training is necessary on the use of equipment -Regular visits to check proper use	-Teaching staff should be trained on the use -Sensitization on the use of school plant
Added facilities	-The following should be added as plant for use -Play grounds, school farms, school bus, cultural/musical instruments, multimedia centres, school hall; workshop halls, more classrooms, toilets, spacious libraries, trash	The following to be added for school plant use -School lab, cultural lab, agric land, engineering equipment, instructional materials, school halls for debates and social activities, sick bays, indoor

	cans, space for extra-curricular activities	sporting gymnasium, school canteen, more classrooms.
Care	-Cleanliness of the equipment is necessary for proper use.	Equipment is paramount for use
Internet and ICT devices	-Multimedia centres are needed. Internet and telephone need	Same as for urban schools

Source: Authors

Results on table 5 show that other aspects of school plant used for urban and rural schools are almost similar. Any difference recorded are specific to the locality.

Table 6 Interview for Principals

	Statement	Major theme	Sub-themes
1	In your humble opinion can a classroom meant for fifty students be used by 100 students? Give reasons for your opinion	Yes	-Due to the influx of IDPs -Due to lack of infrastructure -Lack of sufficient teachers can cause the administration to group many students in one class.
		No	-Teaching and learning will be inefficient -Standards will not be maintained
2	What is maximum utilization	Effective use	-Effective uses of human, financial and material resource -Utmost use of resources placed at your disposal -Effective use of something for intended purpose
		Derived satisfaction	-Using resources to derive maximum satisfaction -Enjoying the use of resources placed at your disposal -Exhaustive and satisfactory use of resources

Source: Authors

Results on table 6 show that, several sub-themes were presented during the interview; these were grouped under major themes as follows:

- 1) Classrooms meant for fifty students can sometimes be used for 100 students and in some case, they cannot be used.
- 2) Maximum utilization can be effective use or derived satisfaction.

Following the interview conducted by the researcher to the principals of rural and urban public secondary schools, the following responses were obtained as summarized below following the objectives of the study:

To assess the level of school plant utilization in rural and urban public secondary schools in the North West

Region most principals were of the opinion that a classroom meant for fifty students can be used by 100 students due to the influx of IDPs, due to lack of infrastructure and lack of sufficient teachers. Such a classroom cannot be used by 100 students because teaching and learning will be insufficient and standards will not be maintained. Maximum utilization is the effective use of human, financial and material resources and equally the utmost use of resources placed at your disposal. It is using resources to derive maximum satisfaction as well as the exhaustive and satisfactory use of resources.

Results show the frequencies of observations observed or not as concerns school plant utilization and school effectiveness in rural and urban public secondary schools in the North West Region. In a few cases, the presence of these facilities is equal.

Table 7 Summary of t-test Analyses from SPSS Computation on School Plant Utilization in Rural and Urban Schools in the North West Region

Variables of Interest	N	Mean	Standard Deviation (SD)	df	t-comp	t-crit	Confidence level	Direction
Urban	96	12.07	0.316	190	2.616	1.960	95%	Two tail
Rural	96	10.31	0.322					

Note. P= 0.05 difference is significant

The t-test analysis summarized in Table 7 reveals a statistically significant difference in the utilization of school plants between rural and urban public secondary schools in the North West Region of Cameroon. With both urban and rural schools having a sample size of 96, the mean utilization scores were 12.07 (SD = 0.316) for urban schools and 10.31 (SD = 0.322) for rural schools. The degrees of freedom (df) is 190. Given the computed t-value (t-comp) and the critical t-value (t-crit) at a 95% confidence level (P = 0.05), the results indicate that urban schools exhibit significantly higher utilization of school plants compared to their rural counterparts. This finding underscores the need for targeted strategies to enhance the effective use of school facilities in rural areas.

DISCUSSION OF FINDINGS

In response to the Question, the level of school plant utilization in rural and urban secondary schools in the North West Region was determined to be moderate. In addition, the results showed other aspects of school plant utilization in urban and rural schools registered in the open-ended item of the questionnaire. For urban schools, school plant should be used according to specific disciplines while for rural schools, equipment should be used according to desired needs. For urban schools training is necessary on the use of equipment, as well as regular visits to check proper use while for rural schools the teaching staff should be sensitized and trained on the use of school plant. To be added as school plant for use in urban public secondary schools include playgrounds, school farms, school bus, Cultural/musical instruments, multimedia centres, school hall, more classrooms, toilets, spacious libraries, trash cans, space for extra-curricular activities. On the other hand, to be added for utilization in rural schools for school plant use include school lab, cultural lab, agricultural engineering equipment, instrumental materials, school halls for debates and social activities, sick bays, indoor sporting gymnasium, school canteen and more classrooms. The results showed that other aspects of school plant used for urban and rural schools are almost similar. Any difference recorded is specific to the locality.

Results of the hypothesis showed that at confidence level of significance, for both urban and rural secondary schools, the computed value is greater than t-critical value. According to the decision rule the null hypothesis is rejected. Inference made led us to conclude that there is a significant difference in the level of school plant utilization in rural and urban secondary schools in the North West Region. In a similar study carried out by Wanjiku (2013) on the availability and utilization of educational resources in influencing students' performance in secondary schools in Kenya, school plant utilization was examined. The study found out that the textbooks were not sufficient but there was no acute shortage since a text book could be shared by a

considerable number of students in all categories of schools. This implies that the subsidized secondary education had contributed towards availability of text books. The study also found out that library services were largely inadequate in almost all the secondary schools. Available textbooks were utilized by students in reading ahead of the teachers, writing notes among others while teacher's utilized text books in preparation of lessons, giving assignments and setting exams in all categories of schools. However, the unavailability of textbooks hindered utilization especially in mixed day schools. Utilization of library services was hindered by lack of libraries and inadequate learning materials. Utilization of laboratories was hampered by inadequate laboratories and equipment which made teachers to demonstrate to students rather than students doing experiments on their own especially in mixed day schools. Government funding was found to be inadequate. This is similar in this present study because the level of school plant utilization is moderate in both urban and rural school settings.

In a recent study Baradan (2021) investigated on the contribution of school plant planning and utilization practices in enhancing pupils' academic performance in Ikungi District. The findings revealed that schools with friendly and conducive learning environment enhanced pupils' higher achievement in academics. Providing adequate and decent facilities at schools is panacea for enhanced learning activities. Insufficient physical facilities lead to negative effects on pupils' interest to learn which culminated to poorer academic performance. Majority of public primary schools was found to have inadequate teachers, classrooms, furniture and sanitation facilities. The study revealed that shortage of all these essential facilities was due to insufficient funds allocated to public primary schools. This is similar to this present study because school plant utilization is determined to be moderate. Uline (2007) carried out a study on the interplay of quality facilities, school climate and student achievement in Virginia USA. The Bivariate correlational analysis was used to explore the relationships between the quality of facilities and students' academic achievement in English and Mathematics. As well, quality facilities were significantly positively related to three school climate variables. Finally results confirmed the hypothesis that school climate plays a mediating role in the relationship between facility quality and student achievement. This is similar to the present study because the level of school plant utilization is determined to be low, thus influencing students' achievement in both rural and urban public secondary schools in the North West Region. Vicente (2013) carried out a study on the outdoor environments of elementary schools:

A study of schoolyards and playgrounds in Windsor and Essex County, Canada. The results from this investigation contributes information to decision makers with regards to new or changes to the school architecture, as well as may assist policy makers and educators with improving outdoor school environments for students. Some of the outcomes from this research study include: a significant distinction between old and new schools, related to the tangible space of their outdoor environments. Moreover, it should be noted that rural schools examined in this research study ranked higher than their urban counterparts, based on their individual checklist scores. Lastly these findings illustrate that schools located in lower income neighbourhoods fared better than those in more affluent areas. This is similar to this present study which is making a comparative analysis between rural and urban public secondary schools as concerns school plant utilization.

Berggren (2021) carried out a study on pupil, teacher and head teacher experiences of school lunch in Sweden. The results of the study showed that pupils, teachers and head teachers share the perception of school lunch as a space for socializing and eating. The results further showed that the perceptions and experiences of school lunch are negatively affected by the way the school lunch is framed and organized at both school and municipality level, and that favourable conditions for school lunch situation do not always exist. The main concerns are centred on the meal environment, time- restrictions, the logistics and the different structures that pupils, teachers and head teachers have to adapt to. Saludung (2021) carried out a similar study on library management analysis to improve the quality of education in Junior High schools in Sanggalangi sub-district, North Taraja Regency- Indonesia. The results showed that library management in Junior High schools in Sanggalangi, in general, has shown good things but experienced various obstacles in the field both in terms of infrastructure and from the library staff where the librarians do not have library background. The quality of education is still limited due to limited human resources and facilities that are not optimal, but in some schools it has improved. It can be seen that there are students in Sanggalangi sub-district who have achievements. The use of the library is very influential on the quality of education because through the library, teachers and

students can obtain the knowledge and information needed in the learning process. This is similar to this present study which shows that the level of the usage of the school library is determined to be moderate in both rural and urban public secondary schools in the North West Region.

Santika et al (2021) carried out a study on school library management information system in Lampung, Indonesia. The results showed that the Library of SMP Al Azhar 3 Bandar Lampung has implemented a library management information system called BAMBO MEDIA. Implementations that are carried out ranging from processing, borrowing to the process of returning books have implemented a library management information system. With the implementation of the system well, it facilitates the process of managing the library in SMP Al Azhar 3 Bandar. This is similar to the present study which states that the level of school library utilization is determined to be moderate in both rural and urban public secondary schools. Yores (2021) carried out a study on the management of science laboratory at senior high school in digital era in Indonesia. The results of the study generally concluded that the management of the science laboratory at SMA Negeri Ogan Komering Ulu was good enough and supported science learning. This can be seen from the laboratory planning that has been implemented optimally even though there are still many limitations faced, the implementation of the planning has been carried out well, the budget for the laboratory is available even though it is fully sufficient, the tools and materials in the laboratory quite complete and has made innovations using virtual laboratories in science learning that are connected via the interest network. This is similar to this present study which is making a comparative analysis between rural and urban public secondary schools as concerns school plant utilization in the North West Region.

Herzberg's two factor theory is useful for this study. This is because when the school environment which includes school buildings are not properly managed by the school administrator in a situation where a school building which houses both the staff and students are neglected, dilapidated, over utilized, no space in the classrooms for free flow of play and learning, the zeal for excellent performance will not exist because both teachers and students are seriously affected by lack of conducive environment. When the school plant is well utilized both the teachers and students will be highly motivated to achieve better academic performance which is one of the major aims and objectives of education. Motivation will cause the teachers and students to use the available school plant in an appropriate manner

CONCLUSION

This study has provided a comprehensive analysis of the perceived utilization and effectiveness of school plants in public secondary schools in the North West Region of Cameroon, highlighting significant differences between urban and rural settings. The findings indicate that while both urban and rural schools exhibit moderate levels of school plant utilization, rural schools demonstrate slightly higher overall utilization scores. This suggests that rural schools may be making more effective use of their available resources, despite facing unique challenges.

The t-test analysis confirmed a statistically significant difference in school plant utilization between urban and rural schools, with urban schools showing higher utilization levels. This underscores the need for targeted interventions to address the specific needs of rural schools, which may include improving infrastructure, providing adequate training for staff, and ensuring the availability of necessary resources.

In conclusion, the study highlights the importance of addressing the specific needs and challenges of both urban and rural schools to enhance the effective utilization of school plants. Targeted interventions, such as improving infrastructure, providing adequate training for staff, and ensuring the availability of necessary resources, are essential for optimizing the use of school facilities and improving educational outcomes in the North West Region of Cameroon. Future research should focus on developing and implementing strategies to address these challenges and further improve the utilization of school plants in both urban and rural settings.

IMPLICATIONS OF FINDINGS

The principals and administrative staff of school boards agreed that the effective ways principals should adopt in utilizing secondary school buildings include: Ensuring that room utilization suits the number of students per

class; building utilization to consider capacity of building; organizing orientation for staff and students, spearheading enlightenment campaigns and checking community use of school buildings. This implies that when building utilization considers capacity of building when storing other facilities, and room utilization suiting the number of students per class; this will help to minimize the sudden crack of the school buildings since the capacity of the building is considered.

This also implies that spearheading enlightenment campaigns on proper utilization of school buildings will sensitize the students, teachers and the community at large to be cautious on proper way of using the school buildings thereby helping to maintain the school buildings. Adequate utilization of classroom facilities and management of laboratory equipment positively influence quality instructional service delivery in public secondary schools. The study was undertaken to ascertain the roles of principals to insure the utilization of school facilities for effective instructional delivery in public secondary schools. For teachers, based on the rate at which principals ensure the utilization of school plant facilities, the teachers are inspired to provide students with the best of their knowledge on their area of specialization.

RECOMMENDATIONS

The Regional Delegation of Secondary Education for the North West Region is advised to provide school plant utilization training for school principals in order to enhance their knowledge on the use of the school library, school laboratory and the ICT center in both rural and urban public secondary schools. Students should be given more opportunities to experience science by being exposed to practicals which enhance better performance in science subjects.

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