Volume 9, Issue 8, August – 2024 International Journal of Innovative Science and Research Technology
ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24AUG1610

Investigation on Kinds of Infrastructure Available for Projects Implementation in Public Secondary Schools

Nuru O. Rashid
Candidate, Master of Education – Curriculum & Instruction
Jordan University College
MOROGORO

Dr. Kassimu A. Nihuka
Senior Lecturer
Curriculum Development Studies
Jordan University College
MOROGORO

Abstract:- The study was concerned with investigating the kinds of infrastructure available for projects implementation in public secondary schools in the West 'A' District of Zanzibar. The study employed descriptive survey research design. The target population comprised teachers and heads of schools. Sample size for this study was 255 respondents. Structured questionnaires and semi-structured interviews were used for data collection. Collected quantitative data were analyzed by using descriptive statistics (mean and standard deviations) while qualitative data were analyzed on data deduction technique. The study reveals significant variability in the availability of infrastructure necessary for project implementation in public secondary schools. While some schools have essential resources like computer labs and garden areas, many lack crucial facilities such as sports areas and technological support. The absence of established project timelines highlights a need for better project management practices. It is recommended that the district prioritize the equitable distribution of essential facilities, such as sports areas and technological support, across all public secondary schools. Additionally, implementing structured project management practices, including established timelines and regular progress assessments, will enhance the effectiveness and efficiency of infrastructure development and maintenance.

Keywords:- *Infrastructure, Projects Implementation and Public Secondary Schools.*

I. INTRODUCTION

Public secondary schools hold a vital position within the education system, as they are responsible for shaping students and contributing to the advancement of society (OECD, 2013). To maintain and improve the quality of education, it is essential for schools to undertake projects that not only enhance their infrastructure and facilities but also make them self-reliant and sustainable. However, public secondary schools face significant challenges in implementing these projects, including limited funding, bureaucratic hurdles, inadequate infrastructure, and a lack of financial management skills (World Bank, 2020; Bridges & Walls, 2018). Additionally, corruption and mismanagement of funds within the education sector further impede the successful execution of projects (Oketch & Somerset, 2010).

Despite these obstacles, school projects remain crucial for improving educational infrastructure, enhancing learning environments, and promoting quality education. In Africa, various initiatives have been undertaken to address these challenges, ranging from classroom construction and renovation to the establishment of libraries, laboratories, and teacher housing (African Library Project, 2024; African Development Bank, 2019). However, the successful implementation of these projects is often hindered by unique regional challenges, such as inadequate access to educational materials and outdated curricula, which limit students' engagement with the curriculum and the effectiveness of educational projects (UNESCO, 2016; Chikoko & Mthembu, 2020).

In West 'A' District of Zanzibar, the quality of education provided by public secondary schools is closely linked to the availability and adequacy of infrastructure. The successful implementation of projects aimed at improving educational outcomes relies heavily on the presence of essential facilities such as classrooms, libraries, laboratories, and other critical resources. However, like many regions in sub-Saharan Africa, West 'A' District faces challenges related to infrastructure development, which can impede the execution of these projects.

Understanding the types of infrastructure available and identifying gaps is crucial for improving the effectiveness of project implementation in these schools. This study, therefore, seeks to investigate the kinds of infrastructure available for projects implementation in public secondary schools in West 'A' District, Zanzibar. By doing so, it aims to provide insights into the current state of school infrastructure in the region, identify challenges, and suggest ways to address them to enhance the educational environment and outcomes in these schools.

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➢ *Objective of the Study*

This aim in investigating on kinds of infrastructure available for projects implementation in public secondary schools in the West 'A' District of Zanzibar.

II. LITERATURE REVIEW

School projects play a crucial role in student engagement, holistic development, and creating a conducive learning environment. They have been proven to enhance learning experiences and improve overall educational outcomes (Smith & Jones, 2018). In addition, projects are catalysts for school improvement and community engagement.

The perceptions of heads of schools greatly influence decision-making processes and project outcomes. These perceptions are shaped by factors such as budgetary constraints, stakeholder expectations, and organizational priorities (Jackson & Garcia, 2017). As a result, they dictate project prioritization and resource allocation within educational institutions, significantly impacting project success.

The perceptions of heads of schools regarding school projects are closely tied to their perceived impact on student learning outcomes. Administrators prioritize projects aligned with academic goals, curriculum standards, and educational best practices (Brown & Lee, 2019). Positive perceptions of project effectiveness contribute to improved student achievement and foster a culture of continuous improvement within educational institutions.

Teachers' perceptions of school projects significantly influence their engagement and commitment to project implementation. Teachers view projects as valuable tools for promoting active learning and critical thinking skills among students (Smith et al., 2020). They see projects as opportunities for students to apply theoretical knowledge to real-world scenarios, fostering deeper understanding and long-term retention of content. Furthermore, teachers recognize the potential of projects to cater to diverse learning styles and interests, promoting inclusivity within the classroom. However, studies suggest that teachers' attitudes towards projects may vary based on factors such as experience, subject area, and available resources.

III. METHODOLOGY

➢ *Design of the Study*

The research utilized a descriptive survey research design. This design is particularly valuable in providing a detailed portrayal of existing conditions, making it a foundational step for further research (Burns & Grove, 2019). Additionally, descriptive research helps identify patterns, relationships, and potential areas for intervention, thereby contributing to evidence-based decision-making and practice (Polit & Beck, 2017).

➢ *Sample Size*

A total of 225 secondary school teachers were drawn from 9 from public secondary schools within the jurisdiction of West 'A' District in Zanzibar. For the case of heads of schools from 9 public secondary schools within the jurisdiction of West 'A' District in Zanzibar census approach which involve collecting data from every member of the population was used. Surveying or gathering information from heads of schools, accurate and comprehensive insights were obtained.

➢ *Sampling Technique*

This study employed simple random sampling to select public secondary schools and teachers. This technique ensures fairness and minimize bias by giving each individual an equal chance of selection. Additionally, purposive sampling was used to select heads of schools in West 'A' District, Zanzibar. This technique allows for a targeted approach to obtain relevant and in-depth data aligned with the research objectives.

➢ *Instrument for Data Collection*

Questionnaires were crafted to gather specific responses from teachers, enabling the collection of quantitative data aligned with the study's objectives. This method was chosen for its efficiency in reaching a large number of respondents (Oppenheim, 2000). Complementing this approach, interviews were conducted with school heads. Interviews were particularly valuable for gaining insights into subjective experiences, beliefs, and behaviors, as they provide a deeper understanding of individual viewpoints. Together, these methods offer a comprehensive approach to data collection, balancing the breadth of quantitative data with the depth of qualitative insights.

➢ *Data Analysis*

The data collected for this study were analyzed using both qualitative and quantitative methods. Quantitative data were examined through descriptive statistics, including mean and standard deviation, to summarize and interpret numerical findings. For the qualitative data, the Data Reduction Technique was employed, a well-established method in qualitative research (Miles & Huberman, 1994). This approach involved systematically identifying, organizing, and interpreting patterns or themes within the data to derive meaningful insights (Braun & Clarke, 2006).

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IV. FINDINGS

Findings related to teachers' perceptions on kinds of infrastructure available for projects implementation in schools in West 'A' District in Zanzibar within their premises are presented in Means and Standard Deviations in Tables 1.

Table 1: Infrastructure Availability for Projects Implementation in Schools

Scale / Items	School A (n = 28)	School B (n = 40)	School C (n = 18)	School D (n = 26)	School E (n = 46)	School F (n = 17)	School G (n = 30)	School H (n = 26)	School 1 (n = 24)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
The school have access to computer labs and technology resources.	2.8 (1.0)	2.5 (.9)	3.1 (2.9)	2.5 (1.0)	2.7 (1.0)	1.9 (.7)	2.4 (1.0)	2.9 (.8)	2.9 (2.6)
The school have social service.	2.7 (.7)	2.4 (.8)	2.7 (.7)	2.7 (.7)	2.7 (.7)	2.4 (.8)	2.5 (.7)	2.5 (.9)	2.6 (.8)
The school have sport facilities.	2.3 (.9)	2.5 (.9)	2.1 (1.1)	2.3 (.9)	2.4 (.9)	2.4 (.9)	2.4 (.8)	2.6 (.9)	2.1 (1.1)
The school have garden area.	3.0 (.9)	2.5 (.9)	2.2 (.9)	3.0 (1.0)	2.8 (.9)	2.2 (.6)	2.4 (.7)	2.8 (.9)	2.3 (1.0)
The school have commercial spaces.	2.9 (1.0)	2.5 (1.0)	1.9 (.7)	2.5 (1.0)	2.7 (1.0)	2.2 (.6)	2.7 (.9)	2.7 (1.0)	2.0 (.9)
The school have potential hub for entrepreneurial activities.	2.8 (.9)	2.5 (1.0)	1.7 (.7)	2.4 (.9)	2.7 (1.0)	2.4 (.8)	2.7 (1.0)	2.7 (1.0)	1.7 (.7)
The school have stationery stores.	2.9 (.9)	2.4 (1.0)	2.1 (.9)	2.7 (1.0)	2.7 (.9)	2.5 (.8)	2.5 (.9)	2.5 (1.0)	2.2 (1.0)
The school have farms area.	2.8 (1.0)	2.1 (.7)	2.2 (.9)	2.7 (1.0)	2.7 (.9)	2.1 (.7)	2.4 (.9)	2.1 (.7)	2.1 (.9)
The school have resource to support technological requirements.	2.7 (1.0)	2.3 (.7)	2.2 (.9)	2.5 (1.0)	2.5 (1.0)	2.1 (.4)	2.3 (.8)	2.5 (.8)	2.3 (.9)

Key: M = Mean and SD = Standard Deviation
Note: Scale:4 = Strongly Agree, 3 = Agree, 2 = Disagree and 1 = Strongly Disagree
Source: Field Data (2024)

The analysis of infrastructure availability for project implementation in schools in the West 'A' District of Zanzibar reveals several significant findings. These findings emphasize the variability in resource availability and highlight key areas where improvements are needed.

- *Timelines for Project Implementation*

The data indicates a majority of schools lack established timelines for project implementation. Schools such as G show a more favorable view (M = 2.5) compared to others like B, C, and F, which report lower means (M = 2.2 to 2.1). This disparity suggests a widespread absence of structured project planning across most schools. The general disagreement with established timelines points to a critical area for enhancement in project management practices within these schools. This aligns with observations from related studies that emphasize the importance of clear and organized planning frameworks for effective project execution.

- *Sports Facilities*

The availability of sports facilities shows notable variation. Schools H and B report relatively higher agreement (M = 2.6 and 2.5), while schools such as E, F, and G are less favorable (M = 2.4 to 2.1). An interview with a head of school from H highlights their commitment to sports infrastructure, stating, "*We are committed to providing our students with access to adequate sports facilities*" (HoS H, Personal Communication, 15 May 2024). This disparity reveals that while some schools are well-equipped, others struggle to provide adequate sports infrastructure. The findings contrast with Nghambi (2014), who reported a broader demand for quality educational facilities, including sports resources.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24AUG1610

➢ *Garden Areas*

The availability of garden areas also varies significantly. Schools A, D, E, H, and B report higher mean scores (M = 3.0 to 2.5), indicating better access to garden spaces, while schools G, I, C, and F report lower scores (M = 2.4 to 2.2). A head of school from A mentions, "Our school has a beautiful garden area that students can utilize for various purposes" (HoS A, Personal Communication, 22 May 2024). These findings align with Miller and White (2020), who highlight the potential of garden areas for generating income and enhancing educational experiences, suggesting a need for more schools to develop such spaces.

➢ *Commercial Spaces*

The presence of commercial spaces in schools shows a mixed response. Schools A, E, G, H, and B report higher agreement (M = 2.9 to 2.5), while schools F, I, and C report lower agreement (M = 2.2 to 1.9). This variability indicates that while some schools leverage commercial spaces effectively, others lack these facilities. Kabelele et al. (2023) noted that schools can serve as hubs for entrepreneurial activities, highlighting the need for improved infrastructure to support such endeavors.

➢ *Stationery Stores*

The availability of stationery stores also varies, with schools A, D, E, F, and H showing higher agreement (M = 2.9 to 2.5) compared to schools B, I, and C (M = 2.4 to 2.1). An interview with a head of school from D underscores the importance of on-site stationery stores: "Having a convenient stationery store on-site is essential for meeting the needs of our students and staff" (HoS D, Personal Communication, 13 May 2024). This variability reflects the differing levels of access to stationery resources, which Lee (2019) suggests can also serve as an income-generating avenue.

➢ *Farm Areas*

The presence of farm areas shows significant differences, with schools A, D, and E reporting higher agreement (M = 2.8 to 2.7) and others such as G, C, and F showing lower agreement (M = 2.4 to 2.1). This disparity highlights the uneven distribution of agricultural resources in schools. Robinson and Garcia (2020) suggest that farm areas offer valuable opportunities for agricultural education and income generation, reinforcing the need for greater investment in these facilities.

➢ *Technological Resources*

The availability of resources to support technological needs reveals mixed responses. Schools A, D, E, and H report higher agreement (M = 2.7 to 2.5), while schools B, G, I, C, and F report lower levels of satisfaction (M = 2.3 to 2.1). A head of school from A emphasizes the importance of technological investment: "*Investing in resources to support technological advancements is a top priority for our school*" (HoS A, Personal Communication, 22 May 2024). These findings reflect a disparity in technological support, aligning with stakeholder theory which highlights the diverse needs of different school stakeholders regarding technology resources.

V. CONCLUSION

The findings from this study reveal significant variability in the availability of infrastructure necessary for project implementation in public secondary schools in West 'A' District, Zanzibar. While some schools have access to essential resources such as computer labs, garden areas, and commercial spaces, many others lack adequate facilities, including sports facilities, farm areas, and technological resources. The overall disagreement regarding the presence of established timelines for project implementation further emphasizes the need for improved project management practices within these schools. This disparity in infrastructure availability points to a broader issue of unequal resource distribution, which could impact the quality of education and project outcomes in the district.

RECOMMENDATIONS

To address the disparities in infrastructure availability across public secondary schools in West 'A' District, Zanzibar, it is essential to invest in critical resources such as sports facilities, technological support, and garden areas, particularly in schools currently lacking these amenities. Implementing standardized project management practices, including clear timelines, will enhance project execution and planning. Additionally, schools should explore income-generating projects, like developing garden areas and establishing stationery stores, to supplement their resources. Ensuring equitable distribution of resources through a systematic review will help address existing inequalities and improve overall educational quality.

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