



Availability of Physical Infrastructure and Its Influence on the Quality Education in Public Secondary School in Arusha District, Tanzania

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Abstract: *The study assessed the availability of physical infrastructure and its influence on the quality education in public secondary school in Arusha District. This study was grounded in the systems theory by Ludwig von Bertalanffy. The study employed mixed research approach and descriptive research design. The study responded to two research objectives namely to: assess the availability of physical infrastructure in public secondary school and investigate the influence of physical infrastructure on quality education in public secondary schools. Data were collected using questionnaires and interview schedule. The targeted population of 11643 from 33 public secondary schools from which a sample size of 98 (60 students, 30 teachers, 4 school heads and 4 WEOs) respondents from 4 secondary schools, were selected by simple, stratified and purposive sampling techniques. Research experts ascertained the validity of the instruments while reliability was tested and found to correlate at Cronbach coefficient Alpha value of $r= 0.91$ at teachers' and students' questionnaires. Quantitative data were analyzed using descriptive statistics and the results were presented in tables of frequencies and percentages. Qualitative data were thematically coded and analyzed alongside research questions. The findings were presented in narrative forms. The study revealed many schools have no teachers' office, instead they use one of the students' classrooms while classrooms are not enough for students, in some schools teachers are using students' furniture interchangeably. The study recommends parents' involvement in construction of infrastructures, regular maintenance and well equipping strategies for enough infrastructures in distributing resources for infrastructure development.*

Keywords: *Infrastructure, Education, Quality, School, Arusha*

How to cite this work (APA):

Sukurieth, M. A. & Kitula, P. R. Availability of Physical Infrastructure and its Influence on the Quality Education in Public Secondary School in Arusha District, Tanzania. *Journal of Research Innovation and Implications in Education*, 6(3), 400 – 409.

1. Introduction

Quality education has been regarded as a fundamental way to achieve development and growth among nations

worldwide. According to the World Bank Development Report, creating a nation with educated citizens facilitates both individual and national development (World Bank, 2018). However, the delivery of quality education

demands the availability of conducive teaching and learning environment where the physical infrastructures take part. According to Dumont, *et al.*, (2021), schools should have well equipped infrastructures, including bathrooms and classrooms which allow sanitation rather than contamination of diseases. Moreover, if school buildings are prone to be flooded by intensive rains, swept away by high winds, exposed to hazardous materials, or decaying for lack of maintenance, it hinders both teaching and learning, making it harder to produce the level of academic results that are possible in a safe and healthy building.

Despite the necessity of infrastructure, its effects have not paid much yield in terms of quality education. According to Atkin (2019), it is important for the schools to have well improved physical infrastructures since having such infrastructures within and outside the classrooms will make both teachers and students comfortable in the teaching and learning process. The presence of good infrastructures also motivates students to stay in schools as the school environment becomes welcoming and attractive. This raises a necessity and comparable sense to consider educational infrastructure as a significant component to learning and achievement of the students. Therefore, the physical infrastructures should be given due consideration when planning for improving the quality of education offered in the schools. This is because they create friendly learning environment, which enhances students' school attendance, ultimately improving academic achievement (Uline & Moran, 2018).

Despite education being an important impetus for personal and national development, the quality of education offered in public secondary schools in Tanzania has remained a point of discussion for decades due to low academic achievement of the form four students in the national examinations. According to URT (2013) the percentage of students failing the examination has been at a constant increase from the year 2008 to 2012. The decline in the performance of students in national examinations in the country has been linked to the learning environment that is not conducive to learning. Lack of classrooms, toilets, water, and electricity have been pointed out as being the contributing factors for students, especially in public secondary schools not to perform well in the national examinations.

For example, a study conducted by Ngusa (2021) in Tanzania revealed that English language teachers in the country were not in a good position to teach effectively due to the lack of instructional materials. Moreover, HakiElimu (2011) observed a significant difference in the performance of students from private and public secondary schools, whereas the students in private schools outperformed their counterparts in public schools. One of the factors for such differences was the presence of physical infrastructures in private schools which were adequate and in good conditions compared to the ones in

public schools. Similar observations were made by Mosha (2014) who concluded that the quality of education cannot be separated from the context and circumstances that are found in the school. Thus, educational infrastructures, including classrooms, laboratories for science practical and open fields for games are very essential for the delivery of quality education in the secondary schools. It is through these infrastructures where formal and non-formal education takes place at school. Educational infrastructure are general physical things such buildings, which enable learning and teaching process frequently formal and non-formal curriculum oriented activities involved in teaching and learning to take place.

In Arusha District the availability of physical Infrastructure is still a problem though the government has tried to solve the problem of insufficient classroom in the year 2021 through the TCRP 5441 Project, but still more effort is needed for the establishment of more infrastructures such as classrooms, Laboratories, changing rooms for girls students, dormitories and hostels (Cash, 2016). However, most of the schools in Arusha have acute shortages of instructional materials. Particularly, most schools seem to have scarcity of textbooks and reference books and physical facilities such as classrooms, desks and chairs. While acknowledging the government initiatives in providing quality education and increasing access to secondary school education, the academic achievement of the students in Community Secondary Schools are still poor. Therefore this study assessed the availability physical infrastructure and its influence on the quality education in public secondary school in Arusha district.

1.1 Research Questions

1. What are the physical infrastructures available in public secondary school in Arusha District?
2. What is the influence of physical infrastructure on quality education in public secondary school in Arusha District?

2. Literature Review

The theoretical and empirical literature was reviewed with reference to research objectives. This study was grounded in the systems theory introduced in 1933 by Ludwig von Bertalanffy.

2.1 The Systems Theory

The theory argues that an organization such as a school acts as a system with sub-systems whereby each sub-system performs a particular function (Lawrence, 2013). For the whole system to be successful, each part of it should perform its function effectively. The theory also holds that all systems have common elements which

include inputs, process, goals, products and feedback. In the current study, the researcher looked at the presence of the physical infrastructures which make part of the system inputs. The presence of physical facilities including classrooms, desks, tables, toilets, laboratories and changing rooms for female students was assumed to be important for the processes of teaching and learning to take place. Therefore, the study was conducted to determine whether such infrastructures were present and also to determine the extent to which their presence influences the provision of quality education in public secondary schools.

2.1.1 Application of the Theory

The theory is applicable in this study by dividing the whole system into its components. It is easy for a researcher to determine which component of the system is not well functioning. Therefore, in the current study the theory was of an advantage as it allowed the researcher only to concentrate on the availability of physical infrastructures in relation to the teaching and learning process. The theory enabled the researcher to determine whether the available infrastructures allowed the teaching and learning process to take place smoothly.

The major weakness of the theory is that it does not give solutions to the problems. The theory may only identify the component within the system which is not working appropriately but does not give suggestions on what should be taken to improve the performance of such component. Therefore, it requires the application of other theories in finding the solutions for the identified problems. Despite the weakness, the theory helped the researcher to identify whether the presence of physical infrastructures in the public schools influence the delivery of quality education and also based on the results, proper recommendations were made for the purpose of improving the situation.

2.2 Availability of Physical Infrastructure in Public Secondary Schools

Adeyanju (2018) conducted a study to investigate the perceptions of parents towards construction of physical resources in primary school the Nigeria with the targeted population of 450 respondents and cross-section design was applied to the study. The study found that parents and community generally have a significant role in promoting the availability of school resources through construction in case of financial assistance or manpower utilization. The findings by Adeyanju (2018) have shown that it is important for both teachers and students to be supplied with adequate physical infrastructures for effective teaching and learning to take place. However, the study did not indicate how available those facilities in the schools were.

Mabeyo (2016) on his study about the influence of school infrastructure on academic performance in public primary schools in Nzega District Tabora, cross-sectional design was used to get a total sample size of 115 respondents in which simple randomly for the students, purposive technique for teachers as well as educational officers. Mabeyo (2016) argues that there is a shortage of school infrastructure in most of schools such teachers' houses, classrooms, toilets and desks in primary schools this led to the poor academic performance among students in public primary schools. The problem of educational infrastructure in primary schools accelerates to secondary schools and become the alarming issues countrywide. The shortage and conditions of infrastructure in schools are causing miseries in learning and performance of the students.

Fuller (2020) based on his study done in Lesotho under the title Analysis of the Availability of School Facilities and Infrastructure as an Effort to Accelerate School Quality Improvement, whereby study used a qualitative approach with a multisite research design. The total number of respondents was 190 from the targeted population of 2390. The findings were identified as school library as an instructional resource which may significantly influence pupils' achievement after controlling for pupils' family background. He found that effect of library size and its activity have been positive in 15 out of 18 analyses. Also, in his study on the relationship between instructional facilities and academic performance discovered that library correlates with academic achievement and those schools with well-equipped library normally maintain high academic performance.

Thompson (2016) conducted a study based on how students fail science subjects in secondary school in Tanzania. Mixed research design was used to accomplish a sample size of 230 respondents. Interview and questionnaire as well as observation were used as data collection instruments, also simple randomly and judgmental sampling techniques were applied to the study. The findings note that electronically related teaching-learning materials are expensive to purchase, maintain and operate. The findings reveals that the situation is more serious in developing countries, such as Tanzania where a dilemma occurs as to whether to furnish the concerned schools with inputs or arrest some social or economic maladies such as unemployment, diseases or poor communication channels first.

2.3 Influence of Physical Infrastructure on Quality Education in Public Secondary School

Owoeye and Yara (2018) linked performance of students to the provision of adequate physical facilities while referring to a survey of 51 primary schools in Botswana with judgmental and purposive techniques as well as

questionnaire and interviews data collection methods applied during the study. The study found that students performed significantly better on academic tests when they had adequate classrooms, desks and chairs. Owoeye and Yara (2018) succinctly found that school buildings are very vital input to educational system; emphasizing that even though they do not teach but their use may facilitate or impede learning. However, the study found no evidence to show that an expensive school building would necessarily improve academic achievement.

Saeed and Wain (2019) conducted a study in Cameroon about the positive relationship between school administration and school infrastructure towards academic achievement among the students. The study used a targeted population of 4560 from four secondary schools and a sample size of 100 were selected to represent the entire group. Mixed research design was used during the process of data collection together with questionnaire and interview guide. The study found that all facilities must be provided in the schools for the students' better, concrete, and real experiences. Physical facilities help to enhance the learning of the students. Research shows that availability of the physical facilities, including classrooms, water, electricity, boundary wall, toilets, furniture, playgrounds, libraries, and dispensaries have a significant positive influence on the performance of the students and their achievement.

Bakari et al., (2020) carried out a study on effects of physical facilities on performance in Kenya Certificate of Secondary Examination in public schools in Bungoma. The study used 190 sample size with targeted population of 3480 from 7 selected schools, mixed design was also used, selection of respondents based on simple randomly and purposive technique, interviews and questionnaire applied during data collection. The study found that the academic performance of schools with adequate physical facilities has been improving over the years steadily while performance in schools that have inadequate physical facilities, in Kenya Certificate of Secondary Education (K.C.S.E) fluctuated with time despite new reforms and innovations that have been designed and introduced to make education relevant to socio-economic and political aspirations and expectations of the society at large.

3. Methodology

This study adopted descriptive survey design, which helped to describe the availability of physical infrastructures in secondary schools and determine how they influenced the delivery of quality education. The study targeted the heads of public secondary schools, ward education officers, teachers and secondary school students from all the 33 schools located in Arusha district. From the target population of 11643, a sample of 98 respondents was selected using stratified, simple random and purposive sampling techniques. This sample consisted of 4 heads of public secondary schools, 4 Ward Education Officers (WEOs), 30 teachers and 60 students.

Instruments used for data collection included questionnaires and interview schedules. The interview schedule was used to collect data from heads of schools and ward education officers through verbal conversations. Questionnaires were used to collect quantitative data from the students. This instrument had both closed and open ended items delivered from the research questions. Before the process of data collection, the instruments were pilot tested in two schools for the purpose of improving the validity and establishing reliability (Kumar, 2019). The instruments' indicated high level of reliability as the calculated coefficient of 0.91 was obtained from the students' questionnaire. The instruments were then used for data collection and the collected data were analyzed using descriptive statistics and thematic analysis.

4. Results and Discussion

The findings were discussed with regard to research objectives.

4.1 Availability of Physical Infrastructure in Public Secondary Schools

The first objective of this study aimed at finding out the availability of physical infrastructures in public secondary schools in Arusha District. Data to answer this question were collected from students, and teachers. Students and teachers were provided with a rating scale in their questionnaires and requested to indicate the availability of different listed infrastructures in their respective schools. The heads of schools and the Ward Education Officer were interviewed. The responses from students and teachers are presented in table 1.

Table 1: Response from the Students and Teachers on the Availability of Physical Infrastructures in Public Secondary School

Physical infrastructures	Students' responses in %				Teachers' responses in %			
	H	M	L	N	H	M	L	N
Classrooms	46	36	13.3	3.3	26.7	60	13.3	0
Laboratory	26	36	35	2	13.3	53.3	33.3	0
Changing rooms for girl students	25	26	28	12	10	26.7	26.7	36.7
Sports and game grounds	11	25	46	16	6.7	23.3	30	40
Water and Electricity supply	31	26	38	3	10	50	40	0
Availability of enough toilets	35	33	23	8	10	33.3	56.7	0
Tables and chairs	40	12	7	5	16.7	66.7	10	6.7
Staff quarters	41	33	18	7	10	10	56.7	23.3
Enough library materials	20	16	62	2	6.7	26.7	56.7	10
Availability of dormitories and hostels	8	11	30	50	3.3	6.7	26.7	63.3

Source: Field Data (2022) Key: H = High; M = Moderate; L = Low; N = Not available

Data in table 1 show that 28 (46%) of the students indicated that classrooms are available to a high extent, 22 (36%) of them indicated the availability of classrooms is to a moderate extent, 8 (13.3%) of them indicated the availability of classrooms at a low extent and 2 (3.3%) of them indicated that classrooms are not available at all. Responses from teachers indicate that 26.7% reported that classrooms are available to a high extent, 60% of them indicated the availability of classrooms is to a moderate extent while 13.3% of them indicated the availability of classrooms at a low extent. The findings imply that most students and teachers who participated in the study indicated that classrooms are available in their schools. Thus secondary schools in Arusha districts have played a big role to ensure the availability of classrooms, despite the few challenges. The availability of classroom simplifies the learning process as most of the external factors may be reduced. This observation is in agreement to what was observed by Owoye and Yara (2011) who put forward that students do better in their academics in the presence of adequate classroom.

During the interviews, the head of school A said;

The availability of enough classrooms in school is in low extent compared to the rate of students' enrollment, this causes student's congestion hence, reduce the efficiency of teaching and learning skills and knowledge in secondary schools (Personal interview with Head of school 'A' on 13thMay, 2022).

Results in table 1 also show that 16 (26%) of the students indicated that laboratory are available to a high extent, 22 (36%) of them indicated the availability of laboratory to a

moderate extent, 21 (35%) of them indicated the availability of laboratory at a low extent and 1 (2%) of them indicated that laboratory are not available at all. The findings imply that most of students who participated in the study indicated that laboratory is available in their schools. Thus management of secondary schools in Arusha districts in collaboration with the government has played a big role to ensure the availability of laboratories. The availability of laboratory in each school enhances the learning process thereby improving the quality of education in public secondary school. According to Karaa (2019), laboratories assist students in establishing the relevance of the theory. It brings clarity in the mind of the students regarding in the basic concept of the subject. Practical lessons in the laboratory enable students to understand differences between theory and its application. The views obtained from the interview with Ward Education Office 'W' indicates that;

The availability of school laboratories assists students to learn practically rather than theoretically, it help to acquire learning contents easily. However, it is not available in high extent but to a moderate extent. (Personal interview with Ward Education Office 'W' 12th May, 2022)

Results in table 1 also show that 21 (35%) of the students indicated that toilets are available to a high extent, 20 (33.3%) of them indicated the availability of enough toilets to a moderate extent, 14 (23.3%) of them indicated the availability of toilets to a low extent while 5 (8.3%) of them indicated that toilets are not available at all. On the other hand, 10% of teachers indicated that toilets are available to a high extent, 33.3% indicated the availability

of enough toilets to a moderate extent and 56.7% indicated the availability of toilets to a low extent. The findings imply that most of students and teachers who participated in the study indicated that that Availability of enough toilets is available in their schools. Thus secondary schools in Arusha districts have played a big role to ensure the availability of toilets despite the few challenges. The availability of enough toilets improves school sanitation thereby curbing the chances of disease outbreak. The quality of education in public secondary is therefore enhanced with the availability of enough toilets. Generally, there is need to put up more toilets because yearly, the number of enrollment in public secondary schools have gradually increased.

The correlation information from head of school ‘‘B’’ when interview session was conducted held that;

Schools have a lot of students but the number of toilets available are low compared with the number of student, not only that but also, there are inadequate number of toilets for teachers in secondary schools. (Personal interview with head of school ‘‘B’’ on 13th May 202)

Results from table 1 also show that 5(8%) of the students indicated that availability of dormitories and hostels are available to a high extent, 7(11%) of them indicates the availability of dormitories and hostels to a moderate extent, 18(30%) of them indicated the availability of dormitories and hostels at a low extent and 30(50%) of them indicated that availability of dormitories and hostels is low. From the findings showed that there are inadequate dormitories and hostels in many secondary schools in Arusha District. George (2016) conducted a study in Algeria which found the rate of enrolment for students who come far from the school was 84% when a school was located in less than 1 kilometer away from home. However, students’ enrolment dropped drastically to 25%, when the school was located more than 5 kilometers away

from homes. Therefore, availability of dormitories and hostels would help students coming far away from school.

This shows that lack of hostels in public secondary schools is a serious problem and may negatively affect the learning of students. This was made more evident by the head of school ‘‘D’’ during an interview as indicated as follows;

Inadequacy of hostels and dormitories is another serious problem facing my school. I have so many students because of the free education policy but no dormitories available and the problem causes students truancy to increase day after day’’ (Personal interview with head of school ‘‘D’’ 13th May 2022).

Therefore, there was an agreement in the responses of students, teachers and the heads of schools on the inadequacy of hostel facilities in the public secondary schools in Arusha district and the lack of such facilities are considered to be one of the factors for low performance of students.

4.2 Influence of Physical Infrastructure on Quality Education in Public Secondary School

The second objective of this study aimed at finding out influence of physical infrastructures on quality education in public secondary schools in Arusha District. Data to answer this question were collected from students, and teachers. Students and teachers were provided with a rating scale in their questionnaires and requested to indicate how different listed infrastructures in their respective schools influence Quality Education in Public Secondary School. The heads of schools and the Ward Education Officer were interviewed. The responses from students and teachers are presented in table 2.

Table 2: Response from the Students and teachers on the Influence of Physical Infrastructure on Quality Education in Public Secondary School

Statement on influence	Students’ responses in %					Teachers’ response in %				
	SA	A	U	D	SD	SA	A	U	D	SD
Increase performance	68	31	0	0	0	63.3	30	6.7	0	0
Reduce overcrowdings in the class	50	46	3	0	0	53	40	6.7	0	0
Reduce the rate of truancy among the students	38	45	10	6.7	0	46	36.7	13.3	3.3	0
Increase the rate of enrollment	50	47	1.7	0	0	54	40	3.3	0	0
Control the rate of spread of disease like endemic diseases	60	33.3	1.7	3	1.7	53	33.3	6.7	3.3	1.7
Provisional of good environment studies	66	23	6.7	1.7	1.7	60	33.3	6.7	1.7	1.7
Security and safety	66	25	5	0	3	60	20	10	10	0
Increase teachers morale	46	41	8	1.7	1.7	63.3	26.7	2.7	1.3	0
Effective learning and teaching	51	28.3	6.7	5	8.3	66.7	30	3.3	0	0
Strong relationship between students and teachers	48	28.3	15	1.7	6.6	60	33.3	6.7	0	0

Source: Field Data (2022) Key: SA = strongly agree’ A = Agree; U = undecided; D = disagree; SD = strongly disagree

As shown in table 2, the responses were as follow: most respondents strongly agreed on the increased performance due to availability of Physical Infrastructure. In this regard, 68% of students strongly agreed while 63.3% of teacher confirmed this assertion. Likewise, 31% of students agreed with the statement while 30% of teachers also were in agreement. Physical infrastructures like learning and teaching aids facilitate students' academic performance in different ways such that students' acquired knowledge correspond to the available infrastructure in specific subject. In so far, it create conducive environment for the students and teachers during curriculum implementation as well and non-curriculum activities. The study done by Mwangi (2017) in Migori District, Kenya, suggested that the availability of tangible resources motivate students to learn and perform well academically due to the fact that students gain confidence and mastery mind interns of learning and teaching process. It is their turn.

Similar to the information from the interview done with the Ward Education Officer X, it was reported that;

There is a strong relationship between physical infrastructures like classes, toilets, dormitories, furniture and teaching and learning materials like books. Students tend to perform exemplary well when infrastructure is adequate. (Personal interview with Ward Education Officer "X" on 12th May 2022)

From table 2, the researcher also found that availability of infrastructure reduces overcrowding in the class. In this regard, 30(50%) of students indicated strongly agree, 28(46%) indicated agree with the statement while 2(3%) of the responds were undecided. For teachers, 53% strongly agreed with the statement and 40% agreed while 6.7% were undecided. This shows that the availability of enough physical infrastructures such as classes, tables and chair directly influence quality education. There are high demands of infrastructures like classes, chairs and table in secondary school to cover the gap on incensement of students' enrollment in public school. All this causes and is associated with free basic education policy. According to Handason (2019), in a study conducted in London about the demands of tangible infrastructure towards high learning achievement; several elements were necessary for quality education among them motivated students, well trained teachers using actual learning techniques, adequate facilities and materials, local language curriculum that builds on teachers and learners knowledge and experience, welcoming gender sensitive, health, safe environment that encourage learning and accurate assessment of learning outcomes.

On table 2, it was noted that infrastructure reduce the rate of truancy among the students, whereby 23(38%) indicated strongly agree, 27(45%) of the respondents agreed with the statement, 6(10%) were undecided while 4(6.7%) disagreed with the statement. One of the factors

that cause truancy in secondary school is the nature and environmental situation of the school; the physical facilities as well play vital roles on promotion and maintain of students' psychology. UNESCO (2020) reported that spacious classroom gives the teacher and student good room for interaction. Solid waste disposal system is important in enhancing safe and clean environment as well as truancy reduction in school. There is need for proper management of solid waste disposal in schools because this enhances positive attitude towards personal hygiene and environment.

During the interview, head of school D'' said;

Many students in my school are truancy, especially adolescent girls when it comes to the issues of their period miss attending school due to inadequate changing rooms, for males students become truancy when it comes to the issue of inadequate classes (Personal interview with Head of school D on 13th May 2022).

According to the results from table 2 on Provisional of good environment studies in which 40(66%) of the responders were strong agree, 14(23%) responses agree, 4(6.7%) were undecided, while 1(1.7%) of the respondents indicated disagree as well as 1(1.7%) responses strong disagree with the statement. Good and conducive environment as a major factor that accommodate students in learning and teaching. Conducive environment including the availability of enough learning and teaching materials, availability of extra curriculum activities like sports and games in secondary schools as well as enough electricity and water supply. According to Akande (2018), learning can occur through one's interaction with one's environment. Environment here refers to facilities that are available to facilitate students learning outcome. It includes books, audio visual, software and hardware of educational technology; so also, size of classroom, sitting position and arrangement, availability of tables, chairs, chalkboards, shelves on which instruments for practical are arranged

From the table 2 the researcher tend to know from the respondents on their level of agreement towards the statement which was security and safety, whereby 40(65%) were strong agree, 15(25%) of the rate responders were agree, 3(5%) were undecided while another 2(3%) were strong disagree with the statement. From the findings showed that many respondents agreed that physical infrastructures influence security and safety in secondary school. Use of modern tools and apparatus in laboratories for example reduce number of accidents which happen due to uses of outdated tools and apparatus. Not only that but also uses of modern classroom which facilitate the electricity simplify teaching and learning when materials like projectors become available.

During the interview with Ward Education Officer, the respondent put forth the following views;

Academic achievement among the students based on the availability of clear security and safety within and outside the school, it prepare students psychological well and interaction of learning and teaching contents become well done (Personal interview with Ward Education Officer on 13th May 2022).

Increase teachers morale, another statement provided by the researcher to the respondents whereby 28(46%) were strong agree, 25(41%) of the respondents were agree, 5(8%) were undecided, while 1(1.7%) was disagree and 1(1.7%) was strong disagree. The willingness of teachers towards teaching activities influencing by the rate of resources available since it reduce the uses of lot energy to present the subject content, but when there is high availability of physical learning and teaching facilities, boost teacher morale towards teaching and learning. Similar sentiment were given by Lyons, (2012) who said that learning is a complex activity that puts students' and teachers' motivation and physical condition to the test

Table 2 reviewed the statement mentioned by the researcher to the respondents by indicating their level of agreement on Strong relationship between students and teachers, where 29(48%) indicated strong degree 17(28.3%) indicated agree with the statement 9(15%) indicated undecided 1(1.7%) was disagree and the rest 4(6.5%) were strong disagree with the statement. The findings lie in line with agree segment in which mostly students indicate their level of agreement. Physical infrastructures become a bridge to join between teachers and students during learning and teaching activities in secondary school specifically in Arusha District.

During the interview with Head of school, the respondent reported that;

There is core positive altitude among the students towards the teacher who applies and uses well the available learning and teaching available in the schools. Since it allow students to interact with the subject matter like enough classrooms to conduct learner centered methods such as group discussion (Personal interview with Head of school of school 'A' on 13th may 2022)

Reduce overcrowdings in the class, teacher responded as 16 (53%) were strong agree, 12(40%) were agree 2(6.7%) of the teachers were undecided. Reduce the rate of truancy among the students, responded from the teachers were 14(46%) were strong agree, 11(36.7%) were agree with the statement, 4(13.3%) were undecided while 1(3.3%) of the respondents was disagree level of agreement. Increase the rate of enrollment, in which 17(53%) were strong agree, 12(40%) were agree and 1(3.3%) was undecided. Control the rate of spread of disease like endemic diseases, whereby teachers responded as follow 16(53%) were strong agree 10(33.3%) of the respondents were agree 2(6.7%) were

undecided, while 1(3.3%) was disagree and the last 1(1.7%) was strong disagree. Provisional of good environment studies, furthermore teachers attempt the statement in this way 18(60%) were strong agree 10(33.3%) were agree 2(6.7%) were undecided 1(1.7%) was disagree and 1(1.7%) was strong disagree. Security and safety 18(60%) were strong agree 6(20%) were agree 3(10%) were undecided 3(10%) were disagree. Increase teachers morale 19(63.3%) were strong agree 8(26.7%) were agree 2(2.7%) were undecided and 1(1.3%) was disagree. Effective learning and teaching 20(66.7%) were strong agree 9(30%) were agree 1(3.3) was undecided with the statement and lastly Strong relationship between students and teachers was Strong relationship between students and teachers whereby 18(60%) were strong agree 10(33.3%) were agree 2(6.7%) were undecided.

During the interviews, Ward Education Officer remarked that;

The infrastructures in secondary schools in Arusha District paved the way towards education achievement for students, when there is enough toilets, enough chair and tables, enough classrooms and enough dormitories, all these are catalyst for education achievement (Personal interview with Ward Education Officer on 12th May 2022).

5. Conclusion and Recommendations

5.1 Conclusion

The study has outlined the present status of the availability of educational infrastructure in secondary schools in Arusha district. Form the findings the implication is that there is need for improving educational infrastructure in terms of quantity and quality. Many infrastructures are not in good conditions as revealed by the study. Students and teachers involved in the process of monitoring and evaluation of infrastructure in schools have expressed their reservation on availability of adequate infrastructure and maintenance. The schools management has no well-defined financial budget planning for regular damage preventive and maintenance. Likewise, from the study it was observed that in some schools some furniture was seen scatted unmanaged in school premises.

The findings further highlighted that teachers and students in schools with poor infrastructure lack confidence and self-esteem compared to those schooling in well-equipped quality infrastructure. Due to unattractive and unsafe school environment, some students are not participating in some school activities while in other schools, learning session are conducted fully. This creates education class disparities in the context that graduates in the same level of education have acquired different knowledge due to different levels of availability of infrastructure.

5.2 Recommendations

1. Stakeholders in education urgently need to collaboratively invest and improve secondary schools infrastructure facilities in the country.
2. Policymakers have duty to make sure they enact laws that encourage improvement of school infrastructure. Also policymakers should advise, supervise and make a serious follow up to ensure government allocates appropriate fund for the improvement of the school infrastructure facilities.
3. The policymakers should make sure government is in touch and accountable to laws and quality education provisions that enable students acquire relevant knowledge, skills and attitude, which match with global challenges and the development of the country.

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