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Management of School Resources and Sustainable Development Goal 4 in Public Senior Secondary Schools in Rivers State

Ogbuwa, Hope Nwanne¹, Dr. C. MBA²

¹Department of Educational Management, Faculty of Education, University of Port Harcourt Email: <u>hopeogbuwa@gmail.com</u>, 08037635657 ²Department of Educational Management, Faculty of Education, University of Port Harcourt Email: <u>callistusmba24@gmail.com</u>, 08030667424

ABSTRACT

This study examined the relationship between the management of school resources and Sustainable Development Goal 4 in public senior secondary schools in Rivers State. The study was guided by two (2) objectives with corresponding research questions and null hypotheses. The study adopted a correlation survey research design. The population of the study comprised 7,184 principals and teachers from 291 public senior secondary schools in Rivers State. A sample of 379 respondents was drawn from the entire population using Taro Yamane formula. The instrument for the study was a two set of questionnaire titled: Management of School Resources Scale (MSRS) and Sustainable Development Goal 4 Scale (SDG4S). The instruments were validated and reliability coefficients of 0.83 and 0.85 for MSRS and SDG4S were obtained. Research questions 1-2 were answered using Pearson Product Moment Correlation Coefficient formula, while same correlation statistics were used to test hypotheses 1-2. The results of the findings revealed that there is a very high relationship between the management of classrooms and laboratories as school resources and Sustainable Development Goal 4 in public senior secondary schools in Rivers State. Based on the findings, it was recommended among others that school managers should continuously make emphasis on the management of classrooms to promote quality secondary education which is one of the hallmarks of SDG4 targets. Also, school managers should ensure that science laboratories equipment are well equipped and effectively managed to support students to acquire relevant skills which is one of the targets of SDG4.

Introduction

Over the years, education has become a necessary tool for sustainable national development. This is because it enables one to be acquainted with the appropriate pedagogical skills, knowledge, values and attitude that would make one contribute positively to the development of the society where one belongs. Education is a major factor that helps in stimulating national development. The process of education is to develop the cognitive, affective and psychomotor faculties of individuals and groups to equip them with the knowledge and skills necessary to survive and make society progress.

National Economic Empowerment & Development Strategy (NEEDS) as cited in Fashiku and Yusuf (2019) opines that the goal of wealth creation, employment generation, poverty reduction, and value reorientation can be effectively pursued, attained and sustained only through an efficient, relevant and functional education system. In consonance, Adebakin and Subair (2021) opine that secondary education empowers individual members of the public to attain this level of comfort. When the level of education acquired makes a maximum impact for a long period, then the development is said to be sustainable.

Sustainable Development Goal 4 (SDG 4 or Global Goal 4) focuses on quality education and is among the 17 Sustainable Development Goals established by the United Nations in September 2015. The full title of SDG 4 is to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (United Nations, 2017). SDG 4 has ten targets which are measured by 11 indicators. The seven outcome targets are free primary and secondary education; equal access to quality pre-primary education; affordable technical, vocational and higher education; increased number of people with relevant skills for financial success; elimination of all discrimination in education; universal literacy and numeracy; and education for sustainable development and global citizenship.

SDG 4 aims to provide children and young people (students) with quality and easy access to education, especially at the secondary school level, plus other learning opportunities. One of its targets is to achieve universal literacy and numeracy. A major component in acquiring knowledge and valuable skills in the learning environment. Hence, an urgent need to provide more educational (school) resources and also manage the available ones to provide a safe, inclusive, and effective learning environment for all (UNESCO, 2020). Management of school resources contributes a lot to the school in the realisation of its goals and objectives. It helps the school to deal with the terror of clashes or complexes; thereby guarding schools from facing challenges and competition which today's school administration requires for the attainment of SDG4 (Ezeani, 2022).

Statement of the Problem

Of all the onerous problems facing secondary education, none appears to be as persistent as the one relating to the management of resources. School resources appear limited and need to be properly managed to support educational improvement objectives for the attainment of SDG4. Moreover, reports from the media and the researcher's observations as a result of visits to some schools show that, teachers and students who are school human or personnel resources performed poorly in schools in their tasks because they are poorly taken care of. The teachers lack motivation to teach and perform other classroom/school responsibilities, thereby resulting in students' nonchalant attitudes toward learning and poor performance in both internal and external examination, necessitated by a non-captivating learning environment.

Also, a close observation shows that there is no proper management of schools' financial resources. The dearth of school resources is not always the problem holding public secondary schools back, especially in the attainment of SDG4; in countless situations, it is the nonexistence of a proper management culture. Therefore, the study intends to find out if there is a relationship between the management of school resources and Sustainable Development Goal 4 in public senior secondary schools in Rivers State.

Aim and Objectives of the Study

This study examined the relationship between the management of school resources and Sustainable Development Goal 4 in public senior secondary schools in Rivers State. Specifically, the study sought to achieve the following objectives:

- Ascertain the relationship between the management of classrooms and Sustainable Development Goal 4 in public senior secondary schools in Rivers State.
- 2) Determine the relationship between the management of laboratories and Sustainable Development Goal 4 in public senior secondary schools in Rivers State.

Research Questions

The following research questions will guide the study:

- 1. What is the relationship between the management of classrooms and Sustainable Development Goal 4 in public senior secondary schools in Rivers State?
- 2. What is the relationship between the management of laboratories and Sustainable Development Goal 4 in public senior secondary schools in Rivers State?

1.5 Hypotheses

The following null hypotheses are formulated for the study:

- 1. There is no significant relationship between the management of classrooms and Sustainable Development Goal 4 in public senior secondary schools in Rivers State.
- 2. There is no significant relationship between the management of laboratories and Sustainable Development Goal 4 in public senior secondary schools in Rivers State.

Literature Review

Management

The primary motive of establishing any formal organization is to pursue and achieve a set of predetermined goals and objectives. No matter how sufficiently an organization (whether educational, religious, economic, or political) is supplied with human and material resources without a strong management organ, it is bound to fail. Therefore, management is an essential element in determining the success or failure of any organization. An ineffectively managed school will be a haven for truancy, conflict, delinquency; and poor academic performance thus resulting in general unproductivity in school as well as failure to achieve the overall aim, objectives and goals of education in the long term.

Management involves the control of other persons, overseeing projects, resources and business enterprises. It is the act that involves the coordination of activities of a venture by certain policies and in the achievement of defined objectives. Management is a vital function of school administrations. Peretomode in Nwabueze (2016) defines management as the social or international process involving a sequence of coordinated events such as planning, organizing, coordinating and controlling to use of available resources to achieve desired outcomes in the fastest and most efficient way.

Management has long seen to do with identifying out-of-school objectives, mobilizing the teachers, non-academic staff, students and material resources such as funds, equipment and facilities in the school to achieve the goal of teaching and learning. It is the process of creating a supportive

environment by deciding in advance how to secure the school, how to do it and who is to do it. This includes maintaining, comparing and correcting towards achieving the school goal. Public secondary schools are managed by a principal and vice principal.

A school cannot be deemed to be effectively managed if it seems to be lagging behind in academic performance and instructional delivery. Thus, the instructional delivery of a school usually forms the first parameter with which to judge the level of school management. Management of staff personnel forms the second cardinal leadership responsibility of the school administrator in achieving the school goal. The staff should be handled with care and love for they possess the capability to make or mar the school and its programmes.

Management of Secondary School Resources

Management exists in any institution to make resources fruitful in order that the organization may achieve its objectives (Ezeani, 2022). Management stimulates actions, arranges, coordinates people and material resources for the accomplishment of institutional visions. Onwuchekwa in Ezeani (2022) defined the management of school resources as the organization and utilization of all human and material resources in a particular system for the attainment of acknowledged objectives in the system. Alagboye (2021) is concerned with the prudent utilization and maintenance of human, material, financial and other available resources for the optimal achievement of educational goals and objectives.

Management of school resources in this context refers to the allocation and utilization of the available organisation resources to achieve the organizational goals and objectives. These resources are human, material, financial and information resources. Nwankwo (2020) opined that human resources are truly the highest assets of an organisation, because no matter the amount of capital invested in an organisation, its success or failure depends on the quality of people who plan and execute its programme. Oden (2021) notes that human resource management (HRM) has a big impact on teamwork and consequently affects organisation performance, which has emerged as the central question in the personnel/HRM field. Iyede (2021) views human resource management as the harnessing of the totality of people, skills, energies, talents and latent capabilities to achieve educational objectives in which the management of school records is part and parcel. Hence, human resources refers to stakeholders in educational institutions.

Sustainable Development Goal Four

Sustainable development is mostly regarded as the development that meets the needs of the present without compromising the ability of future generations to meet their own development needs. The United Nations Educational, Scientific and Cultural Organization (UNESCO 2020) concisely expressed that sustainable development is an organizing principle for global development that supports the welfare of both people and the planet. The concept of sustainable development itself has been disputed and variously affirmed with emphasis on different imperatives. It is a critical developmental paradigm for the global community given the various social, environmental and economic challenges facing the world today. There are quite a lot of sustainable development goals in practice in Nigeria, e.g. sustainable development goal 1, goal 2, goal 3 even goal 17. However, this study is anchored on sustainable development goal 4 which is focused on quality equitable and all-inclusive education.

Sustainable Development Goal Four is geared towards all-inclusive and equitable quality education and the promotion of lifelong learning opportunities for all. The emphasis of this goal is worldwide coverage of quality education from preschool through at least secondary education, and then on to more advanced skills training (Sachs as cited in Hanachor & Wordu, 2021). The ambition of the goal is to build a nation that will facilitate a realization of the full potential of each child so that he/she can contribute to building a just, tolerant and egalitarian society. The vision of an inclusive quality education reflects the idea of education for all, principally for those groups who are seen to be vulnerable. Particular emphasis is on equal access to all and lifelong education. It then means that those who lead education in several countries must pay attention to all forms of education, both formal and non-formal (Hanachor & Wordu, 2021).

SDG 4 is therefore a wise decision because education is the bedrock of any society that is willing to open up employment opportunities for all which helps bring out individuals from the shackles of unemployment and poverty; reduces societal inequalities and provides the knowledge and skills needed to live supportive lifestyles. McKeown (2022) posits that an educated citizenry is spirited to employing informed and sustainable development. This essence implies that a national sustainability plan can be put in place to ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes. Hence, the introduction of all-inclusive education can expedite changes in values, world views and behaviour at the level of the individual, the community and society at large (UNESCO, 2021).

Management of Classrooms and Sustainable Development Goal 4

The classroom is an operational venue in schools which holds students together and offers them the opportunity to achieve the purpose of education (Hill & Hill, 2019). It is one of the school material resources where a group of students are taught lessons. Thus, the classroom should be well managed and maintained to bring about a healthy learning environment, relatively free from behavioural problems for a productive learning environment and quality performance. The quality of the physical environment, according to Edwards (2023), affects the performance of teachers as well as that of students. Management of the classroom can be defined as the teachers' ability to co-operatively manage time, space, and students' roles and behaviours to provide a climate that encourages learning (Alberto & Troutman, 2019). Duke (2019) viewed the management of the classroom as the provisions and procedures necessary to establish and maintain an environment in which instruction and learning can occur for the attainment of SDG4.

Management of the classroom to David (2019) involves a positive classroom environment, appropriate standards of behaviours for students, effective management of daily routines and instructions, and engaging the students in classroom activities throughout the lessons to ensure quality secondary education. The emphasis on the management of the classroom therefore is dependent on components such as an engaging curriculum, the teacher as a role model, students as responsible citizens, classroom management skills, robust instruction and working with resistance, conflict and stress.

If any of these components is neglected, the whole process is compromised, leading to poor quality in education. Management of the classroom is the process of enhancing the learning environment, physical interaction between teachers and students, student to student, parents and others, stimulating and motivating children to learn objectives, control and supervision throughout the school to facilitate and encourage cooperation in teaching and learning activities in the classroom smoothly, will as a result, improve the quality of student's performance (Wisetrinthong, et al., 2022).

Management of the classroom includes all the efforts teachers make in the following areas, organizing the students, co-coordinating their activities, monitoring their behaviours, ensuring an effective learning process, providing instruction through interactive communication, getting feedback from learners, preparing and utilizing instructional materials in facilitating learning, maintaining discipline among learners, evaluating learning outcome, ensuring that the problems of above average learners are being solved, relating on one to one basis with learners, being mindful of their basic needs, providing basic information to learners, assisting learners in developing coping skills, providing an exemplary behaviour for learners to imitate, and generating interest among learners as well as reinforcing their performance through motivational techniques for the achievement of sustainable development goal four (Egbule as cited in Osakwe, 2021).

Management of Laboratories and Sustainable Development Goal 4

The laboratory as one of the material resources in the school has been defined as a place where scientific exercises are conducted by the science teachers for the benefit of the students. The laboratory exercises include; experiments and other activities which help the students acquire scientific skills. Ezeliora (2019) defines a science laboratory as a workshop where science is done or where scientific activities are carried out in a conducive environment. She also sees the laboratory can be indoors such as the sufficiently designed and equipped room found in most schools or outdoor involving such places as riverside, workshop, field and even market for carrying out scientific studies. He further stated that whatever the type of laboratory employed in school for science teaching, the same laboratory experience should be managed and attained, that is participation in the series of experimental, observational and demonstrating activities which provide an opportunity for students to develop an understanding of practical and theoretical concepts through solutions of problems.

Ufondu (2019) observes that the laboratory is an indispensable material resource of the school that guarantees effective teaching and learning of science subjects for better academic performance of students as well as the achievement of school goals such as the SDG4.Bayu and Suharsimi (2019) opine that, for the laboratory to be effective in meeting the needs of all girls and boys regarding equitable and quality primary and secondary education leading to relevant and effective learning outcomes which is one of the objectives of SDG4, it requires the best management. The existence of a laboratory is very dependent on its management. A laboratory in a school is important for a school to improve the quality and quality of student education. With a laboratory, it is hoped that students can more easily understand the material being studied while doing the practice. Hence, there is a positive significant relationship between proper management of the laboratory and quality secondary education which is the key point of SDG4 (Bayu & Suharsimi, 2019).

Management of science laboratories is a valuable field of science to improve students or students to improve the quality of education and teaching. In connection with this, all elements involved in the management of the Natural Sciences laboratory must have competencies, namely the abilities, attitudes, and skills that must be possessed and capable of being applied by the Natural Sciences laboratory managers as educational staff in carrying out laboratory management tasks (Vincent et al., 2019). The utilization and management of the science laboratory as a school resource must pay attention to the condition and quality of the facility, because both of these factors can directly influence the educational process and the attainment of a substantial increase in the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship, which is the number four target of SDG4 (Amiruddin-dan, 2021).

Methodology

The study adopted a correlation survey research design. The population of the study comprised 7,184 principals and teachers from 291 public senior secondary schools in Rivers State. A sample of 379 respondents was drawn from the entire population using Taro Yamane formula. The instrument for the study was a two set of questionnaire titled: Management of School Resources Scale (MSRS) and Sustainable Development Goal 4 Scale (SDG4S). The face and content validities of the questionnaire was determined using two experts in Measurement and Evaluation, University of Port Harcourt. The instruments were validated and reliability coefficients of 0.83 and 0.85 for MSRS and SDG4S were obtained. Research questions 1-2 were answered using Pearson Product Moment Correlation Coefficient formula, while same correlation statistics were used to test hypotheses 1-2 using r-ratio at 0.05 level of significance with 366 degrees of freedom.

Results and Discussion

Research Question 1: What is the relationship between the management of classrooms and Sustainable Development Goal 4 in public senior secondary schools in Rivers State?

Variable		Σ	Σ^2	Ν	Df	∑XY	r	Decision
Management	of	10250	2345					
Classrooms (X)								
				368	366	2545	0.87	Very High
								Relationshi
Sustainable		10360	3423					
Development Goa	l Four							
(Y)								

 Table 1: Pearson Product Moment Correlation Analysis on the Relationship between the Management of Classrooms and Sustainable

 Development Goal 4 in Public Senior Secondary Schools in Rivers State.

Source: Researcher's Field Result, 2023

Data on Table 1 presents information on the relationship between the management of classrooms and Sustainable Development Goal 4 in Public Senior Secondary Schools in Rivers State. The observed r. value came out as 0.87. From the scale of measurement, 0.87 falls between 0.80 and 1.00, which resulted in a very high relationship. This result shows that there is a very high relationship between the management of classrooms and Sustainable Development Goal 4 in public senior secondary schools in Rivers State.

Research Question 2: What is the relationship between the management of laboratories and Sustainable Development Goal 4 in public senior secondary schools in Rivers State?

 Table 2: Pearson Product Moment Correlation Analysis on the Relationship between the Management of Laboratories and Sustainable

 Development Goal 4 in Public Senior Secondary Schools in Rivers State.

Variable	Σ	Σ^2	n	Df	∑XY	r	Decision
Management of Laboratories (X)	9703	2213					
			368	366	2665	0.81	Very High
							Relationship
Sustainable	10360	3214					
Development							
Goal Four (Y)							

Source: Researcher's Field Result, 2023

Data in Table 2 presents information on the relationship between the management of laboratories and Sustainable Development Goal 4 in Public Secondary Schools in Rivers State. The observed r. value came out as 0.81. From the scale of measurement, 0.81 falls between 0.80 and 1.00 which resulted in a very high relationship. This result shows that, there is a very high relationship between the management of laboratories and Sustainable Development Goal 4 in public senior secondary schools in Rivers State.

Hypothesis 1: There is no significant relationship between the management of classrooms and Sustainable Development Goal 4 in public senior secondary schools in Rivers State.

Table 9: Transformed r-ratio on the Relationship between the Management of Classrooms and Sustainable Development Goal 4 in public senior
secondary schools in Rivers State.

Variable		Σ	Σ^2	n	df	∑XY	r	r-ratio	z-crit.	Decision
Management Classrooms (X)	of	10250	2345							
				368	366	2545	0.87	34.58	1.96	Sig.
										Rejected H ₀
Sustainable Development Four (Y)	Goal	10360	3423							

Source: Researcher's Field Result, 2023

Data in Table 9 reveal that a very high relationship exists between the management of classrooms and Sustainable Development Goal 4 in public senior secondary schools in Rivers State. To establish the significance of the relationship, the r-ratio was computed and an index of 34.58 was obtained. This was compared to the critical z-value of 1.96 at the 0.05 level of significance with a degree of freedom of 366, indicating that there is a significant relationship between the management of classrooms and Sustainable Development Goal 4 (calculated z = 34.58>critical z = 1.96 at p < 0.05 and df = 366). Therefore, the null hypothesis of no significant relationship between the management of classrooms and Sustainable Development Goal 4 is rejected in favour of the alternative that, there is a significant relationship between the management of classrooms and Sustainable Development Goal Four in public senior secondary schools in Rivers State.

Hypothesis 2: There is no significant relationship between the management of laboratories and Sustainable Development Goal 4 in public senior secondary schools in Rivers State.

Table 10: Transformed r-ratio on the Relationship	between the Management of	f Laboratories and Sustainal	ble Development Goal 4 in public
senior secondary schools in Rivers State			

Variable		Σ	Σ^2	n	df	∑XY	r	r-ratio	z-crit.	Decision
Management Laboratories (X)	of	9703	2213							
				368	366	2665	0.81	29.05	1.96	Sig.
										Rejected H ₀
Sustainable Development Four (Y)	Goal	10360	3214							

Source: Researcher's Field Result, 2023

Data in Table 10 reveal that a very high relationship exists between the management of laboratories and Sustainable Development Goal 4 in public senior secondary schools in Rivers State. To establish the significance of the relationship, the r-ratio was computed and an index of 29.05 was obtained. This was compared to the critical z-value of 1.96 at the 0.05 level of significance with a degree of freedom of 366, indicating that there is a significant relationship between the management of laboratories and Sustainable Development Goal 4 (calculated z = 29.05 >critical z = 1.96 at p < 0.05 and df = 366). Therefore, the null hypothesis of no significant relationship between the management of laboratories and Sustainable Development for the alternative that, there is a significant relationship between the management of laboratories and Sustainable Development Goal 4 in public senior secondary schools in Rivers State is rejected in favour of the alternative that, there is a significant relationship between the management of laboratories and Sustainable Development Goal Four in public senior secondary schools in Rivers State.

Discussion of Findings

Management of Classrooms and Sustainable Development Goal 4 in Public Senior Secondary Schools

The first finding of the study revealed that there is a very high relationship between the management of classrooms and Sustainable Development Goal 4 in public senior secondary schools in Rivers State. Also, a corresponding finding from a test of hypothesis establishes that there is a significant relationship between the management of classrooms and Sustainable Development Goal 4 in public senior secondary schools in Rivers State. These findings agree with Umar (2019), Mustapha and Abulfathi (2019), Suleman and Hussain (2021)who found in their studies that the management of classrooms relates to the attainment of Sustainable Development Goal 4 in public senior secondary schools in Rivers State. Umar (2019) buttressed that empirical studies on the classroom revealed that physical arrangement and management of the classroom have a significant role in the teaching-learning process. It can affect the performance of both the teachers and the students. Classroom management is portrayed in the design and its arrangement, which increases student's attendance and motivation to learn for the attainment of SDG4. Researchers like Lyons (2019), Tylor and Vlastos (2019) reported that any effort made by the school to ensure that the poor state of classrooms is properly managed to serve its purpose brings about an increase in achieving the targets of SDG4. Given this, Maxwell (2018) concurred that the achievement of SDG4 is associated with the management of classroom building conditions. According to him, a well-managed and vibrant classroom environment makes a positive impact on students' attendance and attainment of the targets of SDG4. Turano (2015) also reports that students and teachers in a conducive classroom environment tend to perform well which promotes quality and all-inclusive education as indicated in SDG4 targets.

Management of Laboratories and Sustainable Development Goal 4 in Public Senior Secondary Schools

The second finding of the study showed that there is a very high relationship between the management of laboratories and Sustainable Development Goal 4 in public senior secondary schools in Rivers State. Similarly, a corresponding finding from a test of hypothesis indicates that there is a significant relationship between the management of laboratories and Sustainable Development Goal 4 in public senior secondary schools in Rivers State. These findings corroborate Omiko (2018), Ufondu (2019), Bayu and Suharsimi (2019), Milgwa (2020), and Amiruddin-dan (2021), who in their studies observed that the management of laboratory correlates with the achievement of Sustainable Development Goal Four. According to Ufondu (2019), the laboratory

is an indispensable material resource of the school that guarantees effective teaching and learning of science subjects for the better academic performance of students as well as the achievement of school goals such as the SDG4.

Also, Bayu and Suharsimi (2019) opined that for the laboratory to be effective in meeting the needs of all girls and boys regarding equitable and quality secondary education which leads to relevant and effective learning outcomes which is one of the objectives of SDG4, it requires the best management. The management of the science laboratory as a school resource requires proper attention to the condition and quality of the facility because the laboratory directly influences the educational process and the attainment of a substantial increase in the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship, which is the number four target of SDG4 (Amiruddin-dan, 2021). Milgwa (2020) reported that in the past three decades, there has been a tremendous increase in the number of students enrolment in science discipline when compared to other disciplines. This is because the laboratory is seen to be directly relevant to students' academic achievement and everyday life. The explanation for this is that the enhancement of a better understanding of abstract concepts is through laboratory work or teaching. The practical work carried out in the laboratory is commonly regarded as an important source of students' motivation, and whereby the laboratory is not properly managed such cannot take place (Omiko, 2018).

However, the finding disagrees with Isniah, et al (2020), who reported that there are still many schools in developing countries like Nigeria that have not managed the laboratory as an effective learning media to necessitate interest of students in technical, vocational and tertiary education, being advocated by SDG4. According to the scholars in their study, this has brought about a weak and insignificant relationship between the use of laboratories and the achievement of SDG4 in these countries. Isniah, et al (2020) buttressed that the low management of science laboratories in schools as a means of supporting the learning process is one of the inhibiting factors in increasing the ability or skills. By implementing a learning process that manages a laboratory, students would master the subject matter taught in class, not only through theory alone but also through practice (Tilaar, 2019).

Conclusion

Based on the findings of the study, it is concluded that the management of school resources such as classrooms, laboratories, instructional aids, teachers, students, school levies and external financial contributions are very important variables of Sustainable Development Goal 4 in public senior secondary schools in Rivers State. Also, there is a significant relationship between the management of school resources and Sustainable Development Goal 4 Therefore, the null hypothesis of no significant relationship between the management of school resources and Sustainable Development Goal Four.

Recommendations

Based on the findings, the following recommendations are proffered:

- 1. School managers should continuously emphasise the management of classrooms to promote quality secondary education which is one of the hallmarks of SDG4 targets.
- 2. School managers should ensure that science laboratory equipment is well equipped and effectively managed to support students to acquire relevant skills which is one of the targets of SDG4.

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