

Extent of Utilization of Information and Communication Technology Facilities in Secondary School Administration for the actualization of Sustainable Development Goals (SDGs) in Enugu State

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ABSTRACT

The study focused on the utilization of information and communication technology facilities in secondary school administration for the actualization of Sustainable Development Goals (SDGs) in Enugu State. The study adopted descriptive survey research design. Two research questions and two null hypotheses guided this study. The population for the study comprised 295 respondents which consisted of 191 males and 104 females across the 295 public secondary schools in Enugu state. There was no sampling approach because the population was manageable. The instrument for data collection was a structured questionnaire titled "Utilization of ICT facilities in Secondary School Administration Questionnaire (UICSTSAQ)". The instrument was validated by three research experts. Cronbach alpha method was used to determine the internal consistency of the instrument which yielded 0.77 for cluster A and 0.82 for cluster B with an overall reliability index of 0.80 which makes the instrument reliable. Mean and standard deviation were used for answering the research questions while t-test statistic was used to test the null hypotheses at .05 level of significance. The findings of the study revealed that ICT facilities are utilized in low extent in secondary school administration for the actualization of Sustainable Development Goals (SDGs) in Enugu State in the areas of financial management and staff personnel. Based on the findings, the recommendations made among others include Enugu state government should provide adequate Information and Communication Technology facilities to secondary schools in order to have an effective administration.



Keywords: Information and Communication Technologies, Sustainable Development Goals (SDGs), Administration, Utilization

Introduction

Education is a process of acquiring knowledge, skills, values, and understanding through various formal and informal methods. Education is considered very important for personal and societal development (Obiekwe and Ogbo, 2020). Education at the secondary level refers to the educational stage that follows primary or elementary education and typically serves students in their early adolescent years through their late teens. It is a critical phase in a person's academic journey and is designed to provide a more specialized and in-depth curriculum compared to primary education. Secondary education in Nigeria serves as the pivotal link between primary and tertiary levels of education. According to Unachukwu (2014), it is characterized as the connecting point between primary and tertiary education, playing a crucial role in establishing a strong foundation for higher learning and practical life skills in the country (Ogbu, 2014). This stage, often termed post-primary formal education, is accessible to individuals who have satisfactorily completed their primary education and fulfilled the necessary admission criteria (Komba, 2013). The individual responsible for the administration of secondary education is typically referred to as the principal.

The principal is seen as an administrator because they manage the school's operations. According to Garba (2015), the principal is acknowledged as the primary and official leader of a school with line authority. Udoh and Akpa, as cited in Agu and Okoli (2021), described the principal as the top executive of a secondary school. Jonas, Morgan, and Davidson (2019) emphasized that the primary purpose of being a principal is to provide leadership within the school administration, highlighting the distinctive role that principals hold in the educational system.

Administration is the process through which human and material resources in organizations are effectively mobilized for the achievement of organizational purposes and goals. According to Okorie (2012), administration is a social process that concerns the identification, motivation, controlling other integral bodies so as to accomplish their stated



goals. Okorie (2014) defined administration as a social process that concerns the identification, motivation, controlling other integral bodies so as to accomplish their stated goals. According to Onyekaba (2021), the life-wire of any organisation such as effective administration of secondary education is the utilization of Information and Communication Technology.

Utilization is the act of using something better in a proper manner or way. Utilization means to put in use especially in profitable and practical manner (Luminous Inverters, 2012). Information and Communication Technology (ICT) has become most popular and easy means of disseminating information. Umeagukwu and Etuh (2014), described Information and Communication Technology (ICT) as an advance in technologies that provides rich global resources and collaborative environments for the dissemination of ICT literacy materials. Information and Communication Technology (ICT) encompasses a combination of technologies for collecting, storing, processing, communicating and delivering of information related to teaching and learning processes (Johnson, 2017). The advancement of ICT has brought about significant improvement in the efficiency of teaching and learning, administration and management of education sector (Haruna and Idris, 2022). In the world at large, it is acknowledged that ICT is growing at a rapid pace with emerging technologies continuing to develop (Onyekaba, 2021). Information and communication technology facilities are described as all the equipment available for the identification, generation, processing, storage, packaging, preservation, and conservation and sending of information, regardless of time and location challenges (Nwuke and Ucheju, 2021).

Incorporating information and communication technology in secondary education administration also promotes collaboration and knowledge sharing among students and educators. Literature revealed that ICT use increases school efficiency and reduces unnecessary bureaucracy in school administration (Angie and Ugwu, 2013), increases productivity (Olayemi and Omotayo, 2012), made communication to be cheap, fast and reliable as well as enable easier retrieval of information (Singh and Munianchi, 2012). The modern era is characterized by significant progress propelled by information and communication technology leading to a worldwide and interlinked community (Okechukwu and Ukeh, 2022). Therefore, the utilization



of ICT facilities involves the use of technology in carrying out managerial tasks which include financial management and students' personnel management.

Financial management means planning, organising, directing and controlling the financial activities such as procurement and utilization of funds by the institution. Pandey in Aliyu (2018), defined financial management as activity which is concerned with the planning and controlling of an organization's financial resources. Financial management is the planning, organizing and controlling of inflow and outflow of money aimed at achieving organizational success and development (Umar, 2019). Meanwhile, a study conducted by Onyekaba (2021), showed that ICTs facilities are utilized to a low extent in financial management. The primary purpose of financial management has to do with procurement, allocation and control of financial resources of a concern. Financial management is crucial in effective students' personnel administration.

Students' personnel management refers to all the activities that are carried out by the principals to ensure that the students derive the best from the schools' curricular and co-curricular activities. According to Lewis (2015), students' personnel have to do with the services that are provided to enhance students' learning process. Okeke (2015) defined student personnel services as those special classroom supporting services outside the curricular activities that impinge upon the maturation of the students. A study carried out by Chidobi (2015), revealed that the utilization of ICT for students' personnel management was low.

In recent years, ICT utilization has been effective in educational administration and management to support Sustainable Development Goals (SDGs). The SDGs are a set of global objectives established by the United Nations in 2015 as part of the 2030 Agenda for Sustainable Development. Furthermore, technology can enhance access to quality education, which aligns with SDG 4 (Quality Education). Online learning platforms, digital libraries, and educational apps provide opportunities for students to access educational resources beyond the confines of traditional classrooms. According to UN General Assembly (2015), the 2030 Agenda for Sustainable Development will be at the core of international and transnational cooperation for the next 15 years. It combines economic, social and environmental aspects and defines global values for sustainable development. Therefore, the concept of sustainable national development remains the modern parameter of measuring development (Chigbu, Oguzie and Obi, 2020).



At this moment, a critical variable to be considered in this study is gender. Gender refers to the social and cultural roles, behaviours, expectations, and identities associated with being male or female. World Health Organization (WHO) (2016), noted that the word gender is used to describe the characteristics, roles and responsibilities of women and men, boys and girls which are socially constructed. Men and women often differ in their preferences for information and communication technology use.

The utilization of information and communication technology in secondary education administration has the potential to significantly contribute to the actualization of the Sustainable Development Goals (SDGs). By leveraging ICTs effectively, educational institutions can enhance their administrative processes, improve learning outcomes, and address various challenges associated with achieving the SDGs. Therefore, this study ascertained the extent to which ICTs are utilized in secondary school administration for the actualization of Sustainable Development Goals (SDGs) in Enugu State.

Statement of the Problem

In today's rapidly advancing world, Information and Communication Technology plays a crucial role in various aspects of society, including education. Secondary schools, as key institutions for nurturing and preparing future generations, can greatly benefit from the effective utilization of ICTs in their administrative processes. The enormous increase in students enrolment in public secondary schools in Enugu state, Nigeria has made the administrative processes in public secondary schools complex. There is the problem of controlling large population of students as well as management records on a large scale which have affected the effective administration of public secondary schools. The problem of this study is that despite government efforts in making ICT facilities available for both academic and administrative activities in public secondary schools, it seems that they are not fully utilized. It is saddening to note that many administrative processes are still being carried out with traditional methods in public secondary schools today. The achievement of an effective and efficient school administration is becoming an increasingly difficult challenge without the engagement of information and communication technology (ICT) devices in this current information age. The utilization of ICTs in secondary school administration has the potential to contribute significantly to the actualization of the SDGs. This study, therefore, sought to examine the extent of utilization

of information and communication technology facilities for the administration of public secondary schools in Enugu State, Nigeria with particular reference to students' personnel management and financial management.

Purpose of the Study

The main purpose of this study was to ascertain the extent of utilization of information and communication technology (ICT) facilities in secondary school administration for the actualization of Sustainable Development Goals (SDGs) in Enugu State. Specifically, the study examined:

1. the extent to which ICT facilities are utilized for financial management in secondary schools for the actualization of SDGs;
2. the extent to which ICT facilities are utilized for students' personnel management in secondary schools for the actualization of SDGs.

Research Questions

The following research questions guided the study:

1. To what extent are ICT facilities utilized for financial management in secondary schools for the actualization of SDGs?
2. To what extent are ICT facilities utilized for students' personnel management in secondary schools for the actualization of SDGs?

Hypotheses

The following null-hypotheses guided this study and were tested at 0.05 level of significance:

H₀₁: There is no significant difference between the mean scores of male and female school principals on the extent to which ICT facilities are utilized for financial management in secondary schools for the actualization of SDGs.



H₀₂: There is no significant difference between the mean scores of male and female school principals on the extent to which ICT facilities are utilized for students' personnel management in secondary schools for the actualization of SDGs.

Research Method

The study adopted descriptive survey research design. Nworgu (2018), defined descriptive survey research design as a design that aims at collecting data and describing them in a systematic way. With descriptive survey research design, the researcher was able to collect data through copies of questionnaire from a group of people which were analyzed and consequently generalized to cover the entire population. The population for the study comprised 295 respondents which consisted of 191 males and 104 females across the 295 public secondary schools in Enugu state. There was no sampling approach because the population was manageable. The instrument for data collection was a structured questionnaire titled "Utilization of ICT facilities in Secondary School Administration Questionnaire (UICSTSAQ)". The instrument was validated by three research experts. Two were from the Department of Educational Management and one was from the Department of Mathematics and Computer Education, all from Faculty of Education, Enugu State University of Science and Technology (ESUT). Cronbach alpha method was used to determine the internal consistency of the instrument which yielded 0.77 for cluster A and 0.82 for cluster B with an overall reliability index of 0.80 which makes the instrument reliable. Mean scores and standard deviations were used in answering the research questions. The null hypotheses were tested using t-test statistic at 0.05 level of significance. In rating the mean scores, each response option had a numerical value based on real limit of numbers: VGE = 3.50-4.00; GE = 2.50-3.49; LE = 1.50-2.49; VLE = 0.00-1.49. The interpretation of the test of hypotheses was based on the significance (sig.) values from the SPSS output. The null hypotheses was not be significant when the probability values are greater than .05, but was not be significant when the probability values are less than 0.05.

Data Analysis and Results Presentation

Research Question 1: To what extent are ICT facilities utilized for financial management in secondary schools for the actualization of SDGs?



Table 1: Mean scores of male and female principals on the extent to which ICT facilities utilized for financial management in secondary schools for the actualization of SDGs

ITEMS		Male = 191			Female = 104		
S/N	ICT facilities are utilized for	\bar{x}	SD	Dec	\bar{x}	SD	Dec
	financial management by:						
1	making fee payment for hostels electronically.	2.34	.96	LE	2.19	.91	LE
2	budget forecasting.	2.31	.97	LE	2.08	.85	LE
3	budget preparation.	2.22	.98	LE	2.33	.96	LE
4	management of school accounts.	2.26	.96	LE	2.29	.93	LE
5	estimating capital structure.	2.18	.97	LE	2.29	.88	LE
6	tracking financial transactions.	2.12	.91	LE	2.20	.95	LE
	Cluster Mean/SD	2.24	.96	LE	2.23	.91	LE

In the Table, the male principals' mean ranged from 2.12 to 2.34, while the female principals' mean range from 2.08 to 2.33 respectively. The values of the cluster mean are 2.24 and 2.23 for both male and female principals. They also have standard deviations of .96 and .91 respectively. The outcome of the data showed that ICT facilities are utilized for financial management in secondary schools for the actualization of SDGs to a low extent.

Research Question 2: To what extent are ICT facilities utilized for students' personnel management in secondary schools for the actualization of SDGs?

Table 2: Mean scores of male and female principals on the extent to which ICT facilities utilized for students' personnel management in secondary schools for the actualization of SDGs

ITEMS		Male = 191			Female = 104		
S/N	ICT facilities are utilized for	\bar{x}	SD	Dec	\bar{x}	SD	Dec
	students' personnel management by the following ways:						

7	recording of students' admission data.	2.24	.90	LE	2.24	.95	LE
8	using examination scoring machine and storing all manner of students results in the system.	2.21	.88	LE	2.11	.86	LE
9	use of e-examination instead of pen and paper.	2.12	.89	LE	2.08	.90	LE
10	payment of school fees on-line through internet services	2.26	.95	LE	2.28	.89	LE
11	communicating with teachers.	2.38	.90	LE	2.24	.91	LE
12	communicating with other students.	2.29	.89	LE	2.35	.80	LE
Cluster Mean/SD		2.25	.91	LE	2.22	.89	LE

In the Table, the male principals' mean ranged from 2.12 to 2.38, while the female principals' mean range from 2.08 to 2.35 respectively. The values of the cluster mean are 2.25 and 2.22 for both male and female principals. They also have standard deviations of .91 and .89 respectively. The outcome of the data analysis showed that ICT facilities are utilized for students' personnel management in secondary schools for the actualization of SDGs to a low extent.

H₀₁: There is no significant difference between the mean scores of male and female school principals on the extent to which ICT facilities are utilized for financial management in secondary schools for the actualization of SDGs.

Table 3: Summary of t-test analysis of the mean scores of male and female principals on the extent to which ICT facilities are utilized for financial management for the actualization of SDGs

Group	n	\bar{x}	SD	df	p-value	Decision
Male Principals	191	2.24	.96	293	.111	H ₀₁ not rejected
Female Principals	104	2.23	.91			

Data in Table 3 for male and female principals on the extent to which ICT facilities are utilized for financial management in secondary schools for the actualization of SDGs show that at 293 degree of freedom, the p-value was .111. This shows that the p-value is greater than 0.05 level of significance set for this study, hence the null hypothesis was not rejected and, therefore, there was no significant difference between the mean ratings of male and female principals on the extent to which ICT facilities utilized for financial management in secondary schools for the actualization of SDGs.

H₀₂: There is no significant difference between the mean scores of male and female school principals on the extent to which ICT facilities are utilized for students' personnel management in secondary schools for the actualization of SDGs

Table 4: Summary of t-test analysis of the mean scores of male and female principals on the extent to which ICT facilities are utilized for students' personnel management for the actualization of SDGs

Group	n	\bar{x}	SD	df	p-value	Decision
Male Principals	191	2.25	.91			
Female Principals	104	2.22	.89	293	.091	H ₀₂ not rejected

Data in Table 4 for male and female principals on the extent to which ICT facilities are utilized for financial management in secondary schools for the actualization of SDGs show that at 293 degree of freedom, the p-value was .091. This shows that the p-value is greater than 0.05 level of significance set for this study, hence the null hypothesis was not rejected and, therefore, there was no significant difference between the mean ratings of male and female principals on the extent to which ICT facilities utilized for students' personnel management in secondary schools for the actualization of SDGs.

Discussion of Findings

The findings of the study showed that ICT facilities are utilized for financial management in secondary schools for the actualization of SDGs to a low extent. Further finding showed that there was no significant difference between the mean ratings of male and female principals on the extent to which ICT facilities utilized for financial management in secondary schools for the actualization of SDGs. The finding is in line with Onyekaba (2021), who posited that ICT facilities are utilized to a low extent for financial management in education sector.

The finding of the study showed that ICT facilities are utilized for students' personnel management in secondary schools for the actualization of SDGs to a low extent. Further finding showed that there was no significant difference between the mean ratings of male and female principals on the extent to which ICT facilities utilized for students' personnel management in secondary schools for the actualization of SDGs. The finding is in line with Chidobi (2015), who posited that ICT facilities are utilized to a low extent for students' personnel management in secondary schools.

Conclusion

The study examined the extent of utilization of information and communication technology (ICT) facilities in secondary school administration for the actualization of Sustainable Development Goals (SDGs) in Enugu State. The study concludes that ICTs are utilized to a low extent in the areas of financial management and students' personnel management.

Recommendations

Based on the findings of the study, the research recommended the following that:

1. Enugu State government should provide adequate Information and Communication Technologies facilities to secondary schools in order to have an effective administration in the area of financial management.
2. Principals should be encouraged to incorporate the effective utilization of ICTs in their schools in order to have a smooth students' personnel management.



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