

Roles of Emerging Technologies in the Realization of Effective Secondary School Administration In Enugu State

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ABSTRACT

The study ascertained the roles of emerging technologies in the realization of effective secondary school administration in Enugu State. Two research questions were raised to guide the study and two null hypotheses were formulated to test at .05 level of significance. The study adopted descriptive survey research design. The population for the study comprised 295 respondents which consisted of 191 males and 104 female principals. No sampling was there for this study. The instrument for data collection was a structured questionnaire titled "Role of Emerging Technologies in the realization of effective Secondary School Administration Scale (RETSSAS)". The instrument was validated by three research experts. Cronbach alpha approach was used to determine the internal consistency of the instrument which yielded .78 for cluster 1 and .82 for cluster 2 with an overall reliability index of .80. Mean and standard deviation were used for answering the research questions while t-test statistic was used to test the null hypotheses at 0.05 level of significance. The findings of the study revealed that emerging technologies are critical in the realization of effective secondary school administration in the areas of instructional delivery and staff personnel management. Based on the findings, it was recommended that the Ministry of Education should carry out continuous training and sensitization of the secondary school administrators on the integration of emerging technologies in instructional delivery and staff personnel management.

Keywords: Emerging Technologies, Administration, Secondary School



Introduction

Education lies at the heart of every society. Every country's education system is a powerful instrument for socio-economic progress without which neither an individual nor a country can achieve professional and economic growth (Ololube and Ololube, 2016). Education has remained a veritable tool for personal and societal development among nations. Secondary education which is the focus of this study is the level of education after primary school. Secondary education forms a bridge between the primary and tertiary levels of education in Nigeria. It is essentially provided to develop basic skills, behaviour and academic excellence that transmit to tertiary level of education (Aja-Okorie and Oko, 2021). The ultimate goal of secondary education is to develop the individual's mental capacity and character for higher education and useful living within the society. Quality education especially at the secondary school level highly determines the quality of human resources and future civilization. The secondary education is managed by the principal.

A principal is seen as the executive head of secondary school who develops and implements the educational programmes of the school (Aja-Okorie and Oko, 2021). According to Tsamoh and Titanji, (2020), secondary school principals occupy critical positions that they can use to motivate teachers and increase the potential for the achievement of the objectives of secondary education. The principal oversees many fields in the school and is responsible for a wide range of duties including effective secondary school administration.

Administration is the management of public affairs efficiently. Aguba in Okenwa and Igbo (2013), defined administration as the process of working with and through others to efficiently accomplish organizational goals. Administration involves processes such as; planning, organizing, directing, coordinating, controlling and evaluating performance against the stated



objectives of the organization (Makwara, 2014). The integration of emerging technologies in secondary school administration can bring numerous benefits and enhance various aspects of education.

Emerging technologies refer to innovative and developing technologies that are in the early stages of adoption and have the potential to significantly impact various industries and aspects of society. Emerging technologies according to Bozalek (2015), are those technologies which are likely to have a large impact on teaching, learning, or creative inquiry on learners or those technologies which are on the rise. According to Kufeoglu (2022), emerging technologies include a variety of technologies such as educational technology, information and communication technology, nanotechnology, biotechnology, robotics, learning analytics, adaptive learning, mobile learning, immersive classrooms and artificial intelligence. Emerging technologies have a significant impact on instructional delivery by transforming traditional teaching methods and enhancing the learning experience for students.

Instructional delivery refers to the interaction among the student, the teacher, the content, and the knowledge students will need for learning and collaborating with others in a diverse society and rapidly changing world (Canales, 2020). According to Kiplagat (2011), schools are embracing computer technology to compliment the conventional classroom learning modes, administrative and management practices and therefore, both the students and the school administrators/managers need computer knowledge to function effectively in school. Conventional delivery methods in secondary schools may not fully engage students, limit the availability of resources, and hinder personalized learning experiences. The incorporation of emerging technologies such as interactive whiteboards, educational apps, online learni platforms and artificial intelligence can transform instructional delivery. Kayode (2015),



stated that ICT is an ascent in new learning opportunities than the conventional book-educators model. According to Owulu, Ntamu and Monity (2016), effective utilization of ICT facility for instructional process reinforces the teacher's ability to cater for individual differences and fosters learners' involvement, participation and understanding, which help them in grounding their thoughts and feelings and in turns contribute to good academic performance in schools. One of the factors that may affect instructional delivery is based on the way staff personnel are managed.

Staff personnel management is the act of planning, organizing, controlling, stimulating, and motivating teachers in order to enhance their commitment to the attainment of the school objectives. Staff personnel management is defined as obtaining, using, and maintaining satisfied employees (Ahammad, 2017). Traditional methods of staff personnel management in secondary schools often involve manual paperwork, making the process time-consuming, prone to errors, and less efficient. However, the integration of emerging technologies such as human resource management systems, digital attendance tracking, and cloud-based collaboration tools can streamline staff personnel management processes, improve communication, automate administrative tasks and enhance over efficiency. According to Telem (2015), ICT helps in streamlining management processes of the human resource especially in the area of communication. While the integration of emerging technologies can bring significant benefits, it is crucial to ensure equitable access to technology, provide adequate training and support for stakeholders notwithstanding their gender.

Gender is an important variable in this study. Gender is described as the behavioral



characteristics distinguishing between males and females in any society. Gender according Onyeonoru (2015) is referred to as the differentiation in roles between men and women which is different from sex but construed by society through socialization. Sex is the biological differentiation between the roles of men and women.

Secondary school administration plays a crucial role in ensuring the smooth functioning of educational institutions. With the rapid advancement of technology, emerging technologies offer numerous opportunities to enhance staff personnel management and instructional delivery in secondary schools. It is based on the above background that this study ascertained the roles of emerging technologies in the realization of effective secondary school administration in Enugu State.

Statement of the Problem

The rapid advancement of emerging technologies has brought about significant changes in various sectors, including education. In the context of secondary school administration, there is need to explore the roles of emerging technologies in enhancing staff personnel management and instructional delivery for effective educational outcomes. While the traditional methods of managing personnel and delivery instruction have been effective to some extent, incorporating emerging technologies into these areas has the potential to revolutionize secondary school administration, leading to improved efficiency and effectiveness. However, the exact impact and potential challenges associated with the integration of emerging technologies in staff personnel management and instructional delivery in secondary schools remain unclear. This problem statement seeks to identify and examine the specific roles of emerging technologies in these two key areas of secondary school administration.

Purpose of the Study

The main purpose of this study was to ascertain the roles of emerging technologies in the realization of effective secondary school administration in Enugu State. Specifically, the study sought to:

1. determine the roles of emerging technologies in the realization of effective secondary school administration in the aspect of instructional delivery;
2. ascertain the roles of emerging technologies in the realization of effective secondary school administration in fostering effective staff personnel management.

Research Questions

The following research questions guided the study:

1. What are roles of emerging technologies in the realization of effective secondary school administration in the aspect of instructional delivery?
2. What are the roles of emerging technologies in the realization of effective secondary school administration in fostering effective staff personnel management?

Hypotheses

The following null-hypotheses were formulated and tested at .05 level of significance:

H₀₁: There is no significant difference between the mean ratings of male and female principals on the roles of emerging technologies in the realization of effective secondary school administration in the aspect of instructional delivery.



Ho₂: There is no significant difference between the mean ratings of male and female principals on the roles of emerging technologies in the realization of effective secondary school administration in fostering effective staff personnel management.

Research Method

The study adopted descriptive survey research design. Nworgu (2015), defined descriptive survey research design as one which a group of people or items is studied by collecting and analyzing data from a few people or items regarded as representative of the entire group. The design is considered appropriate because it enabled the researcher to identify the characteristics of the population objectively. The population for the study comprised 295 respondents which consisted of 191 males and 104 female principals. There was no sampling for this study. The instrument for data collection was a structured questionnaire titled "Emerging Technologies and the realization of effective Secondary School Administration Questionnaire (ETSSAQ)". The instrument was validated by three research experts. Cronbach alpha approach was used to determine the internal consistency of the instrument which yielded .78 for cluster 1 and .82 for cluster 2 with an overall reliability index of .80.

However, the researchers retrieved 287 (188 from male and 99 from female principals) copies from the 295 administered. The research questions were answered using mean scores and standard deviation. The response rating of great extent was determined by finding the mean of the values assigned to the options. The decision rule for the research questions was based on real limit of numbers: Strongly Agree (SA) = 3.50-4.00; Agree (A) = 2.50-3.49; Disagree (D) = 1.50-2.49; Strongly Disagree (SD) = 0.00-1.49. The hypotheses were tested using t-test statistic at .05 level of significant. Alpha was set at .05 level of significance. Significant associations were observed for any p value less than .05. The decision rule for the

hypotheses was that hypothesis was not rejected when the p value was more than the significant value .05, but rejected when the p value was less than the significant value.

Data Analysis and Results Presentation

Research Question 1: What are roles of emerging technologies in the realization of effective secondary school administration in the aspect of instructional delivery?

Table 1: Mean Ratings of Male and Female Principals on the Roles of Emerging Technologies for the Realization of Effective Secondary School Administration in the aspect of Instructional Delivery

S/N	ITEMS	Male Principals 188			Female Principals 99		
		\bar{x}	SD	Dec	\bar{x}	SD	Dec
	roles of emerging technologies in the aspect of instructional delivery include:						
1.	access to information.	2.62	0.91	A	2.53	0.95	A
2.	developing lesson plans.	2.58	0.85	A	2.61	0.89	A
3.	interactive learning experience.	2.55	0.89	A	2.58	0.91	A
4.	automated assessment process.	2.61	0.91	A	2.63	0.89	A
5.	managing class attendance.	2.59	0.89	A	2.56	0.93	A
	Cluster Mean	2.59		A	2.58		A

Table 1 shows that the male principals' means ranged from 2.55 to 2.62 while the female principals' means ranged from 2.53 to 2.63. They also have cluster means of 2.59 and 2.58 and . The closeness of the standard deviations to the mean is an indication that the respondents are homogeneous in their responses. Thus, the outcome showed that emerging technologies are effective during instructional delivery.

Research Question 2: What are the roles of emerging technologies in the realization of effective secondary school administration in fostering effective staff personnel management?

Table 2: Mean Ratings of Male and Female Principals on the Roles of Emerging Technologies in the Realization of Effective Secondary School Administration in Fostering Effective Staff Personnel Management

ITEMS		Male Principals 188			Female Principals 99		
S/N	roles of emerging technologies in fostering effective staff personnel management include:	\bar{x}	SD	Dec	\bar{x}	SD	Dec
6.	Recruitment process.	2.81	0.96	A	3.01	0.83	A
7.	employee on boarding process.	3.03	0.83	A	2.96	0.81	A
8.	Centralizing employee data.	2.84	0.96	A	2.99	0.84	A
9.	attendance tracking.	2.97	0.82	A	2.94	0.80	A
10.	performance management.	2.75	0.99	A	2.58	0.82	A
Cluster Mean		2.88		A	2.90		A

Table 2 shows that the male principals' means ranged from 2.75 to 3.03 while the female principals' means ranged from 2.58 to 3.01. They also have cluster means of 2.88 and 2.90 and standard deviations are low and close to the mean. The closeness of the standard deviations to the mean is an indication that the respondents are homogeneous in their responses. Therefore, the outcome showed that emerging technologies are effective in fostering effective staff personnel management

H₀₁: There is no significant difference between the mean ratings of male and female principals on the roles of emerging technologies in the realization of effective secondary school administration in the aspect of instructional delivery.

Table 3: Summary of t-test Analysis of the Mean Ratings of Male and Female Principals on the Roles of Emerging Technologies in the Realization of Effective Secondary School Administration in the aspect of instructional Delivery

Group	n	\bar{x}	SD	df	p-value	Decision
Male Principals	188	2.59	.88	285	.101	H ₀₁ not rejected
Female Principals	99	2.58	.91			

Data in Table 3 shows that at 285 degree of freedom, the p-value was .101. This shows that the p-value is greater than .05 level of significance set for this study, hence the null hypothesis was not rejected , Thus there was no significant difference between the mean ratings of male and female principals on the roles of emerging technologies in the realization of effective secondary school administration in the aspect of instructional delivery.

H₀₂: There is no significant difference between the mean ratings of male and female principals on the roles of emerging technologies in the realization of effective secondary school administration in fostering effective staff personnel management.

Table 4: Summary of t-test Analysis of the Mean Ratings of Male and Female Principals on the Roles of Emerging Technologies in the Realization of Effective Secondary School Administration in Fostering Staff Personnel Management

Group	n	\bar{x}	SD	df	p-value	Decision
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Male Principals	188	2.88	.91			
				285	.079	H ₀₂ not rejected
Female Principals	99	2.90	.82			

Data in Table 4 shows that at 285 degree of freedom, the p-value was .079. This shows that the p-value is greater than .05 level of significance set for this study, hence the null hypothesis was not rejected. Thus, there was no significant difference between the mean ratings of male and female principals on the roles of emerging technologies in the realization of effective secondary school administration in fostering staff personnel management.

Discussion of Findings

The finding of the study showed that emerging technologies are effective in fostering effective staff personnel management. Further finding showed that there was no significant difference between the mean ratings of male and female principals on the roles of emerging technologies in the realization of effective secondary school administration in the aspect of instructional delivery. This finding is in line with that Kiplagat (2011), who posited that emerging technologies have significant roles to play in effective secondary school administration. The finding also agrees with that Kayode (2015), who posited that emerging technologies will serve crucial roles in the administration of education.

The finding of the study showed that emerging technologies are effective in fostering effective staff personnel management. Further finding showed that there was no significant difference between in the mean ratings of male and female principals on the roles of emerging technologies in the realization of effective secondary school administration in fostering staff personnel management. This finding is in line with that Telem (2015), who posited that emerging technologies have important roles to play in the management of staff personnel.

Conclusion

The study examined the roles of emerging technologies in the realization of effective secondary school administration in Enugu State. Based on the findings, the study concludes that emerging technologies are effective in the areas of instructional delivery and in fostering staff personnel management.

Recommendations

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

1. Ministry of Education should carry out continuous training and sensitization of the secondary school administrators on the integration of emerging technologies in instructional delivery.
2. Principals should be encouraged to integrate emerging technologies in order to foster effective staff personnel management.



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