

PERCEPTION OF PRINCIPALS TOWARDS DIGITAL TECHNOLOGY IN CURBING EXAMINATION MALPRACTICE IN ENUGU STATE

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Abstract

This study appraised the perception of principals towards Digital technology in curbing examination malpractice in Enugu State. Two research questions and two research hypotheses were formulated and tested at 0.05 level of significance. The entire population of 295 principals, comprising of 169 males and 126 females was used for the study. Census sampling was used because the population is manageable. A self-developed structured questionnaire was used as the instrument for data collection. The instrument was validated by three experts, one expert in Measurement and Evaluation; and two experts in Educational Management, all from the Faculty of Education, Enugu State University of Science and Technology. The reliability of the instrument was determined using Cronbach Alpha. The instrument yielded reliability indices of .77 and .75 for clusters "A" and "B" respectively. The overall reliability index was .76, which proves the reliability and suitability of the instrument for the study. Copies of questionnaire were administered and retrieved by the researcher with the help of two research assistants. The analysis of data was done using Statistical Package for Social Sciences (SPSS). Mean with standard deviation was used to answer the research questions. The null hypotheses were tested using z-test statistics at .05 level of significance. From the result of the findings of the study, it was concluded that principals perceives that CCTV cameral curbs examination malpractice and that the use of tomb identification curbs examination malpractice among others in Enugu State. Comparison of the male and female principals showed that there was no significant difference between the mean ratings of male and female principals on how principals perceive emerging technologies in curbing examination malpractice in Enugu State. There is no significant difference between the mean ratings of male and female principals on how they perceive emerging technologies in examination malpractice in Enugu State. It was therefore, recommended among others that there is need for government to provide the enabling environment and supportive infrastructure that aid the smooth use of emerging technologies in conducting professional and external examinations in Enugu.

Keywords: Perception, Principals, Digital Technology, Examination Malpractice

Introduction

The principal is the highest ranking administrator in a secondary school. In the beginning of 20th century, as schools grew from one room into schools with multiple classrooms, there was need for someone to manage them. Initially, the void was filled in by teachers, however teaching and dealing with school management needs made it impossible for both to be managed properly (Jennifer, 2020). As schools continued to grow, these principal-teachers became full time administrators. Most stopped teaching in order to manage their demanding responsibilities. As managers and leaders, principals were responsible for financial operations, building maintenance, student scheduling, personnel, public relations, school policy, coordination of the instructional program and overall school matters. Since the principal is responsible for the overall operation of

their schools, they are held responsible for the performance of their students on national and state assessments (Jennifer, 2020).

These responsibilities include monitoring of instruction, helping teachers with their duties by improving their teaching among others. With this change in responsibility, principals discovered the need to evaluate instructions effectively by improving instructional techniques too. With schools facing increased pressure to improve teaching and learning, the duties and responsibilities of principals further expanded to include leading school reform that would raise student achievement (Animba, 2019). Thus the principal does this by creating shared vision within the school-community and implementing new organizational structures that engages teachers in shared decision-making. Principals are also responsible for facilitating their school interactions with parents and others in the school community (Animba, 2019). This responsibility includes working with parents in disciplinary issues when students are not succeeding academically. They are responsible for ensuring that facilities and equipment are safe and in good working condition, the development of overall school discipline policies, enforcement of the policies and assignment of supervisory responsibilities among school personnel (Ogbonna, 2020). Many principals are faced with numerous attitudinal issues ranging from multiple perceptions and leadership ideas especially when it comes to general school management.

Perception can be defined as the recognition and integration of sensory information. According to Jennifer (2020), it is the process of recognizing and interpreting sensory stimuli including how to respond to the information. It can also be defined as a process where information from the world of externality is used in solving the problem of internality (Animba, 2019). It is the sensory experience of the world which involves both recognizing environmental stimuli and action in response to these stimuli. It also includes all those processes by which an individual receives information about his environment. Through perceptual process, information about properties and elements of the environment are gained which are very critical to survival. Perception includes the five sense organs; touch, sight, sound, smell and taste, ability to detect changes and the use of cognitive process required to process information. Perception is the ability to capture, process and actively make sense of the information. It is also the cognitive process that makes it possible to interpret the world of externality through the sensory organs. All perceptual process involves signals that go through the nervous system resulting from the physical and chemical stimulation of the sensory system. Moreover, perception is not only a passive recipient through the sensory signals but active through the recipients learning, memory, expectation and attention. All stages of perception often happen unconsciously and in less than a second. This process begins with stimuli reception and ends with the interpretation of same.

Perception can be classified into many categories such as visual perception (The ability to see and translate light signals through occipital projections), auditory perception (the ability to perceive sound by detecting vibrations through the auditory modalities separating them according to sources of interest, identifying them and estimating their distance and directions), haptic perception (The ability to recognize objects through touch senses and a combination of somatosensory pattern on the skin surface, perception of hand position and conformation), Taste/Tactile perception (The ability to perceive the flavor of substances including but not limited to food), Olfactory perception (the ability to absorb molecules through olfactory organs), Social perception (The ability to understand individuals and groups in their social world through social cognition) and Speech perception (The process by which spoken language is heard, interpreted and understood). Many principals are of the opinion that the use of emerging technology is suitable for

monitoring external examination to maintaining transparent examination atmosphere (Ogbonna, 2020).

The evolution of emerging technologies (ETs) is changing all facets of educational processes ranging from the nature of classrooms, quality of content, methodologies, mode of students' engagement, and evaluation (Onyema, 2019a). Technology plays an important role in education to foster education activities. Emerging technologies facilitates online education, research and use of flexible methodologies by educators. Emerging technologies 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" (Bozalek, 2021). Emerging technologies bring about paradigm changes that are taking place at a very rapid pace with respect to the digital world. According to Spector (2022), learning is characterized by stable and persistent changes in what a person or a group of people know and can do. The biggest change in the present era is the application of emerging technologies. Emerging technologies provide opportunities for educators to improve their skills and job performances. It introduces flexibility to teaching and learning process, and takes teaching and learning beyond the physical classrooms.

Furthermore, emerging technologies has brought tremendous transformational changes to education across the globe, and many educators are now moving towards technology-based teaching and learning, as well school management and administration (Onyema, 2019). The evolution of tablet computing, mobile applications, cloud computing, virtual technology, artificial intelligence, and many more are making school administration more interesting and productive. The current workplace practices in the education system require individuals to have the ability to use different types of emerging technologies with efficiency and confidence. Different technology platforms and applications have since emerged and are being deployed by education authorities to help school administrators, like principals to improve the quality of administration. Technological tools such as CCTV cameras, computers, laptop, tablet or smartphone, close circuit television (CCTV), internet, projector, intercom, printer, scanner, television, biometric and recognition technology have proven very useful in school administration (Onyema, Ani, Nnaji, Abdullahi, Alsayed & Noorulhasan, 2019). With the growth in school systems in size and in scope of activities, emerging technologies have provided mechanism for administrators to keep abreast of increasing demands for current and documented information (Tayo & Abass, 2014). Grades assigned to students must be recorded in some fashion, and these records must be easily and readily accessible to appropriate individuals. Currently, a number of educational institutions and boards are using emerging technology tools and equipment to process the examination results. The volume of such operations is often massive involving thousands of students. With the introduction of emerging technologies, these organizations are able to process the examination data, curb examination malpractice and announce the results in quickest possible time.

Examination malpractice has been occurring persistently in our educational institutions to the points where it is difficult to tell the difference between very hard working students and ordinary students. The tension and examination fever that usually characterizes school campuses prior to, and during examinations seem to have gone down. The ill- opinion has run through our society to the point where people has begun to question the authenticity and credibility of the hard earned certificates of some distinguished individuals and institutions. This calls for the use of digital technology in curbing examination malpractice in Enugu State (Frempong, 2016). Perception can vary based on many variables such as location, gender attitude and efficacy.

Gender refers to the characteristics by which male or female can be defined. There could be variation in the test anxiety of students across gender lines. Could it be that male students are

more test anxious than their female counterparts or otherwise? While Jhpiego (2012) found no significant difference in the adaptability of gender, Kimmel (2019), found a significant difference in environmental adaptability of male and female principals as females experienced higher level of low adaptivity. To maintain capacity in any practical oriented activities, female principals need to maintain more adaptive digital technology culture than their male counterparts. There appears to be inconsistencies in these findings. Hence it becomes necessary to find out perception of principals towards digital technology in curbing examination malpractice in Enugu State.

Statement of the Problem

Emerging technologies play an ever-important role in increasing economic productivity through digital economies and productivity, enhancing the delivery of public and private services and achieving broad socio- economic goals in education, health care, employment and social development. Despite the huge importance of emerging technologies, Nigeria still cannot be counted among the progressive nations using these technologies in secondary schools for educational and administrative purposes to curb malpractices. In line with the utilitarian values of emerging technologies in schools, it is worthy of note that active role of the school management is needed in order to realize as well as sustain the impact of emerging technologies in the administration of secondary schools to curb examination malpractice. It was observed by the researcher that many secondary schools in Enugu State still hinge on paper and pen means of writing examinations. In some occasions, students neither are nor monitored effectively due to lack of modern facilities like cameras and biometrics. Government has tried to organize a centralized measure to curb examination malpractice through CBT centers and general sensitization to both teachers and students on the implication of examination malpractice. Despite corrective measures taken by the school to stop examination malpractices, it still continues hence, this work intends to unravel perception of principals towards digital technology in curbing examination malpractice in Enugu State

Purpose of the Study

The main purpose of the study was to examine the perception of principals towards digital technology in curbing examination malpractice in Enugu State.

Specifically, the study seeks to:

1. Ascertain perception of principals towards CCTV in curbing examination malpractice in Enugu State.
2. Determine perception of principals towards biometrics in curbing examination malpractice in Enugu State.

Research Questions

The following research questions were put forward in this study:

1. What is the perception of principals towards CCTV in curbing examination malpractice in Enugu State?
2. What is the perception of principals towards biometrics in curbing examination malpractice in Enugu State?

Hypotheses

H01: There is no significant difference between the mean ratings of male and female principals towards CCTV in curbing examination malpractice in Enugu State.

H02: There is no significant difference between the mean ratings of male and female principals towards biometrics in curbing examination malpractice in Enugu State.

Methods

Descriptive survey research design was adopted for the study. Nworgu (2015) defined descriptive survey research design as a method that enables the study of a representative subset of people or items to gather and analyze data reflecting the characteristics of the entire group. This approach is typically used to infer findings about a larger population based on the responses from a sample considered to be representative of the population. However, in this study, despite Nworgu's definition of descriptive survey research design, sampling will not be employed. The decision to forego sampling is due to the manageable size of the population being studied. Since the population is manageable for direct study, it is more practical and comprehensive to include all respondents rather than just a subset. This approach ensured that the data are accurate and complete as much as possible for the research objectives. The descriptive survey research design is justified for this study because it will enable comprehensive data collection and analysis from the respondents to accurately reflect the broader population's needs and practices. The area of the study is Enugu State. Enugu State is one of the states located in the South East Zone of Nigeria. It has six educational zones, namely: Agbani, Awgu, Enugu, Nsukka, Obollo-Afor, and Udi. Enugu State is bounded in the East by Ebonyi State, in the West by Anambra State, and in the North by Kogi and Benue States. The language of the people of Enugu State is Igbo, and most of them are involved in agriculture and civil service. The city owes its geographical significance to the discovery of coal in 1909. Its major source of revenue is through coal that is why the state is called "Coal City State". Enugu State is chosen as the area of the study because the researcher was very familiar with the area. The state predominantly, civil servants, traders, farmers and is one of the educationally advantaged states with many secondary schools and tertiary institutions, both public and private. The justification for using Enugu State is that it will provide a comprehensive setting to evaluate and enhance alternative sources of financing to improve overall educational quality.

The population for the study comprised all the principals in the 295 secondary schools in Enugu State which is made up of 169 urban and 126 rural school principals. (Source: Post Primary Schools Management Board (PPSMB), Enugu, 2025). The census sample of the 295 subjects was used. The researcher used census sampling because it is small and manageable. It is in agreement with the postulation made by Okoye (2015) that when a population is small or manageable, the researcher can make use of the whole population. The instrument for data collection was a structured questionnaire developed by the researcher titled "perception of principals towards digital technology in curbing examination malpractice in Questionnaire (PPTDTCEMQ)". The questionnaire has two sections, A and B. Section A focused on the bio-data of the respondents while section B was based on the information on perception of principals towards digital technology in curbing examination malpractice. It has 20 items built in 2 clusters. Cluster 1 has 8 items on perception of principals towards CCTV in curbing examination malpractice. Cluster 2 has 7 items on perception of principals towards biometrics in curbing examination malpractice. The instrument used structured in a 4-point response categories and rating values as follows; Very High Extent (VHE) – 4 points, High Extent (HE) – 3 points, Low Extent (LE) – 2 points and Very Low Extent (VLE) – 1 point. The instrument was validated by three research experts. Two of the experts were from the Department of Educational Management and one from the Department of Mathematics and Computer Education (Measurement and Evaluation option), all from Faculty of Education, Enugu State University of Science and Technology (ESUT), Enugu. They were requested to validate the instrument in terms of clarity, adequacy and appropriateness with particular reference to the purpose of study, research questions

and hypotheses. All the 20 items generated in first draft survived the validation process. However, the validators requested the researcher to make minor editorial adjustments to better align the instrument with the study's objectives. They provided constructive suggestions and criticisms, highlighting areas that needed refinement. These inputs were instrumental in guiding the researcher to develop the final draft of the instrument. Consequently, the refined instrument was used to collect data from the respondents for this study. Meanwhile, none of the questionnaire items were discarded during validation. To ensure the reliability of the instrument, a reliability test was conducted on 20 female principals and 20 male principals in public secondary schools in Ebonyi State. The choice of Ebonyi State was made because of the similar organizational process of secondary schools between both states. Also, they use the same educational policy.

The researcher used Cronbach Alpha method to determine the internal consistency of the instrument which yielded .81 for cluster 1, .83 for cluster 2. The overall reliability index was .81. This showed that the instrument is suitable to be used for this study. The choice of Cronbach's Alpha for computing the reliability of the questionnaire was made because the items do not have binary (Yes or No) answers. Instead, the questionnaire items are likely scaled responses that require a measure of internal consistency across multiple items. Cronbach's Alpha is ideal for this purpose, as it provides a reliable measure of how well the items in a set are positively correlated to one another, ensuring the overall reliability of the instrument. The researcher, was aided by two (2) research assistants, who distributed the copies of questionnaire to the respondents, consisting of both male and female principals. To ensure effective communication, the researcher held a one-day interactive session to brief the research assistants, guiding them on courteous interaction and addressing any queries from the respondents. However, the entire 295 copies of questionnaire administered, the researcher and her research assistants retrieved all the copies making it 100% percent return rate. The research questions were answered using mean and standard deviations. The null hypotheses were tested using t-test statistics at a .05 level of significance. To calculate the mean, each response option was assigned a numerical value based on real limit of numbers: Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1. The interpretation of the hypotheses test were based on the significance (sig.) values obtained from the SPSS output. If the probability values are greater than 0.05, the null hypotheses was rejected. If the probability values are less than 0.05, the null hypothesis was rejected.

Results

Research Question One: What is the perception of principals towards CCTV in curbing examination malpractice in Enugu State?

Table 1: Mean scores and standard deviation on perception of principals towards CCTV in curbing examination malpractice'

ITEMS		Male Principals 169		Female Principals 126		Overall 295		Dec
S/N	CCTV help in curbing examination malpractice by :	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{x}$	SD	
1	detering students from engaging in examination malpractices, as they will be aware of being monitored	2.62	.96	2.58	.89	2.60	.93	GE
2	improving the quality of supervision during examinations, enabling administrators to detect and prevent	2.62	.89	2.55	.94	2.59	.92	GE

3	malpractice more effectively. showing valuable evidence in investigating and prosecuting examination malpractice cases.	2.55	.92	2.59	.89	2.57	.91	GE
4	reducing cheating and other forms of examination malpractice	2.65	.82	2.63	.80	2.64	.81	GE
5	promoting accountability among students, teachers, and administrators, fostering a more transparent examination process.	2.54	.84	2.57	.82	2.56	.83	GE
6	enhancing the overall security of examination halls, reducing the risk of external interference or disruption.	2.59	.82	2.60	.82	2.60	.82	GE
7	influencing student behavior, encouraging them to adhere to examination rules and regulations.	2.63	.80	2.54	.82	2.59	.81	GE
8	enabling real-time monitoring of examination halls, allowing administrators to respond promptly to any incidents of malpractice.	2.56	.89	2.60	.90	2.58	.90	GE
Cluster Mean/SD		2.60	0.867	2.58	0.86	2.59	0.866	GE

In the above Table, the male principals' mean ranged from 2.54 to 2.65, while the female principals' mean ranged from 2.54 to 2.68. The values of their cluster means are 2.59 and 2.58 with standard deviations of .86 and .86 respectively. However, their overall mean ranged from 2.56 to 2.60 with cluster mean of 2.59 and standard deviation of .86. The finding of the study signifies that principals have a positive perception towards CCTV camera in curbing examination malpractice in Enugu State with consistent result.

Research Question Two: What is the perception of principals towards biometrics in curbing examination malpractice in Enugu State?

Table 2: Mean Scores and standard deviation on perception of principals towards biometrics in curbing examination malpractice in Enugu State.

Items		Male Principals 169		Female Principals 126		Overall 295		Dec
S/N	Perception of principals towards biometrics in curbing examination malpractice include:	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{x}$	SD	
9	effectively deter examination malpractices, such as impersonation, by ensuring that only registered students can take exams	2.54	.91	2.50	.95	2.53	.93	HE
10	security, making it difficult for students to cheat or engage in unauthorized activities during exams.	2.52	.93	2.54	.94	2.53	.94	HE
11	accurately identify students, reducing errors and disputes that may arise during exams.	2.51	.90	2.53	.90	2.52	.90	HE
12	promoting a fair and transparent examination process.	2.53	.86	2.53	.88	2.53	.87	HE

13	promoting accountability among students, teachers, and administrators, fostering a culture of integrity and honesty.	2.54	.96	2.58	.93	2.56	.95	HE
14	processes, making it easier to manage student records and track attendance.	2.50	.91	2.52	.90	2.51	.91	HE
15	preventing impersonation, a common form of examination malpractice, by verifying the identity of students taking exams.	2.45	.95	2.48	.90	2.47	.93	LE
Cluster Mean/SD		2.51	0.917	2.52	0.914	2.52	0.918	HE

Data analysis on Table 2, show that male principals' mean ranged from 2.45 to 2.54, while the female principals' mean ranged from 2.48 to 2.58. The values of their cluster means are 2.51 and 2.52 with standard deviations of .91 and .91 respectively. However, their overall mean ranged from 2.47 to 2.56 with cluster mean of 2.52 and standard deviation of .91. The finding of the study signifies that perception of principals towards biometrics in curbing examination malpractice in Enugu State to a high extent. The standard deviations of the respondents suggest that their responses are uniform.

Hypotheses

H₀₁: There is no significant difference between the mean ratings of male and female principals towards CCTV in curbing examination malpractice in Enugu State.

Table 3: Summary of t-test Analysis of the Mean Scores of male and female principals towards CCTV in curbing examination malpractice in Enugu State.

Group	N	$\bar{x}$	SD	df	p-value	Decision
Male Principals	169	2.59	0.86	293	.085	H ₀₁ Not rejected
Female Principals	126	2.58	0.86			

From table 3, the mean scores of male and female principals' stood at 2.59 and 2.59 respectively. This mean revealed that both are so close and suggest no significance differences. Furthermore, at 2.93 degree and at 0.05 level of significance, the calculated P value of 0.05 levels of significance. Based on the above analysis the researcher failed to reject the null hypothesis and therefore, there was no significant difference between the mean ratings of male and female principals towards CCTV in curbing examination malpractice in Enugu State.

H₀₂: There is no significant difference between the mean ratings of male and female principals towards biometrics in curbing examination malpractice in Enugu State.

Table 4: Summary of t-test Analysis of the Mean Scores of male and female principals' perception on towards biometrics in curbing examination malpractice in Enugu State.

Group	N	$\bar{x}$	SD	df	p-value	Decision
Male Principals	145	2.51	.92	293	.091	H ₀₂ Not rejected

Female Principals	150	2.52	0.91
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From table 4, the mean scores of male and female principals' stood at 2.52 and 2.53 respectively. This mean revealed that both are so close and suggest no significance differences. Furthermore, at 2.93 degree and at 0.05 level of significance, the calculated P value of 0.05 levels of significance. Based on the above analysis the researcher failed to reject the null hypothesis and therefore established that there is no significant difference between the mean ratings of male and female principals towards biometrics in curbing examination malpractice in Enugu State.

Summary of Findings

The following are the findings of the study:

1. principals have positive perception towards CCTV in curbing examination malpractice in Enugu State
2. findings of the study shows that principals have positive perception on biometrics in curbing examination malpractice in Enugu State.

Discussion

Findings of the study shows that principals perceives CCTV as effective means of deterring examination malpractices, such as impersonation, by ensuring that only registered students can take exams, security, making it difficult for students to cheat or engage in unauthorized activities during exams, CCTV accurately identify students, reducing errors and disputes that may arise during exams, CCTV promoting a fair and transparent examination process, CCTV promotes accountability among students, teachers, and administrators, fostering a culture of integrity and honesty, processes, making it easier to manage student records and track attendance and preventing impersonation, a common form of examination malpractice, by verifying the identity of students taking exams. This finding agrees with the submission of Oyedemi (2015) who posited that the introduction of innovative technological applications in school is connected with changes, not only at the level of teaching and learning but also in carrying out administrative tasks in schools, as they are vital enabling tools that can no longer be ignored in the administration of schools, with their potential to support the management of complex, standard-related instructional processes and promote communication among staff, students, parents and other stakeholder. There is no significant difference between the mean ratings of male and female principals towards CCTV in curbing examination malpractice in Enugu State.

The findings of the study also showed that biometric effectively deter examination malpractices, such as impersonation, by ensuring that only registered students can take exam, improve security, making it difficult for students to cheat or engage in unauthorized activities during exams, accurately identify students, reducing errors and disputes that may arise during exams, promotes a fair and transparent examination process, promoting accountability among students, teachers, and administrators, fostering a culture of integrity and honesty, processes, making it easier to manage student records and track attendance, processes, making it easier to manage student records and track attendance and prevents impersonation, a common form of examination malpractice, by verifying the identity of students taking exams. Findings of this study are in line with Pierre and Andala (2020) posited that emerging technologies are vital tools in influencing biometric in schools, syllabus coverage and content delivery. The implication of this finding is that STVSS in Enugu State has not been positioned to deliver competitive services in a fast-changing society orchestrated by advances in information and communication technology.

There is no significant difference between the mean ratings of male and female principals towards biometrics in curbing examination malpractice in Enugu State.

Conclusion

This study establishes that principals perceived that emerging technologies have significant influence on examination malpractice. This means that if more education administrators have access to relevant technologies, the quality of their output would increase. Emerging technologies are capable of reducing examination malpractice and great more effectiveness in Nigerian secondary schools. Its use could transform administrative activities in schools and enhance the standard of education. Their introduction for administrative purpose could encounter some challenges which are not insurmountable.

Recommendations

The following recommendations were made based on the research findings.

1. Government should encourage the use of digital technology in examinations
2. The use of biometrics should be encouraged to facilitate easy identification of students tendency to cheat.

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