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Conduct of Senior School Certificate Examination in Electronic Mode:

Preparedness and Attitude of School Administrators in Niger State, Nigeria

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ABSTRACT

This study was carried out to ascertain the preparedness and attitude of school administrators in Niger State towards conduct of Senior School Certificate Examination (SSCE) in electronic mode. Descriptive survey research design was adopted and the sample for the study comprised 300 school administrators from 150 (75 public and 75 private) secondary schools in Niger State. A combination of purposive, proportionate stratified sampling and simple random sampling techniques were used to select respondents for this study. Researchers-designed questionnaire that was divided into section A, B and C was used to collect data on demographic profiles, attitude and preparedness respectively. Using Cronbach alpha formula, the reliability coefficients of the questionnaire for sections B and C were 0.89 and 0.96 respectively. The collected data were analyzed using mean, standard deviation and independent sample t-test statistics. Two research questions were answered and two null hypotheses were tested at 0.05 alpha level of significance. The results revealed that school administrators in Niger State have positive attitude towards conduct of SSCE in electronic mode, but are not fully prepared for it. It also was discovered that while attitudes of school administrators do not differ based on school type, significant difference exists in the level of preparedness for conduct of SSCE in electronic mode. Hence, it was recommended among others that appropriate governments, non-governmental agencies and school administrators should place more priority on making provision for adequate basic facilities in terms of human and materials needed for effective and efficient e-exams system particularly in the public schools.

Keywords: Attitude, Electronic examination, Preparedness, Private and Public Secondary, Schools, School administrators, Senior School Certificate Examination

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Introduction

During the past few decades, there have been an unprecedented revolution in information technology. Technologies have changed the way people live, work and learn. Educational institutions are now adopting new technologies to enable a better learning and assessment. Ahmar, Alraja and Uddin (2016) opine that many institutions have started reconsidering their traditional pencil and paper methods of assessing students and are now considering the viability of conducting electronic examinations. Electronic examination (e-Exam) is an end to end electronic assessment process where Information and Communication Technology (ICT) resources are used for assessment activities and the recording of responses (Dolan, 2009). It involves the conduct of examination through the internet or the use of computers (Ayo *et al.*, 2007).

Electronic examination is also known as Computer Based Test (CBT), Computer Based Assessment (CBA) or Computer Based Examination (CBE). Electronic examination is one of the latest ways of conducting examination in Nigeria, and it has a lot of benefits over the traditional pencil-paper based examination. Among its benefits are that it saves paper, time, money, and it is more secure (Bandele *et al.*, 2015). However, studies have revealed that the unavailability of some ICT components in schools and the inability of teachers and school administrators to adequately utilise the few available ICT components hamper ICT application and use in the Nigerian secondary schools. This should be a matter of concern for every patriotic stakeholder in education, most especially the school administrators.

Secondary school administrators are proprietors, principals, vice principals, registrars and other senior management staff of secondary schools that are responsible for the administration, management, supervision, maintenance and successful day to day activities in schools (Kumar, 2008). Ehondor and Omoruyi (2013) observed that the twenty-first century school administrators face numerous challenges emanating from the technology, and this in no doubt hinders effective integration of ICTs into Nigerian schools. To achieve effective and efficient integration of ICTs into Nigerian schools, there is need for dynamic school administrators that are well prepared to embrace technology.

Preparedness is the state of being ready for a particular situation or for something to happen (Ord, 2010). The preparedness of school administrators to take advantage of computer technology to assist in the schools' activities is an important issue for those concerned with improving the effectiveness of teaching and learning process (Ehondor & Omoruyi, 2013). In the last few decades, preparedness has advanced significantly, there is no organization that can function successfully without a strong preparedness capability. This vital capability is built only through the efforts of planning, training, exercising and positive attitude (Ehondor & Omoruyi, 2013).

Attitude by definition is an inner psychic state influencing behaviour (Butler, 2013). The inner state of a person can be understood from his actions and words. Attitude is not an inborn, instinct phenomenon; it mainly depends upon a person's experience and its impact in a new situation. Attitude towards electronic examination in this study is the ways of thinking and feelings of school administrators towards conducting or taking computer-based test. Thus, it is important that school administrators exhibit positive attitude towards electronic examinations if its implementation for Senior School Certificate Examination would be successful in Nigeria.

Senior School Certificate Examination (SSCE) is the final examination intended for students in the 3rd year of their senior secondary education in Federal Unity College, Federal Secondary Schools, State Secondary Schools and all accredited private secondary schools in Nigeria (Tirozzi, 2002). Examination bodies such as West African Examination Council (WAEC) and National Examinations

Council (NECO) conduct the SSCE. There are two categories of the SSCE, namely SSCE internal and SSCE external. While SSCE internal is for students/candidates in the final year of their senior secondary education, SSCE external is majorly for private candidates/student, that is, students/candidates not in the school system. The two major school types (public and private secondary schools) in the federation usually present students/candidates for the SSCE internal.

There are two major school types in the Nigerian educational system, namely: public and private schools. Public schools are owned, funded and administered by the government or public agency, while private schools are owned, funded and administered by private individual(s) or a corporation. There is no distinction in terms of social-cultural context (climate, religious and tradition) between private and public schools (Nguyen & Raju, 2014). However, studies have revealed that while public schools hardly cover their scheme of work, private schools do. And according to Lubienski *et al.* (2008), the reason why the private schools cover their scheme of work and their students perform better in their SSCE was because of organization of extra-lessons, extension of classes, organization of holiday lessons and availability of ICT facilities. Hence, researchers have recommended that the efforts of private schools should be encouraged. There should be a body set up to maintain balance and uniformity between the two school types.

Statement of the Research Problem

Over the years, the most common type of examination in Nigeria particularly for the conduct of SSCE has been paper-and-pencil based examination. Sadly, this form of examination has been characterized by numerous problems and fraudulent practices such as impersonation, cheating in examination halls, cases of missing scripts, printing and distributing millions of question papers, moving of examination materials across the country by road thereby putting at risk the life of many examination officers, shortage of examination materials, improper scoring of examinees' responses, delay in computing and processing of results, and so forth. This disturbing trend in Nigeria shows that educational measurement is losing credibility; a serious threat to quality educational standard.

However, studies have shown that electronic examination would tackle or drastically reduced the numerous problems and fraudulent practices associated with paper-and-pencil based examination. Public examination bodies such as West African Examinations Council (WAEC) and National Examinations Council (NECO) would want to implement electronic mode for conduct of SSCE. Now the questions, if electronic examinations are to be implemented in Nigerian secondary schools today, are school administrators in Niger State prepared for it? Also, what will be the attitude of the school administrators towards this? It is on this note that the researcher sought to determine the preparedness and attitude of school administrators in Niger State towards conduct of SSCE in electronic mode.

Aim and Objectives of the Study

The aim of the study was to determine the preparedness and attitude of school administrators in Niger State towards conduct of SSCE in electronic mode. Specifically, the study was carried out to:

1. determine the preparedness of school administrators in Niger State for conduct of SSCE in electronic mode.
2. ascertain the difference in the preparedness of school administrators in Niger State for conduct of SSCE in electronic mode based on school type.
3. find out the attitude of school administrators in Niger State towards conduct of SSCE in electronic mode.

4. ascertain the difference in attitude of school administrators in Niger State towards conduct of SSCE in electronic mode based on school type.

Research Questions

The study provided the following research questions:

1. Are school administrators in Niger State prepared for conduct of SSCE in electronic mode?
2. What is the attitude of school administrators in Niger State towards conduct of SSCE in electronic mode?

Research Hypotheses

The following null hypotheses were tested to guide the study:

Ho_1: There is no significant difference in the preparedness of administrators in public and private secondary schools for conduct of SSCE in electronic mode in Niger State.

Ho_2: There is no significant difference in the attitude of administrators in public and private secondary schools for conduct of SSCE in electronic mode in Niger State.

Methodology

The research designed used in conducting the study was descriptive survey. The population for this study comprised the entire secondary school administrators of both public and accredited private secondary schools in Niger State, Nigeria. However, for reason of feasibility, the target population for this study comprised 956 school administrators from 239 secondary schools (public and private) in 10 local government areas selected across the whole seven educational zones in Niger State. The selected local government areas are: Bida, Borgu, Bosso, Chanchaga, Kontagora, Lapai, Mokwa, Paikoro, Rijau and Suleja.

The sample for this study was made up of 300 school administrators from 150 (75 public and 75 private) secondary school in Niger State. A multi-stage sampling technique was employed in selecting respondents for the study. First, 10 local government areas (more than one-third of the entire local government areas in Niger state) were purposively selected across the seven (7) educational zones in Niger State. They were purposively selected to ensure that each of the sampled local government area has both public and accredited private secondary school(s). Thereafter, proportionate stratified sampling technique was used to select 150 (75 public and 75 private) secondary schools from the 10 local government areas. Then, simple random sampling technique was used to select two (2) administrators from each secondary school, making a total of 300 school administrators The research instrument used for data collection was a structured questionnaire constructed by the researchers and validated by two computer-based test (CBT) experts, two e-learning experts, one educational technology experts and one language education expert, all from the Federal University of Technology, Minna, Niger State. The questionnaire comprised section A, B and C. Section A was used to collect demographic data. Section B consisted of ten (10) items that elicited information on the attitude of school administrators while section C consisted of fifteen (15) items that elicited information on the preparedness of school administrators for conduct of SSCE in electronic mode. For section B and C of the questionnaire, a modified four-point Likert scale of Strongly Agree (SA) awarded 4 points, Agree (A) awarded 3 points, Disagree (D) awarded 2 points and Strongly Disagree (SD) awarded 1 point was used. The reliability coefficients of the instrument for sections B and C were 0.89 and 0.96 respectively using Cronbach alpha formula.

Results

The data collected from the sampled administrators were analysed using descriptive and inferential statistics. The two (2) research questions were answered using descriptive statistics of mean and

standard deviation. In section B of the questionnaire, the mean response below 2.50 was adjudged as having negative attitude towards conduct of SSCE in electronic mode, while mean response of 2.50 and above was adjudged as having positive attitude towards conduct of SSCE in electronic mode. Similarly, in section C of the questionnaire, the mean response below 2.50 was adjudged as not being prepared for conduct of SSCE in electronic mode, while mean response of 2.50 and above was adjudged as being prepared for conduct of SSCE in electronic mode.

Independent sample t-test statistics was used to test the two (2) research hypotheses for this study. The significant difference was ascertained at 0.05 alpha level.

Presentation of Results as per Research Questions

Research Question 1: Are school administrators prepared for conduct of SSCE in electronic mode in Niger State?

Table 1: Mean and Standard Deviation of Administrators' Responses on Preparedness for Conduct of SSCE in Electronic Mode in Niger State

S/N	Item	N	Mean	SD	Decision
1	There is a well-equipped computer laboratory	300	2.44	0.811	Disagree in my school.
2	There are functional AC or fans in my school computer laboratory.	300	2.25	0.803	Disagree
3	The available and functional computers in my school computer laboratory can accommodate all the SSCE candidates at once or at most three batches.	300	2.13	0.853	Disagree
4	Apart from the Computer teachers, there are other computer specialists/technicians who are employed to manage and maintain the computer laboratory in my school.	300	2.52	0.830	Agree
5	There is internet/intranet/wireless facility in my school computer laboratory.	300	2.28	0.891	Disagree
6	The ICT personnel/teachers in my school are adequately trained to conduct electronic examination/CBT.	300	2.60	0.854	Agree
7	Computers are used for examination in my school.	300	2.01	0.714	Disagree
8	There is alternative source of power supply that can be used to conduct electronic examination/CBT in my school	300	2.59	0.858	Agree
9	Students in my school have been introduced to the fundamentals of computer appreciation and internet utility.	300	3.13	0.763	Agree
10	The available manpower in my school is sufficient to ensure a successful implementation of electronic examination/CBT.	300	2.65	0.755	Agree
11	There are staff in my school who usually attend seminar/training on computer appreciation and internet utility.	300	2.60	0..754	Agree
12	ICT or computer studies is a core subject in my school.	300	2.63	0.916	Agree
13	Adequate fund is available to my school to embark on electronic examination/CBT.	300	2.28	0.901	Disagree
14	Software for e-Testing or to practise electronic examination are available to teachers and students in my school.	300	2.24	0.806	Disagree
15	My school is adequately prepared to embark on electronic examination/CBT.	300	2.31	0.762	Disagree

Grand Mean	**2.44**	**Disagree**

Decision mean = 2.50

Table 1 shows that a total number of 300 administrators responded to the 15 items. Respondents agreed to 7 out 15 items and the grand mean score of response to all the 15 items is 2.44 which is less than the decision mean score of 2.50. This implies that school administrators in Niger State are not prepared for conduct of SSCE in electronic mode.

Research Question 2: What is the attitude of school administrators in Niger State towards conduct of SSCE in electronic mode?

Table 2 Mean and Standard Deviation of School Administrators' Responses on Attitude towards Conduct of SSCE in Electronic Mode in Niger State

S/N	Item	N	Mean	SD	Decision
1	I prefer electronic exam/CBT to the pencil and pa per-based exam.	300	3.21	0.641	Agree
2	I want WAEC and NECO to conduct SSCE in elec tronic mode	300	2.82	1.053	Agree
3	I wish to learn more about electronic exam/CBT.	300	3.58	0.596	Agree
4	Participating in electronic examination would not only test the students' knowledge, but also expand it.	300	3.27	0.763	Agree
5	Conducting SSCE in electronic mode would en sure prompt or timely release of examination results.	300	3.42	0.621	Agree
6	Using electronic mode for conduct of SSCE would improve the performance of students.	300	2.81	0.833	Agree
7	The devices that are used for electronic exam/CBT are reliable.	300	2.78	0.743	Agree
8	Electronic examination/CBT would help improve the computer skill of students.	300	3.38	0.870	Agree
9	Conducting SSCE in electronic mode would reflect the true performance of every student.	300	2.85	0.824	Agree
10	Conducting examination in electronic mode would reduce examination malpractices.	300	3.30	0.713	Agree
	Grand Mean	**3.14**		**Agree**	

Decision mean = 2.50

Table 2 shows that a total number of 300 school administrators responded to the 10 items. Respondents agreed to all the 10 items and the grand mean score of response to all the 10 items is 3.14 which is greater than the decision mean score of 2.50. This implies that school administrators in Niger State have positive attitude towards conduct of SSCE in electronic mode.

Testing of Hypotheses

Hypothesis 1: There is no significant difference in the preparedness of administrators in public and private secondary schools for conduct of SSCE in electronic mode in Niger State.

To test this hypothesis, independent sample t-test was applied on the response mean scores of administrators in public and private secondary schools regarding their preparedness for conduct of SSCE in electronic mode in Niger State as presented in Table 3.

Table 3: Independent Sample t-test Analysis on the Mean Scores of Administrators' Responses on their Preparedness for conduct of SSCE in Electronic Mode

School Type	N	Mean	S.D	Df	t-value	p-value	Decision
Public	150	42.82	13.268	298	8.969*	0.000	Reject (Ho_1)
Private	150	54.27	11.502				

* = Significant at 0.05 level

The result presented in the table 3 shows that administrators in public school had a mean score of 42.82 with standard deviation of 13.268, while administrators in private schools had a mean score of 54.27 with standard deviation of 11.502. This is further illustrated in the figure 1.

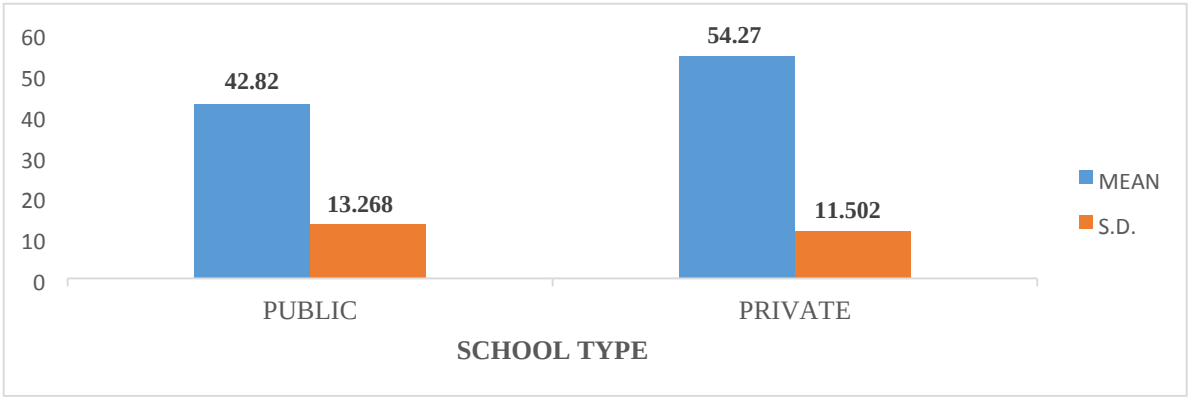

Figure 1: Difference in the preparedness of school administrators based on school type

The results presented in Table 3 reveal a significant difference in the mean score of the two groups ($t=8.969$, $df = 298$, $p < 0.05$). Hence, the null hypothesis one (Ho_1) was rejected. This implies that there was a significant difference in the preparedness of school administrators in public and private schools for conduct of SSCE in electronic mode in Niger State in favour of administrators in private schools.

Hypothesis 2: There is no significant difference in the attitude of administrators in public and private secondary schools towards conduct of SSCE in electronic mode in Niger State.

To test this hypothesis, independent sample t-test was applied on the mean scores of administrators' responses on their attitude towards conduct of SSCE in electronic mode as presented in Table 4.

Table 4: Independent Sample t-test Analysis on the Mean Scores of Administrators' Responses on their Attitude towards conduct of SSCE in Electronic Mode

School Type	N	Mean	S.D	Df	t-value	p-value	Decision
Public	150	77.94	11.247				
				298	0.850^{ns}	0.396	Accept
(Ho_3)							
Private	150	79.12	11.526				

NS: Not Significant at 0.05 level

The result presented in the table 4 shows that administrators in public school had a mean score of 77.94 with standard deviation of 11.247, while administrators in private schools had a mean score of 79.12 with standard deviation of 11.526. This is further illustrated in the figure 2.

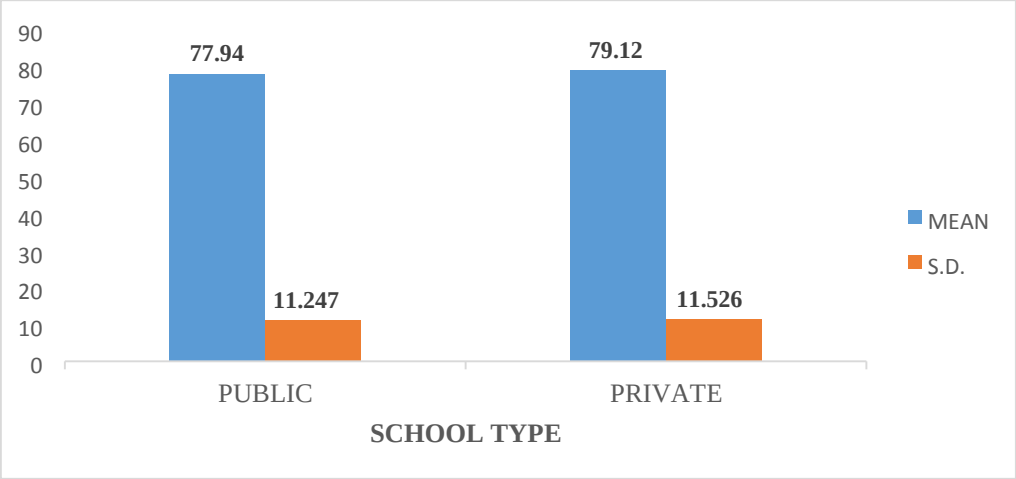

Figure 2: Difference in the attitude of school administrators based on school type

The results presented in Table 4 reveals an insignificant difference in the mean score of the two groups (t=0.850, df = 298, p < 0.05). Hence, the null hypothesis two (Ho_2) was accepted. Thus, there is no significant difference in the attitude of administrators in public and private schools towards conduct of SSCE in electronic mode in Niger State. This implies that attitudes of administrators in Niger State do not differ towards conduct of SSCE in electronic mode based on school type.

Comparison of students' mean scores responses on preparedness and attitude towards conduct of

SSCE in electronic mode in Niger State is illustrated in the figure 3.

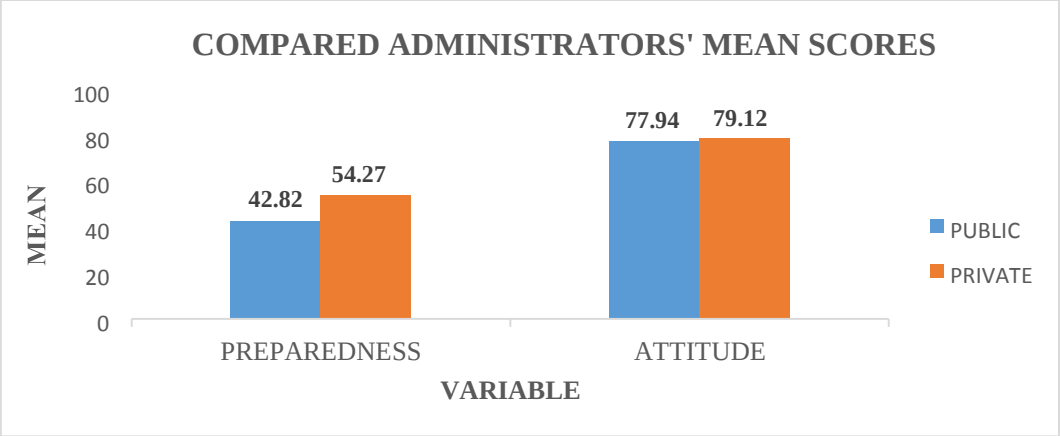

Figure 3: Compared mean scores of administrators' responses on preparedness and attitude

Discussion of Findings

Finding that emanated from this study regarding the preparedness of school administrators in Niger State for conduct of SSCE in electronic mode revealed that school administrators in Niger State are not prepared for conduct of SSCE in electronic mode. This could be because of the inadequate availability of basic ICT facilities needed for electronic exams in schools. This finding is in line with findings from previous researchers Ukpong (2016) and Ngeze (2017) who found that school administrators are not prepared and fully ready for electronic teaching and examination. The finding contradicts with findings from previous researchers Termit and Samli (2014) and Egunjobi (2015) in which school administrators and teachers are found be ready and fully prepared to utilise ICT-facilities for teaching and assessment/examination.

Another finding of this study revealed that school administrators in Niger State have positive attitude towards conduct of SSCE in electronic mode. This finding concurred with findings from previous researchers Muthomi, *et al.* (2013), Olawale and Shafiu (2014), Termit and Samli (2014) who found that school administrators and teachers exhibit positive attitudes towards electronic examination. The finding contradicts with findings from previous researchers Amara (2006) and Unachukwu and Nwankwo (2012) in which school administrators and teachers exhibit negative attitudes towards electronic examination. The positive attitude of school administrators towards conduct of SSCE in electronic mode in Niger State was perhaps due to numerous advantages that electronic form of examination has over the paper and pencil form of examination.

Hypothesis one (Ho_1) finds out if there is a significant difference in the preparedness of administrators in public and private schools for conduct of SSCE in electronic mode in Niger State. The result revealed that a significant difference exists in favour of administrators in private schools. This was perhaps due to the fact that there is relative more efforts on setting up and use of ICT infrastructure in private schools than public schools in Niger State.

Hypothesis two (Ho_2) finds out if there is a significant difference in the attitude of administrators in public and private schools towards conduct of SSCE in electronic mode in Niger State. The result revealed that there was no statistically significant difference in the attitude of administrators in public and private secondary schools towards conduct of SSCE in electronic mode in Niger State. Thus, attitudes of school administrators in Niger State towards conduct of SSCE in electronic mode do not differ based on school type. **Conclusion**

Based on the findings of the study, it was concluded that administrators in Niger State have positive attitude towards conduct of SSCE in electronic mode, but are not prepared/ready for it. It was discovered that, there is inadequate availability of basic facilities in terms of human and materials that can facilitate effective and efficient e-exams system particularly in the public secondary schools in Niger state. Thus, while the attitudes of school administrators in Niger State towards conduct of SSCE in electronic mode do not differ based on school type, the finding that emanated from this study regarding the preparedness of school administrators in Niger State for conduct of SSCE in electronic mode revealed a significant difference in favour of administrators in private schools.

Recommendations

The following recommendations are proffered based on the findings of this study:

1. Appropriate governments, Non-governmental Organizations (NGOs) and school administrators should place more priority on making provision for adequate basic facilities in terms of human and materials needed for effective and efficient e-exams system particularly in the public schools so that the level of preparedness in both school types are equally okay.

2. Free computer literacy programmes, particularly on the e-exam system/ICT facilities should be organized by the appropriate governments at regular intervals for the school administrators and the teachers. This will enable school administrators and teachers to acquire basic and needed skills in ICT-facilities for efficient instructions and effective e-exams system.

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