



# Effects of High–Stakes Examinations on the Teaching and Learning of Physics in Secondary Schools in Nigeria

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## Abstract

The results of candidates in high-stakes examinations have significant consequences for schools and or students. Therefore in this study, the author examined the likely effects of high-stakes examinations on the teaching and learning of Physics in senior secondary schools in Nigeria. In this study the examinations that the author considers as high-stakes are specifically the ones that determine prospective candidate entry to tertiary institutions (Universities, Polytechnics, and Colleges of Education) in Nigeria. Thirty secondary school Physics teachers were randomly sampled from Ibadan Educational Zone I, Oyo state, Nigeria. In addition 862 (Boys = 513; Girls = 349) senior secondary school three students were sampled. These were the students being taught by these teachers. Two Forms (A and B) of Questionnaires, titled “High-stakes Examination and Teaching-Learning of Physics”, were used to collect data. The data collected were analysed using frequencies, percentages and Chi Squared. Results show that most of the students reported that when studying physics they try to understand the basic concepts, master the fundamental principles of Physics, memorize formulae and procedures, and practice old/past examination questions. Most of the students are anxious about SSCE and about half of the students are afraid of failure in SSCE. More males than females indicated high level of anxiety. Most of the teachers indicated that they use lecture method often in order to complete WAEC syllabus within the regulated time. Physics teachers seem to feel being under pressure to teach to the test. Physics teachers should adjust their teaching method so that students can master the fundamental principles of physics.

**Keywords:** High-stakes Examination, Test Washback, Physics Teaching-learning, Public Examining Bodies.

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## INTRODUCTION

Worldwide, high-stakes examinations are very important to all stakeholders in the educational system including the teachers, students, parents, public examining bodies, and policy makers. High-stake examinations, besides gauging the quality of teaching and learning in schools, they also determine the future career of students. Researchers such as Smyth, Banks and Calvert in Aysel (2012) describe ‘high-stakes tests as standardized examinations, the results of which have significant consequences for schools and/or students. Heubert’s (2000) description was very similar to that of Smyth, Banks and Calvert (2011). To Heubert, high-stakes assessments are those used to make significant educational decisions about students, teachers, schools or school districts.

In Nigeria, examples of high-stakes examinations are specifically the ones whose results thereof determine candidates’ entry into tertiary institutions (Universities, Polytechnics, Monotechnics, and Colleges of Education). Examples of such examinations are the ones conducted by the West African Examination Council (WAEC), National Examination Council (NECO) for final year students of senior secondary schools and National Board for Technical and Business Education (NABTEB) for final year students of technical schools. In Nigeria, the examination being conducted by these public examining bodies is known as Senior School Certificate Examination (SSCE). It is a standardized examination in which candidates must pass at minimum of credit level in at least five subjects including English Language.

However, there are other different types of high-stakes examinations. For example, there is an assessment system at the junior secondary school level, which determines entry to senior secondary school level and technical schools. This examination is usually prepared and conducted by the State Ministry of Education. Also there is Unified Tertiary Matriculation Examinations (UTME) being conducted by the Joint Admissions and Matriculation Board for candidates who wish to gain admission into Universities, Polytechnics and Colleges of Education. It is assumed that those who wish to take UTME must have had the requisite passes in the SSCE.

In Nigeria, a lot of importance is attached to level of success of candidates in the SSCE being conducted by WAEC and NECO. For example, proprietors of private secondary schools attach promotion and increase in salary of teachers to number of students who do well in the SSCE being conducted by WAEC and NECO. Even such schools flaunt their success for all to see. This is because parents will likely send their children to schools which are known to have high success rate in Senior School Certificate Examination (SSSCE). Also State Governments that control and manage public secondary schools assess the quality of the school system and teachers by the number of students who have five credits and above in the examination. In addition, the Electoral Act and the 1999 Constitution (As Amended in 2004) of the Federal Republic of Nigeria (Section 65 subsection 2a) requires that all candidates for elective position into legislative and executive arm of government shall be educated up to school certificate level. That a candidate shall be educated up to school certificate level has been interpreted to mean that he or she must have a minimum of five passes/credits in five Ordinary level papers including English language. This further underscores the importance of SSCE being conducted by the examining bodies such as WAEC, NECO and NABTEB.

The importance attached to standardized tests is not peculiar to Nigeria. For example, in the United States of America, the ‘No Child left Behind’ policy means that standardized examinations play an important role for schools to get funding and for teachers to get or keep a

job (Dee & Jacob, 2011). In England, testing begins at the ages of seven; these tests are called the Standard Attainment Tasks 2 and Tests (SATs) (Gregory & Clarke, 2003). The purpose of the SATs is to show if students have reached the National Curriculum learning targets. School funding can be affected by the results of SATs. All of these examinations are high-stakes examinations for schools and/or for students.

Because of the importance attached to success rate in the high-stakes examinations, teachers often struggle to meet the demands of proprietors, government and parents. That is they struggle so that their students do well in the examinations. Students on the other hand struggle to satisfy their parents and guardians and also struggle to meet the requirements for admissions into tertiary institutions. Because of this, there can be a 'washback effect' on teaching and learning. That is "shaping both what is taught and how it is taught" and often changing the frame in terms of what counts as worthwhile knowledge (Conway & Sloane, 2005, p. 28). Washback or backwash, also known as measurement-driven instruction (Cheng, 2000), is a common term in applied linguistics referring to the influence of testing on teaching and learning, which is a prevailing phenomenon in education. In this study, the major focus is assessment of such washback effect on the teaching and learning of Physics among senior secondary school physics teachers and students.

The importance of Physics in career aspiration of students in science-based subjects cannot be overemphasized. This is because Physics is required for nearly all science-based courses in the University, Polytechnics and Colleges of Education. For examples, in all Universities in Nigeria courses such as Basic Medical Sciences (Medicine, Dentistry, Nursing, Pharmacy, and Biochemistry), all disciplines in Engineering, Mathematics, and Chemistry require at least a credit pass in Physics. It means therefore that any prospective candidate who fails to have a credit pass in Physics may not have the opportunity to actualize his or her dream to make a career in science-based course.

Many studies have been carried out on the effects of high-stakes examinations on the teaching and learning of mathematics (Aysel, 2012; Phelps, 2001; Stetcher, 2002) and English Language (Cheng & Curtis, 2004; Wanatabe, 2004, Yildirim, 2010), and there is a considerable amount of evidence to suggest that washback effects do exist. However, some studies did not find appreciable results to confirm the backwash effect in English and mathematics. This suggests that more researches are needed. There is dearth of literature on washback effect of high-stakes examination in the area of Physics. In the area of Mathematics, the results of survey research conducted by Stecher (in Aysel, 2012) on the high- stakes testing on classroom practices in the United States of America showed both positive and negative potential effects on teaching methods and on students' learning.

The positive potential effects on students were that high-stakes testing provides students with better information about their own knowledge and skills, motivates students to work harder in school, sends clearer signals to students about what to study, and rewards students' efforts. The negative potential effects on students were that tests may discourage them from trying, make students more competitive, and influence students not to do higher grades and school assessments (Stecher, 2002, p. 86). Some of the potential effects on teachers mentioned were that tests may motivate teachers to work harder, help them to diagnose student difficulties, encourage teachers to focus more on specific test subjects rather than on curriculum standards, and guide teachers to participate in inappropriate test preparation.

In addition to the findings of Stetcher (2002) in the area of mathematics, Phelps (2001) chose six out of the nine top-performing countries on the Trends in International Mathematics

and Science Study (TIMSS) eight-grade mathematics test and compared how they controlled their curriculum and instruction systems. Phelps found that most of high-achieving countries had more than one high-stakes examination. He found that a country's performance on the TIMSS study was positively correlated with the number of decision points in their education system, and this was true even when GDP was controlled for. This implies that the more the number of high-stakes examinations a country makes its school take, the better the performance of the children in the TIMSS. This suggests that high-stakes examination prepare the students for the TIMSS.

In their study Abrams, Pedulla and Madaus (2003) conducted a survey in which teachers were asked to rate their level of agreement with statements concerning their state testing programs, classroom practices, and student learning. The states were classified according to the consequences of test results for districts, teachers and schools; and the consequences of test results for students. There were three levels of test result implications: These were high-stakes moderate-stakes and low-stakes. In their paper, Abrams, Pedulla and Madaus (2003) made a comparison between states that had high-stakes consequences for all of districts, teachers, and schools and for students, and states that had low or moderate stakes consequences for districts, schools, and teachers and low stakes consequences for students. One of their results was that 43% of teachers in high-stakes states, compared to 17% of teachers in low-stakes states, indicated that they had increased the time spent on tested material a great deal because of the state examination. This was at the expense of material that was not tested. Teachers in both high-stakes (76%) and low-stakes (63%) states reported that the state tests led them to teach in ways contrary to their ideas of good practice. These teachers were likely to use old examination questions or commercially produced revision materials to prepare students for tests. Teachers in high-stake states reported that they felt under pressure from their employers (and from parents) to raise students' scores on state tests. However, 57% of teachers in high-stake states (as opposed to 37% in low-stake states) felt that these tests should be used to decide if students graduate from high school. Teachers had some bad things to say about tests but they still wanted to use them. Abrams et al. (2003) found that 35% of teachers in high-stakes states and 20% of teachers in low-stakes states strongly agreed that students were very anxious because of the state examination.

Madaus (in Aysel, 2012) wrote a summary of many of the effects of high-stakes examinations. Some of the advantages he mentioned are: high-stakes examinations are objective; they provide national homogeneity in education and they encourage students to focus more on studying. According to him some of disadvantages are: they tend to encourage students to pay more attention to material covered in examinations and as a consequence of that many worthwhile educational objectives and experiences are not addressed in the teaching and learning of the subject; preparation for the test overemphasizes rote-memorization by students and drill-and-practice as a teaching method; teaching to the test can encourage students to perform without higher levels of knowledge; they are carried out in a very limited time; they can be stressful and they can negatively affect students' self-concept and self-esteem; they can make some students be anxious and unnecessarily fearful.

According to Sarason, Davison, Waite, Lighthall and Ruebush (1960) we live in a test-conscious, test-giving culture in which the lives of people are in part determined by their test performance. Although the observation was made about sixty years ago what is striking is that it could so easily read for the present-day climate faced by schoolchildren the Nigeria and indeed elsewhere in the world. An examination of the literature reveals a large number of studies dealing with the topic of test anxiety. These have been conducted with a variety of frames of

reference ranging from construct validation studies to developmental studies to factor analysis and desensitization theory studies.

Earlier studies as reported in Educational Testing Services documents (such as ETS, 1968) converge to show that multidimensional scaling of test situations reflects that test can differ in their tension – (anxiety) arousing properties as a function of (a) the subjective importance that examinees/testees attach to the test and (b) how well prepared the examinees feel for the test. Anxiety is thought to be greater on a subjectively important test than an unimportant test. It follows therefore that in high-stakes examination such as SSCE, it is highly probable that some candidates will exhibit some form of anxiety.

In the 20<sup>th</sup> century, psychologists (Spielberger & Vagg, 1995) view test anxiety construct as a situation-specific trait accounting for individual differences in the extent to which people find examinations threatening. Within this general conceptualisation there are broad and narrow definitions. Narrow definitions focus on fear of failure (emphasising how performance is judged), or evaluation anxiety (emphasising how test anxiety can be located with other, so called, subclinical anxieties including sports performance, public speaking, and so forth). These emphasise a social dimension where the performance is judged by others. Spielberger's (1966) notion of 'ego threat' offers a potentially broader definition by including threats to self-esteem and the consequences of performance success or failure, in addition to potential derogatory judgment by others. Zeidner (1998) outlines three components of test anxiety:

- Cognitive: the negative thoughts and depreciating self-statements that occur during assessments (e.g. 'If I fail this exam my whole life is a failure') and the performance-inhibiting difficulties that may arise from anxiety (e.g. recalling facts and difficulty in reading and understanding questions);
- Affective: the person's appraisal of their physiological state (such as tension, tight muscles and trembling);
- Behavioural: poor study skills, avoidance and procrastination of work.

In this study, one of the objectives was to find the extent to which students are anxious about high-stakes examination such as SSCE in Nigeria.

As explained in the preceding sections, there are many studies in the area of language and mathematics. More importantly these studies were conducted mostly in the Western Europe such as United Kingdom (Saville & Hawkey, 2004) and Greece (Tsayari, 2009) and in Asia such as China (Qi, 2005; Chen & He, 2003). Ayse (2011) study conducted in Turkey was in the area of Mathematics. There is, however, dearth of empirical studies in the area of Physics and importantly there is dearth of literature on effect of high-stakes examinations on teaching and learning in the sub-Saharan Africa and especially in Nigeria. Studies such as being conducted by this author will provide teachers teaching Physics in the terminal classes the opportunity to evaluate their teaching behavior and adjust appropriately towards assisting students to acquire knowledge rather than focusing on passing examinations only. Physics students will also be able to adjust their learning style. Guidance and Counsellors will have empirical information on the need to adequately guide and counsel final year students against being anxious and the need to develop good study habits.

In this study, the author sought to determine the extent to which SSCE affect teaching of Physics by the teachers (such as teaching method being adopted, conduct of extra lessons and quantity of teaching) and learning of Physics by the students (study methods being used and

anxiety level). Specifically, the author answered two questions and tested one hypothesis. These are:

### **Research Questions**

- What are the influences of SSCE (high-stakes examination) on the teaching of physics by the Physics teachers?
- What are the influences of SSCE (high-stakes examination) on the learning of physics by the students?

### **Hypothesis**

- Gender of the student does not affect his or her level of anxiety about SSCE.

## **METHODOLOGY**

### *Participants*

Thirty senior secondary schools were sampled in Ibadan Educational Zone I, Oyo State, Nigeria. From each school, Physics teacher teaching the terminal class (that is senior secondary school Three SSS 3) in each school was sampled. Thus in all thirty physics teachers were sampled. Among these Physics teachers 21 (70 %) were men and 9 (30 %) were women. The age range of the teachers was between 29 and 54. The mean age of the teachers was 33years (SD =4.85). All the teachers sampled had at least First Degree.

In addition all the SSS 3 Physics students in each of the school sampled participated in the study. In all, the student sample size was 862. Among these 862 students sampled, 513 (59.5 %) were boys and 349 (40.5 %) were girls. The ages of the students ranged from 16 and 18. The average age was 16.8 (SD = 1.1)

### *Materials*

Two forms of Questionnaires were used for collection of data. These were titled: “High-stakes Examination and Teaching-Learning of Physics – Form A” (HETLP Form A) and “High-stakes Examination and Teaching-Learning of Physics – Form B (HETLP Form B)”. The HETLP Form A was administered to Physics teachers while HETLP Form B was administered to students. The HELTP Form ‘A’ consisted of two sections ‘A’ and ‘B’. Section ‘A’ sought information on Demographics, while section B consisted of seven items (See Appendix I). The reliability of the HELTP Form ‘A’ was determined using test-retest method. The reliability index was 0.79. The HELTP Form ‘B’ consisted of two sections ‘A’ and ‘B’. Section ‘A’ sought information on Demographics, while section B consisted of eight items (See Appendix II). The reliability of the HELTP Form ‘A’ was determined using test-retest method. The reliability index was 0.83.

### *Method of Data Collection*

For this study, the author engaged the services of six of his In-service M.Ed. students and one doctoral student in the Institute of Education, University of Ibadan to administer the two forms of

questionnaires. The M.Ed. students were offering EVE 737-Statistics Method. On the first visit HELTP Form A was administered to the Physics Teachers and on the second occasion, HELTP was administered to the students. The average response time for the HELTP Form A was 18 minutes while for the Form B it was 22 minutes. The administration of the two Forms of questionnaires took place during the 2017 April/May SSCE being conducted by WAEC. Each Form of the questionnaires were administered and collected immediately.

### *Method of Data Analysis*

The data collected were analysed using frequencies, percentages. For the differences between boys and girls level of anxiety Chi Square Statistics were adopted and the level of significance was set at  $p < 0.05$ .

## **RESULTS**

The results are hereby presented in the order that the research questions were raised.

**Research Question One:** What are the influences of SSCE (high-stakes examination) on the teaching of physics by the Physics Teachers?

Table 1: Teachers Responses

		Response		
		Yes	No	Total
1	Does SSCE being conducted by the WAEC affect the way you teach Physics	26 (86.7)	4 (13.3)	30 (100.0)
2	If Yes, In what direction does SSCE being conducted by the WAEC affect the way you teach Physics?			
	a) Puts me under pressure to cover all the topics in the syllabus	23 (88.5)	3 (11.5)	26 (100.0)
	b) Encourages me to concentrate on areas/questions that usually come out in SSCE	21 (80.8)	5 (19.2)	26 (100.0)
	c) Encourages me to practice past/old questions with my students	24 (92.3)	2 (7.7)	26 (100.0)
2a	What method of teaching do you usually adopt in order to cover the syllabus?			
	a) Lecture method	23 (76.7)	7 (23.3)	30 (100.0)
	b) Demonstration	12 (40.0)	18 (60.0)	30 (100.0)
	c) Discussion	5 (16.7)	25 (83.3)	30 (100.0)
	d) Peer Tutoring	0 (0.0)	30 (100)	30 (100.0)
	e) Laboratory practical	19(63.3)	11 (26.7)	

The majority (86.7%) of the Physics teachers sampled were of the opinion that the SSCE (high-stakes examination) influenced the way they teach. More importantly majority of the teachers mentioned more negative effects than positive effects. Some of the teachers (80.2%) indicated that they had to teach to the examination and covered mostly examination materials. Some teachers (88.5 %) felt that the examination gave their teaching structure and ensured that all topics are covered. The teaching method being applied by most of the Physics teachers was lecture method. Apparently this method was adopted because the teachers were under pressure to complete the WAEC syllabus within the stipulated time.

As table 2 shows most of the teachers (96.7%) sampled responded that they teach contents that are directly related to the examination. In addition, some teachers responded that they trained their students for the examination. This they do by practicing past and old questions that were set by WAEC in previous examinations. As table 2 shows that 29 out of the 30 teachers sampled indicated this. In Nigeria students require at least a credit pass in Physics and in other four subjects in SSCE being conducted by WAEC and NECO to gain admission into tertiary institutions to read science-based courses. This could possibly be one reason why physics teachers seem to place so much emphasis on the SSCE.

Table 2: Teacher Response on Extent of Practice of Past Questions

Statements	Response		
	LE	SE	NA
To what extent do you practice past/old questions with your students?	24 (80.0)	5 (16.7)	1 (3.3)

Some studies found results that are quite similar to the results of my study. For example, Lyons et al. (2003) and Hourigan and O'Donoghue (2006), whose works were in the area of backwash effect of high stakes examination mentioned that the culture in Irish mathematics classes was 'teaching to the examination'. In corroborating this, Au (2007) mentioned that one effect of a high-stakes examination system is that emphasis may be placed on teaching content directly related to the examination instead of on general subject knowledge.

**Research Question Two:** What are the influences of SSCE (high-stakes examination) on the learning of physics by the students?

Table 3: Students responses to influence of High-stakes Exams on Learning

Statements	Response	
	Yes	No
1 Does SSCE being conducted by the WAEC affect the way you learn Physics in SS Three?	862 (100.0)	0 (0.0)
2 If Yes, In what direction does SSCE being conducted by the WAEC affect the way you learn Physics?		
a) Encourages me to read all the topics in the syllabus	490 (56.8)	372 (43.2)
b) Encourages me to me to practice past/old questions with my colleagues	764 (88.6)	98 (11.4)
c) Encourages me to read to pass	742 (86.1)	120 (13.9)
d) Encourages me to attend class more regularly	757 (87.8)	105 (12.2)
e) Encourages me to concentrate more on areas that usually	558 (67.8)	304 (32.2)

	come out in SSCE		
	f) Encourages me to understand Physics concepts	720 (83.6)	142 (16.4)
3	What method of teaching do you use to learn Physics?		
	a) Practice past/old questions	739 (85.7)	123 (14.3)
	b) Practice questions from textbooks	668 (79.1)	180 (20.9)
	c) Memorization of concepts in Physics	598 (69.4)	264 (30.6)
	d) Reading Textbooks	720 (83.5)	142 (16.5)
4	Are you afraid of failure in SSCE?	435 (50.5)	427 (49.5)

As table 3 shows all the students indicated that SSCE being conducted by WAEC has influence on the way they learn physics. The effects of these high-stake examinations are positive and negative. In the questionnaire Form B, the students were asked how they studied physics. The majority of the students indicated that they tried to understand the fundamental principles and basic concepts of Physics and attend classes more regularly. The negative aspect of the effects is that they encourage students to memorize formulae and procedures. The high-stakes examinations make students to engage in practicing old and past questions that were set by WAEC.

The students were asked the extent to which they practice old/past questions. As table 4 shows 393 (45.6%) indicated to “a large extent”, 436 (50.6) indicated to “some extent” while only 33 (3.8) indicated “not at all”. This result implies that practicing past and old questions is important to most of the physics students.

Table 4: Students’ Response on Extent of Practice of Past Questions

Statements	Response		
	LE	SE	NA
To what extent do you practice past/old questions?	393(45.6)	436(50.6)	33(3.8)

In order to assess the level of anxiety of the students about SSCE, the students were asked if they are afraid of failure in SSCE. In their responses 535 (62.1%) indicated that they are of failure in the SSCE. In their responses to their level of anxiety, as table 5 shows, 264 (30.6%) indicated to “a high extent”, 215 (24.9%) indicated to “a moderate extent”, 56 (6.4%) indicated to “a low extent” while 327 (37.9%) indicated “not at all”

Table 5: Students Response on Anxiety about SSCE

Statements	Response			
	HE	ME	LE	NA
To what extent are you anxious about SSCE?	264 (30.6)	215 (24.9)	56 (6.4)	327(37.9)

In order to assess which group of student was more anxious the students’ responses were subjected to Chi Square analysis on the male-female dichotomy. This led to research question three.

**Hypothesis:** Gender of the student does not affect level of anxiety about SSCE

To test this hypothesis, Chi Square was used. Table 6 presents the results of the analysis.

Table 6: Chi Squared Analysis of Gender Influence on Anxiety about SSCE

Statements		Response				Total	$\chi^2$
		HE	ME	LE	NA		
To what extent are you anxious about SSCE?	Boys	163(31.8)	105(20.5.)	42(16.2)	113(22.0)	513(100.0)	42.79*
	Girls	101(28.9)	110(31.5)	14(4.01)	134(38.4)	349(100.0)	
Total		264	215	56	327	862(100.0)	

The result shows that more boys than girls indicated high level of anxiety. The table also shows that more girls indicated not at all than boys. The observed differences in the boys and girls were statistically significant  $\chi^2$  (N = 662, Df = 9) = 42.79,  $p < 0.05$ .

## DISCUSSION

In the introductory aspect of this report, the positive and negative effects of high-stakes examinations were summarised. Research has found that high-stakes examinations among others encourage students and teachers to pay more attention to material covered in examinations (and as a consequence many worthwhile educational objectives and experiences may not be addressed in the teaching and learning of the subject) (Stecher, 2002; Koretz et al., 2001; Abrams et al., 2010; Au, 2007), are stressful and they negatively affect students' self-concept and self-esteem; (Madaus, 1991; Abrams et al., 2010; Leonard and Davey, 2001), may lead to teaching to the test (Shepard, 2002; Au, 2007) may encourage students to perform without higher levels of knowledge due to teaching to the test (Madaus, 1991; Kohn, 2000, Linn, 2000), may lead to teachers adopting certain teaching methods (sometimes contrary to their own belief on what constitutes good practice) which are not useful for students (Au, 2007; Johnston & McClune, 2000). Kelleghan et al. (1996) mentioned that students motivated by external examinations are likely to have performance goals and not learning goals. Alkharusi (2008) studied classroom assessment that was focused on grades, and not on learning, and stated that these examinations encouraged students to have performance rather than learning goals. The findings of my study are in line with that of past researchers cited in this work. Most of the students in my study seemed to be focused on doing well on the examinations. At the same time, many of them wanted to understand the ideas of physics.

On the assessment of the anxiety level of the students, results show that majority of the students were anxious about SSCE. Furthermore more boys than girls indicated high level of anxiety. These findings in my study might not be unconnected with the value which boys in science class normally attach to success in physics. My experience as physics teacher shows that boys generally see physics as domain of boys and as such are always eager to pass, at least at the credit level. This is because a minimum credit in physics is needed to study science based course such as engineering which is regarded as male dominated profession. Research (Putwain, 2008) shows that many highly test-anxious students make more effort than low test-anxious students as a compensatory mechanism. Therefore the results of this study confirm that an important

variable that is likely to affect anxiety is the subjective importance of the test. The senior school certificate examination is a high-stakes examination upon which so many decisions are usually taken, therefore it is highly probable that it can generate tension among students are preparing for the exams.

## CONCLUSION AND RECOMMENDATIONS

The results of this study have implications on teaching and learning of physics in senior secondary schools. The results of this study suggests that Physics teachers in the terminal classes need to evaluate their teaching behavior and adjust appropriately towards assisting students to acquire knowledge rather than focusing on passing examinations only. Findings of this study also suggest that Physics students should endeavour to learn the fundamental principles and basic concepts of physics rather than just concentrating on passing the SSCE. School Guidance and counsellors the need to adequately guide and counsel final year students against being anxious and the need to develop good study habits.

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APPENDIX 1  
**HIGH-STAKES EXAMINATIONS AND TEACHING-LEARNING OF PHYSICS  
 FORM A**

Introduction

This questionnaire was developed to assess the effects high-stakes examination such as Senior School Certificate Examination (SSCE) being conducted by the West African Examination Council and National Examination Council; have on the quality and quantity teaching and learning of Physics in secondary school. Please be very honest. The responses will be used for academic work only. However, results will help in improving teaching-learning of Physics as well as assessment procedures in Nigeria

Section A: Demographics

- 1) Age (in years) as at 1<sup>st</sup> July, 2017.....
- 2) Highest Qualification.....
- 3) Teaching Experience (in years) as at 1<sup>st</sup> July, 2017.....

Section B: Statements

To each statement, there are options. Place a tick in the space that reflects you.

1. In what direction does SSCE being conducted by the WAEC affect the way you teach Physics? You can tick as many as applied to you.

- 
- a) Encourages me to do extra lessons for my students: Yes..... No.....
  - b) Encourages me to cover every topic in the syllabus: Yes..... No.....
  - c) Encourages me to practice past/old questions with my students: Yes.....No.....
  - d) Puts me under pressure to cover all the topics in the syllabus: Yes.....No.....
  - e) Encourages me to counsel my students to read their books: Yes..... No.....
  - f) Encourages me to concentrate on areas/questions that usually come out in SSCE?  
Yes.... No...
2. To what extent do you practice past/old questions with your students? Place a tick in the one that applies to you
    - a) To a large Extent (more than two times a week).....
    - b) To some Extent (once or twice a week).....
    - c) Not all (None each week).....
  3. How many topics were you expected to cover before SSCE?.....
  4. How many topics were you able to cover before SSCE?.....
  5. Do you think the quality of Physics you taught is enough for the students to pass SSCE?  
Yes.....No.....
  6. Do you think the quantity of topics you taught is enough for the students to pass SSCE  
Yes.....No.....
  7. What method of teaching do you usually adopt in order to cover the syllabus?
    - a) Lecture method
    - b) Demonstration
    - c) Discussion
    - d) Peer Tutoring
    - e) Laboratory practical

APPENDIX 2  
**HIGH-STAKES EXAMINATIONS AND TEACHING-LEARNING OF PHYSICS  
 FORM B**

Introduction

This questionnaire was developed to assess the effects high-stakes examination such as Senior School Certificate Examination (SSCE), being conducted by the West African Examination Council and National Examination Council have on the quality and quantity teaching and learning of Physics in secondary school. Please be very honest. The responses will be used for academic work only. However, results will help in improving teaching-learning of Physics as well as assessment procedures in Nigeria

Section A: Demographics

- 4) Age (in years) as at 1<sup>st</sup> July, 2017.....
- 5) Gender: Male.....Female.....

Section B: Statements

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To each statement, there are options. Place a tick in the space that reflects you.

8. In what ways does SSCE being conducted by the WAEC affect the way you learn Physics? You can tick as many as applied to you.
  - g) Encourages me to read all the topics in the syllabus: Yes..... No.....
  - h) Encourages me to practice past/old questions with my colleagues: Yes.....No.....
  - i) Encourages me to read to pass: Yes.....No.....
  - j) Encourages me to attend class more regularly: Yes..... No.....
  - k) Encourages me to concentrate on areas that usual come out in SSCE? Yes.... No...
9. To what extent do you practice past/old questions? Place a tick
  - d) To a large Extent (more than two times a week).....
  - e) To some Extent (once or twice a week).....
  - f) Not all (None each week).....
10. How many topics were you expected to cover before SSCE?.....
11. How many topics were you able to cover before SSCE?.....
12. To what extent were you anxious about SSCE?
  - a) High Extent.....
  - b) Moderate Extent.....
  - c) Low Extent.....
  - d) Not at all.....
13. What method do you use to learn Physics? Tick all that apply to you
  - a) Practicing past/old questions Yes..... No.....
  - b) Practicing questions from textbooks: Yes.....No.....
  - c) Memorization of concepts in Physics: Yes.....No.....
  - d) Reading Textbooks: Yes.....No.....
14. Are you afraid of failure in SSCE? Yes.....No.....