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Trends in the WASSCE Performance of Students in Physics in Oyo State Nigeria (2004 to 2010)

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Abstract
As important as Physics is to the technological advancement of a nation, students still perform below standard in the subject. Over the years, researches have been carried out and the process is still on to address the perceived causes of poor performance in Physics. The instrument used for this study was West African Senior School Certificate Examination (WASSCE) Physics results, 2004 to 2010. The trend of Physics students' performance for a period of seven (7) years was considered. The findings revealed that the performance of students in Physics is still very low. The trend in performance is not consistent. It is recommended that Colleges and Universities of Education utilize the recommendations proffered in different researches that addressed poor performance in Physics to improve students' learning outcomes.

Keywords: *Performance in Physics, Trends, WASSCE Result*

Introduction
An examination of the trend of science students' performance in Physics shows that students perform very poorly in the subject. Physics is an essential part of the educational system and of an advanced society. It is

the study of matter, energy and their interactions. It is an international enterprise which plays a key role in the future progress of humankind. Physics is an exciting intellectual adventure that inspires young people and expands the frontiers of our knowledge about nature. It improves our quality of life by providing the basic understanding necessary for developing new instrumentation and techniques for medical application; contributes to the technological infrastructure and provides trained personnel needed to take advantage of scientific advances and discoveries. Despite all the importance of this subject, students still perform poorly in Physics.

The essence of considering the trends of academic performance in Physics over a period of seven (7) years is to enable us assess whether there is a positive, negative or fluctuating (undulating) trend in the academic performance of students in Physics and to proffer appropriate suggestions. One would expect that researches and findings on factors affecting the students' performance in Physics over the years would have brought about some measure of improvements in the performance of students in external examinations such as West African Senior School Certificate Examination (WASSCE), but unfortunately this seems not to be so.

Many researchers have been concerned with the problem of underachievement in Physics (Okpala and Onocha, 1995; Orji, 1998; Iroegbu, 1998; Ogundipe, 2004; Ariyo, 2006; Akuche, 2008). Some variables were perceived to be responsible for students' low performance in Senior Secondary School Physics. These include gender stereotyping, overcrowded classrooms, poor teaching methods, inadequate laboratory facilities and exposure, poor attitude and self-esteem, students' perception of Physics as being naturally difficult, and so on. These perceived variables/factors and many more have been researched on, and are still being worked on by researchers to improve the learning outcomes in Physics. The question is "Are suggestions for improvement in the research findings being utilized in our schools?"

Some instructional methods/strategies have been found effective, are they being utilized by classroom teachers in their respective schools to enhance learning? How much of science facilities are being provided and utilized? The problem is that the findings of the researchers are kept on book shelves in libraries without implementation. This may be because teachers are not well-informed about the methods/strategies or that they do not want to embark on the new strategies, because they are tasking. Probably they lack facilities and do not have access to the information or may be due to lack of motivation.

Science teachers' inability to organize open-ended teaching method such as inquiry, peer teaching, and so on, may be due to lack of understanding of these result-oriented strategies and how to implement them or due to conservative inertia wherein teachers tend to teach the way they were taught. These have far-reaching implications for teacher education and hence students' learning outcomes.

Teacher education should help science teachers to be flexible enough to easily adapt to changes. Indeed it should equip teachers, not only for changes which already exist in schools but also for those that are not yet even envisaged. Students, themselves consider Physics as a very difficult subject. Some have low numerical ability due to their poor numerical foundation. Some are lazy and are not committed to their studies and laboratory work.

All these factors perceived to contribute to poor performance in Physics and the findings which are supposed to remedy the situation are meant to improve the learning outcomes of students. The study is therefore meant to investigate the trends in the performance of science students in Physics in West African Senior School Certificate Examination (WASSCE) in Oyo State from 2004 to 2010.

Statement of the Problem

As important as Physics is in the technological advancement of any nation, students tend to perform poorly in Physics in Nigeria. The study looked into the trend in academic performance of students in Physics over a period of seven (7) years in Oyo State.

Research Question 1

What percentage of students passed at credit level and above each year?

TABLE I: ***Physics May/June 2004-2010***

Year	No of Students that sat.	1	2	3	4	5	6	1-6	7	8	7-8	9
2004	17893	216	242	1460	871	1159	2821	6769	2662	3108	5770	6018
%	98.77	1.20	1.35	8.15	4.86	6.47	15.76	37.83	14.87	17.36	32.24	28.04
2005	17915	199	242	1421	921	1058	2689	6530	2703	3083	5786	5386
%	98.92	1.11	1.35	7.93	5.14	5.90	15.80	36.44	15.08	17.20	32.29	30.06
2006	19362	132	263	2020	1485	1342	3769	9011	3034	2734	5768	4484
%	98.72	0.68	1.35	10.43	7.66	6.93	19.46	46.53	15.66	14.12	29.79	23.15
2007	19714	145	106	981	648	965	3201	6046	3389	3411	6800	6862
%	99.01	0.73	0.53	4.97	3.28	4.89	16.23	30.66	17.19	17.30	34.49	34.80
2008	19892	35	128	1139	1007	1392	3126	6827	2093	2210	4303	8691
%	98.69	0.17	0.64	5.72	5.06	6.99	15.71	34.32	10.52	11.10	21.63	43.69
2009	21932	93	91	1052	933	1569	3868	8056	3500	4212	7712	6153
%	98.64	0.42	0.41	6.84	4.25	7.15	17.63	36.73	15.95	19.20	25.16	28.05
2010	24407	234	473	2405	1916	1732	4704	11464	2792	3787	6579	6175
%	97.99	0.95	1.93	9.85	7.85	7.09	19.27	46.97	11.43	15.51	26.95	25.30

Source: Statistics Unit, WAEC

TABLE 2: No and Precentage of Grades of Candidates That Sat for Physics in WASSCE 2004-2010 in Oyo State, Nigeria

Year	No of Students that sat %	1-6	7-8	9	7-8 F_9
2004	17893	6769	5770	5018	10,788
%	98.77	37.83	32.24	28.04	60.39
2005	17915	6530	15786	5386	11172
%	98.92	36.44	32.29	30.06	62.36
2006	19362	9011	15768	4484	10252
%	98.72	46.53	29.79	23.15	52.95
2007	19714	6046	6800	6862	13,662
%	99.01	30.66	34.49	34.80	65.30
2008	19892	6827	4303	8691	12994
%	98.69	34.32	21.63	43.69	21.63
2009	21932	8056	7712	6153	13865
%	98.64	36.73	35.16	28.05	63.22
2010	24407	11464	6579	6175	12754
%	97.99	46.97	26.95	25.30	52.26

Source: Statistics Unit, WAEC

From Table 2, above
It could be seen that in year; 2004, 37.83% of students passed at credit level and above; 2005, 36.44% passed at credit level and above; 2006, 46.53% passed at credit level and above; 2007, 30.66% passed at credit level and above; 2008, 34.32% passed at credit level and above; 2009, 36.73% passed at credit level and above; 2010, 46.97% passed at credit level and above.

Research Question 2
What percentage of students passed with grades 7 and 8 each year?
From Table 1, it could be observed that in 2004, 32.24% passed with grade 7 & 8. In 2005, 32.29 passed with grade 7 & 8. In 2006, 29.79 passed with grade 7 & 8. In 2007, 34.49 passed with grade 7 & 8. In 2008, 21.63 passed with grade 7 & 8. In 2009, 35.16 passed with grade 7 & 8. In 2010, 26.95 passed with grade 7 & 8.

Research Question 3
What percentage of students failed each year?
It could be observed from the tables that in 2004, 28.04% failed; in 2005, 30.06% failed; in 2006, 23.15% failed; in 2007, 34.80% failed; in 2008, 43.69% failed; in 2009, 28.05% failed; in 2010, 25.30% failed.

Research Question 4
What is the trend of the students' performance?
(i) Credit and above
(ii) Pass grade
(iii) Failure over the years

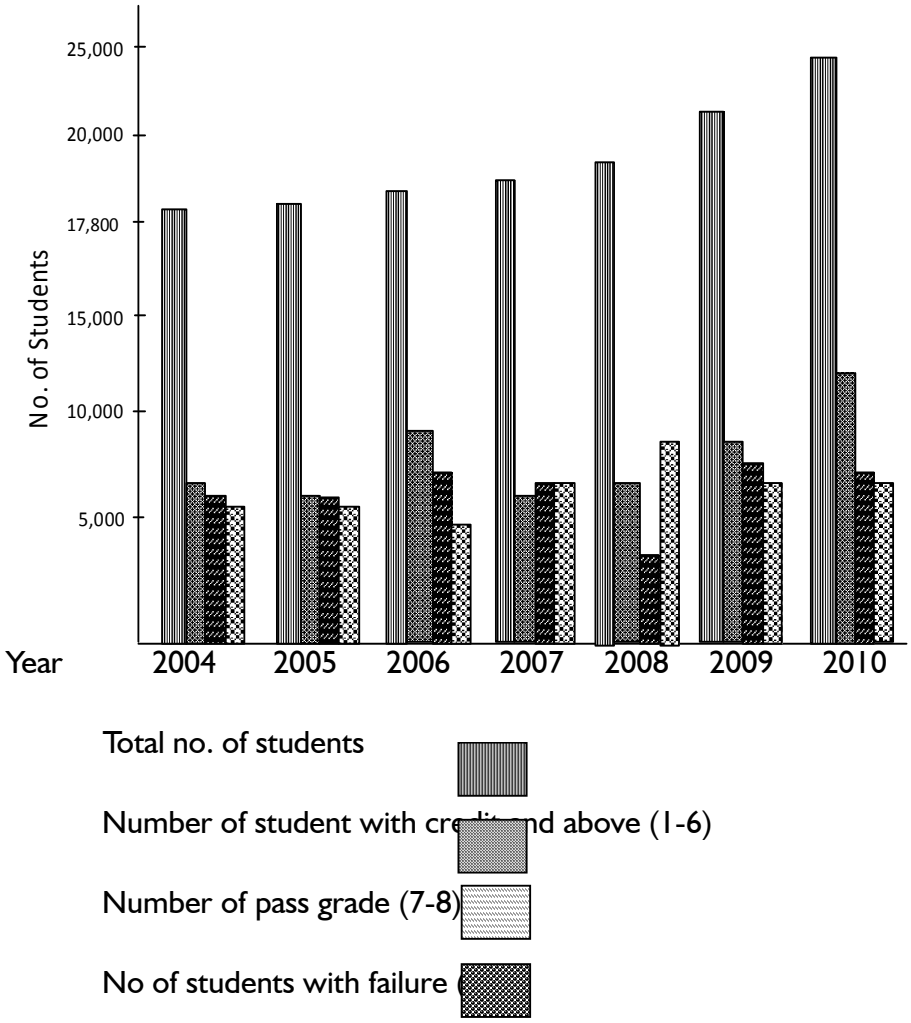


Figure 1

Considering Figure 1, the number of students that passed with credit and above in 2004 was higher (6769) than those (6530) with the same grade in 2005. In 2006, there was a remarkable increase (9011) in the number. There was a drastic decrease (6046) in the number in 2007. In 2008, although there was increase (6827), it was very minimal.

In 2009, the number of students rose to about 8056. There was a remarkable increase (11464) in the number of students with grade level (1-6) in 2010.

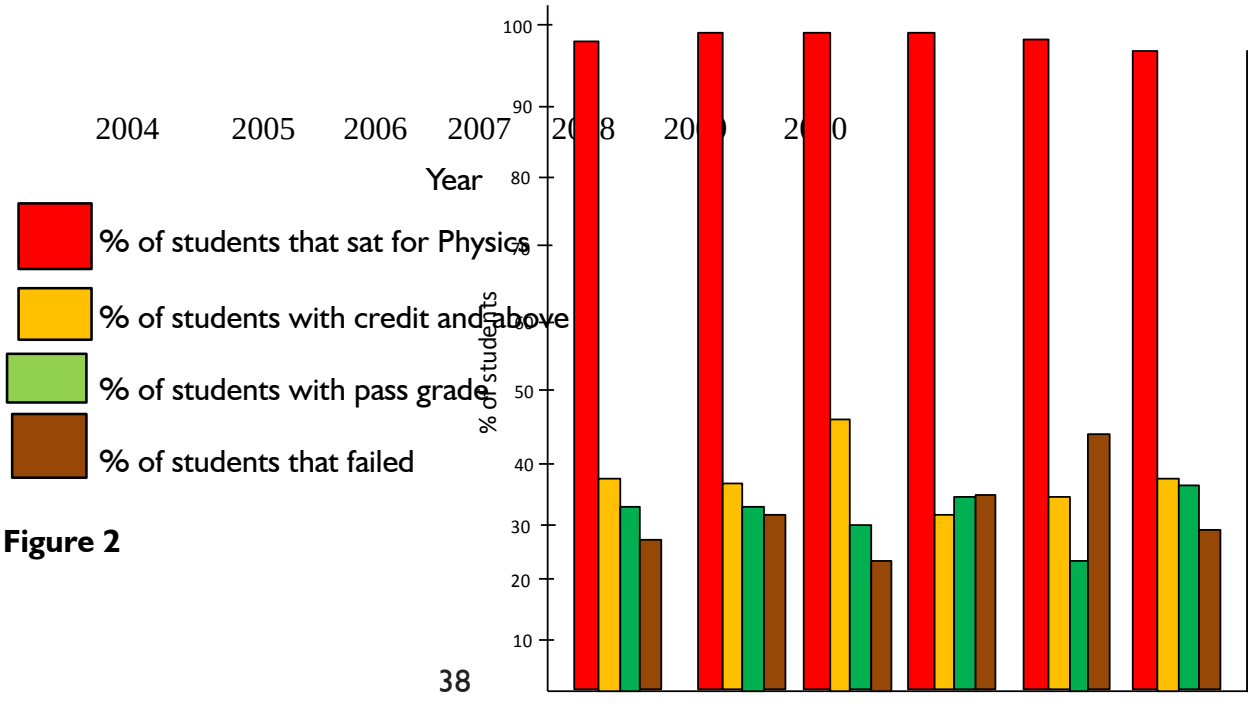


Figure 2

From Figure 2, the percentage of student with credit and above decreased from 37.83% in 2004 to 36.44% in 2005. There was an increase 46.53% in 2006. In 2007, the percentage decreased to 30.66% then rose to 34.32% in 2008, 36.73% in 2009 and 46.97% in 2010.

The percentage of students with pass grade increased from 2004 to 2005 and then decreased in 2006. It increased in 2007 then decreased again in 2008. It increased in 2009 and finally decreased in 2010. There is an undulating trend in students' performance from 2004 to 2010.

The percentage of students with failure grade increased from 28.04% in 2004, to 30.06% in 2005. It decreased to 23.15% in 2006, then increased to 34.80% in 2007 and to 43.69% in 2008. It decreased again to 28.05% in 2009 and further decreased to 25.30% in 2010.

Fig. 3 showed the trend of the number of students with grade pass and failure in the different years.

Fig. 3 (A&B) showed the undulating process of the number of students and percentage of students with pass grade and failure grade.

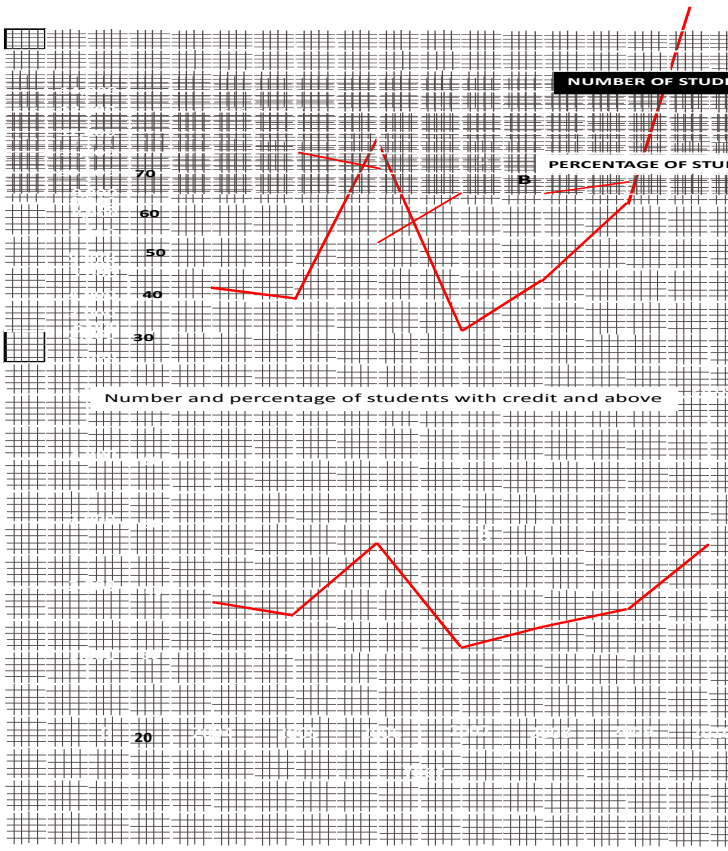
The peak in the number of students under this category was in the year 2009

Also Fig. 3B showed the peak of the pass grade and failure grade in 2009.

The lowest percentage of students with pass grade and failure was in 2010.

Fig. 4 also showed the trend of credit grade and above. The trend of credit grade and above. The trend is undulating. It falls from year 2004 to year 2005 then rises in year 2006. It falls in year 2007 and gradually rises through years 2008, 2009 to year 2010.

Fig. 3: ***Total No. of students and percentage of students with pass and failure grades***



There is consistency in the rise from year 2007 to year 2010.

Considering the entire results from year 2004 to year 2010, it is obvious that the students had been performing poorly in Physics. There is no year that up to 50% of the student got a credit and above grade. The closest to 50% were in year 2006 (46.53%) and year 2010 (46.97%). The poor performance was obvious in the rest of the years (2004, 2005, 2007, 2008 and 2009).

Pass grades are not reckoned with, since it cannot be regarded or accepted when one is applying for admission to study any science related course. It is therefore expedient to put the pass grades (7-8) in the same level with failure (F_9). It follows that 60.29% failed in year 2004; 62.36 in year 2005; 52.95 in year 2006, 65.30 in year 2007; 65.33% in year 2008; 63.22% in year 2009 and 52.26% in year 2010.

From the analysis, it could be deduced that more than half the students that sat for Physics from 2004 to 2010 failed Physics (60.29%, 62.36%, 52.95%, 65.30%, 65.33%, 63.22% and 52.26% respectively).

This finding is in accordance with the findings of some researchers who stated that Physics students are not performing well in it (Iroegbu 1998; Oludipe 2003; Akuche 2008, Adegoke 2009 and Babajide 2010).

Conclusion

This study has not only buttressed the fact that students' performance in Physics is still not encouraging, but has further shown that the researches and findings of the researchers are not being utilised in our educational system. It is therefore pertinent that these findings be incorporated in our colleges and universities of education in order to train teachers who will impact students and improve their learning outcomes.

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