

A Decade of Candidates' Performances in NECO-SSCE Mathematics in Nigeria

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Abstract

This study investigated a decade of candidates' performances in NECO-SSCE mathematics in NIGERIA. A total of 9266459 valid results were collated for the study and analyzed for zones in the country. Already validated results of NECO for 2000 to 2009 were used for the study. Three research questions guided the conduct of the study. Results showed that the highest number of valid results was recorded in the South-West zone while the North-East zone recorded the least. The South-South zone has the highest percentage performance and ranked the 1st position while North-East has the lowest percentage performance and ranked the least position (6th). Based on this result, the study recommended among other things that more qualified mathematics teachers should be employed as a matter of urgency in the North-East, North-West and North-Central zones to increase the workforce aimed at improving the teaching/learning of mathematics in these zones with a corresponding improved candidates performance in public examinations; Mathematics teachers in the South-South, South-West and South-East zones need to be commended and encouraged to put in more effort to sustain and improve on the present performance level.

Introduction

The study of mathematics is as old as the human race as man depends on it to keep records of birth, death, time of event and every other numerical record. It is a veritable tool for science, technology, and engineering advancement of any nation. (<http://www-history.mcs.st-andrews.ac.uk/HistTopics>). It is in realization of this fact that the Federal Government of Nigeria stated in the National Policy on education (Federal Ministry of Education, 2004) that every student shall take all the six core subjects:

- English language
- **Mathematics**
- A major Nigeria language
- One of Biology, Chemistry, Physics or Health Science
- One of Literature. in English, History, Geography, or Religious studies
- A vocational subject. (FME, 2004)

To achieve, this, the systems need constant monitoring from time to time. The monitoring may be in the form of presenting the yearly performances of candidates in the subjects, especially mathematics in each of the examinations (NECO, WAEC, NABTEC and JAMB) in the mass media so that the government, parents, and other stakeholders in educational matter may know what is actually happening. In this era of ICT, the results at the end of every examination should be summarized and published for public consumption/criticism (Obomanu and Adaramola, 2011)

The publication of this essential data would be useful to the following bodies:

- Federal Ministry of Education
- State Ministries of Education
- Department of Science Education of the Universities
- Mathematical association of Nigeria (MAN)
- Parents
- Students
- School administrators
- Private and public agencies in education
- International bodies that have some interest in education among others.

It is only when these data are published from time to time that the public may be able to say where we are going in mathematics performances in the secondary schools. Data never lie and ICT is the only way out. The information so obtained can help to effectively communicate to the entire Nigeria citizenry and thus effective mathematics education planning (Adeyemi 2009 and Asikhia, 2010).

Unfortunately, what is obtained in the examination bodies is far below the expectation in this era of ICT. They keep the information as classified as possible. The scanty percentage details given do not portray the true situation (NECO, 2011). Nothing is said about the number of candidates that registered for the examination subject by subject, the number that actually wrote the examination subject by subject, results cancelled, withheld

and released, the number of candidates that pass (grade by grade) and the number of candidates that fail the examination (Subject by Subject).

However, this study has taken the pains to extract the valid results in NECO – SSCE from 2000 to 2009 in the thirty-six states and Abuja and classified it into zones:

1. North-East states: (Adamawa, Bauchi, Borno, Gombe, Taraba, Yobe)
2. North-West states: (Kaduna, Katsina, Kano, Kebbi, Sokoto, Jigawa, Zamfara)
3. North-Central states: (Benue, Kogi, Kwara, Nasarawa, Niger, Plateau & FCT)
4. South-East states: (Anambra, Enugu, Imo, Abia, Ebonyi)
5. South-West states: (Lagos, Ekiti, Oyo, Osun, Ondo, Ogun) and
6. South- South states: (Akwa Ibom, Cross River, Edo, Delta, Rivers, Bayelsa)

in the country to give information on the number of valid results released, number that passed and failed the examination in each of the zones for each year from 2000 to 2009 and presented a zone by zone summary and national summary for public perusal.

- It is the hope of the researchers that this summary so presented in numerical form would clearly show how far mathematics education have been progressing in the country in the past decade.
- It would show whether the effort put in mathematics have actually generated a corresponding output.
- It would show if the mathematics teachers are actually teaching the students or cheating the students.
- It would show if the amount spent in mathematics education is actually producing the needed results.
- It would show what the position of each of the zones in the country is, in terms of mathematics education and performances.
- It would give an insight on what need to be done in mathematics education in each of the zones.

This study would also dichotomize the pass in mathematics as follows:

- (i) Credit grade and above as pass
- (ii) Pass at P₇ grade and below as fail
- (iii) The reason for (ii) above is that for one to gain admission into the university to read any course in science, technology, engineering and mathematics, one needs a credit grade of pass and above (University of Nigeria, Nsukka, 2011) and for one to be recruited into the police, civil defense, or any other paramilitary body or the arm forces, candidates need a credit pass and above in mathematics (Nigerian Police Force, 2011) and even to teach Science Technology Engineering and Mathematics courses at any level in Nigeria one needs at least a credit pass in mathematics (National University Commission, 2011).
- (iv) To be admitted for a higher study in STEM courses in any Nigerian university, the candidates needs a minimum of credit pass in mathematics. These positions make any grade of pass below credit as invalid and as such can be considered as weak pass or failure since one cannot use it for any progress study in STEM.

Purpose of the Study

The general purpose of this study was to investigate a decade of candidates' performances in NECO-SSCE mathematics in Nigeria. Specifically this study sought to:

1. Determine the distribution of candidates' performances in mathematics for each year (2000 to 2009) in the six geo-political zones of Nigeria.
2. Determine the Percentage performance of candidates in mathematics for each of the zones in Nigeria.
3. Determine the ranking of candidates' performances in mathematics for each of the zones in Nigeria.

Research Questions

The following research questions guided the study:

1. What is the distribution of candidates' performances in mathematics for each year (2000 to 2009) in the six geo-political zones of Nigeria?
2. What is the Percentage performance of candidates in mathematics for each of the zones in Nigeria?
3. What is the ranking of candidates' performances in mathematics for each of the zones in Nigeria?

Method

The study was a descriptive survey. The results of the entire candidates in the country were compiled using NECO computer prints out summary for each of the thirty-six states and Abuja classified into zones and for the years 2000-2009. The extracted results were tabulated into the number of students with valid results, number that passed and number that failed the examination for each of the years under investigation.

Data Analysis

The data obtained were analyzed using the frequencies and percentages.

Results and Discussion

Table 1A page 9 shows that for the period 2000 - 2004 a total of 4408870 valid results were released out of which 1301781 representing 29.53% passed the NECO-SSCE in the country. A breakdown of the results shows that the South-West zone has the highest number of valid result released (1190567) while the North-East zone has the least number of valid results released (332325). Out of the total failure results of 3107089: The South-West contributed 678752, North-Central 496245, South-South 414676, North-West 350363, South-East 350149 and North-East 272904 as the least.

Table 1B page 9 shows that for the period 2005 - 2009 a total of 4857589 valid results were released out of which 2327535 representing 47.92% passed the NECO-SSCE in the country. A breakdown of the results shows that the South-West zone has the highest number of valid result released (1103659) while the North-East zone has the least number of valid results released (572494). Out of the total failure results of 2530054: The North-Central contributed 593411, South-West 524560, North-West – 501011, North-East -382814, South-East - 347891 and South-South 180367 as the least.

Table 1A Summary of Candidates' Performance in Mathematics in NECO-SSCE from 2000-2004 in the six geo-political zones (North East, North West, North Central, South East, South West and South- South) of Nigeria

S/No	ZONES	YEARS																		TOTAL		
		2000			2001			2002			2003			2004			R	P	F			
		R	P	F	R	P	F	R	P	F	R	P	F	R	P	F	R	P	F			
1	North-Central	121673	39264	82409	150860	64335	86525	184653	90721	93932	166057	68490	97567	178442	42630	135813	801685	305440	496245			
2	North-East	47853	9290	38563	51427	8246	43181	75074	21313	53761	68859	8688	60171	89112	11884	77228	332325	59421	272904			
3	North-West	80167	24889	55278	72796	23748	49048	102225	35848	66377	101456	16872	84584	116654	21578	95076	473298	122935	350363			
4	South-South	218720	122724	95987	198193	111397	86796	226601	164075	62598	190894	121077	69871	185025	85419	108606	1019386	604710	414676			
5	South-East	132857	54107	78750	117657	43449	74208	122939	68436	54503	107672	42817	64810	110484	32648	77836	591609	241460	350149			
6	South-West	252751	117746	135005	279219	118324	160895	258398	120483	137915	188959	99041	89918	211240	65221	155019	1190567	511815	678752			
	Total	854021	368020	486001	870152	369499	500653	969890	500876	469014	823897	356985	466912	890957	250380	640577	4408870	1301781	3107089			

Source: NECO National Hqts Mina, Niger State.

Key: R – Total number of candidates with valid results for the examination

P – Total number of candidates with credit grades and above

F – Total number of candidates that fail the examination

Table 1B Summary of Candidates' Performance in Mathematics in NECO-SSCE from 2005-2009 in the six geo-political zones (North East, North West, North Central, South East, South West and South- South) of Nigeria

S/No	ZONES	YEARS																		TOTAL		
		2005			2006			2007			2008			2009			R	P	F			
		R	P	F	R	P	F	R	P	F	R	P	F	R	P	F	R	P	F			
1	North-Central	189492	55082	134410	190017	86351	103666	208150	109195	98955	227818	154007	73811	232275	49706	182569	1047752	454341	593411			
2	North-East	76736	17911	58825	104360	37101	67259	107438	33135	74303	133341	87392	45949	150619	14141	136478	572494	189680	382814			
3	North-West	122005	20271	101734	139314	57978	81336	149644	69342	80302	184761	121017	63744	203385	29490	173895	799109	298098	501011			
4	South-South	158122	67318	99907	160919	92033	68886	165727	114230	51497	182540	151332	31210	204760	86422	118338	691699	511332	180367			
5	South-East	152118	33956	118162	117635	60950	56685	119348	69912	49436	126550	91966	34584	127225	38201	89024	642876	294985	347891			
6	South-West	208417	90524	117893	199610	100438	99172	217992	119064	98928	273215	170984	66231	240425	98089	142336	1103659	579099	524560			
	Total	906890	285062	621828	911855	434851	477004	968299	514878	453421	1092225	776698	315527	1158698	316049	842640	4857589	2327535	2530054			

Source: NECO National Hqts Mina, Niger State.

Key: R – Total number of candidates with valid results for the examination

P – Total number of candidates with credit grades and above

F – Total number of candidates that fail the examination

Data on Table 2 below shows that the South-South zone has the highest percentage performance for the ten years under study with 58.91% followed by South-West – 47.59%, South-East - 44.40%, North-Central - 40.52%, North-West - 31.81% and finally North-East - 25.43%. From the summary it can be seen that the North-East zone for the past ten years has an endemic problem in mathematics, performing below 50% average except for 2008 with 65.54%.

Table 2 Summary of Candidates' Performance in Mathematics in NECO-SSCE from 2000-2009 in the six geo-political zones (North East, North West, North Central, South East, South West and South- South) of Nigeria Based on Zonal' Percentage Performance

S/No	ZONES	YEARLY ZONAL PERCENTAGE PERFORMANCE										Mean Percentage	Position
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		
1	North-Central	32.27	42.65	49.13	41.24	23.89	29.07	45.44	52.46	67.60	21.40	40.52	4th
2	North-East	19.41	16.03	28.38	12.61	13.34	23.34	35.46	30.84	65.54	09.39	25.43	6th
3	North-West	31.05	32.26	35.07	16.63	18.50	16.61	41.62	46.34	65.50	14.50	31.81	5th
4	South-South	56.12	56.21	72.41	63.43	46.17	42.57	57.19	69.93	82.90	42.21	58.91	1st
5	South-East	40.73	36.93	55.67	39.77	29.55	22.32	51.81	58.58	72.67	30.03	44.40	3rd
6	South-West	46.59	42.38	46.63	52.41	26.61	43.43	50.32	54.62	72.08	40.80	47.59	2nd
Mean Percentage Position		43.09 6th	42.46 7th	51.64 3rd	43.33 5th	28.10 9th	31.43 8th	47.69 4th	53.17 2nd	71.11 1st	27.28 10th		

Source: NECO National Hqts Mina, Niger State.

Data on Table 3 below shows the ranking of the zones in the country and reveals the followings:

Table 3 Summary of Candidates' Performance in Mathematics in NECO-SSCE from 2000-2009 in the six geo-political zones (North East, North West, North Central, South East, South West and South- South) of Nigeria Based on Zonal Ranks

S/No	ZONES	YEARLY NATIONAL RANKING										Mean ranking	Position
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		
1	North-Central	4	2	3	3	4	3	4	4	4	4	2.9	3rd
2	North-East	6	6	6	6	6	4	6	6	5	6	5.7	6th
3	North-West	5	5	5	5	5	6	5	5	6	5	5.2	5th
4	South-South	1	1	1	1	1	2	1	1	1	1	1.1	1st
5	South-East	3	4	2	4	2	5	2	2	2	3	2.9	4th
6	South-West	2	3	4	2	3	1	3	3	3	2	2.6	2nd

Source: NECO National Hqts Mina, Niger State.

- (i) North-Central zone takes the 4th position in 2000, 2004, 2006, 2007, 2008 and 2009. The best the zone could achieve was 2nd positions in 2001 and has a mean ranking of 2.9 for the ten years under study.
- (ii) North-East takes the last position (6th) in 2000, 2001, 2002, 2003, 2004, 2006, 2007 and 2009. The best from that state was 4th position in 2005. It has a mean ranking of 5.7 for the ten years under study.
- (iii) North-West zone takes the last position (6th) in 2005 and 2008. They manage to keep the 5th positions in 2000, 2001, 2002, 2003, 2004, 2006, 2007 and 2009 and have a mean ranking of 5.2 for the ten years under study.
- (iv) South-South zone performs best with 1st positions in 2000, 2001, 2002, 2003, 2004, 2006, 2007, 2008 and 2009 with a mean ranking of 1.1 for the ten years under study.
- (v) South-East zone performs best with 2nd positions in 2002, 2004, 2006, 2007 and 2008; her worst outing was only in 2005 with the 5th position and a mean ranking of 2.9 for the ten years under study.
- (vi) South-West worst position was 4th position in 2004 and their best performance was 1st positions in 2005 with a mean ranking of 2.6 for the ten years under study.

The table also reveals the overall national zonal ranking with the South-South taking the 1st position and North-East taking the last position. The best outing for the nation was in 2008 with 71.11%, representing the 1st position and worst was in 2009 with 27.28% representing the 10th position.

Conclusion and Educational Implications

The findings of this study showed that;

- i. 9266459 valid results were released and the mean performance was 39.17%. The highest number of valid results was recorded in the South-West zone the least in North-East zone.

- ii. The South-South zone has the highest percentage performance while North-East has the least.
- iii. The ranking of the zones from best to the least is as follows
 - 1st - South-South
 - 2nd - South-West
 - 3rd - South-East
 - 4th - North-Central
 - 5th - North-West
 - 6th - North-East

Also, the best performing year for the nation was in 2008.

The study clearly points to the fact that zones in the country are not performing equally in mathematics; there are zones with significantly better performance and those with consistently poor performances. There is urgent need to arrest the poor performances in these zones and to keep up and or improve on the standard of the zones with better performance levels as this is not even the best that can be obtained. The attention may be in the form of employing more mathematics teachers, improve training for the existing mathematics teachers and improvement in the teaching/learning materials in these zones.

The government, through the Federal ministry of education should carry out studies with a view to uncovering the causes for the poor performances in mathematics. The level of performance in the country is a thing to worry about if the need to sustain the level of science and technology development is to be improved upon.

Recommendations

Based on the findings and implications of this study, the following recommendations are made;

- (i) More, qualified mathematics teachers should be employed as a matter of urgency in the North-East, North-West and North-Central zones to increase the workforce aimed at improving the teaching/learning of mathematics in these zones with a corresponding improved candidates performance in public examinations.
- (ii) Other factors that may affect students' performance in mathematics such as teaching methods, class size, materials and mathematics laboratory need to be provided in the schools.
- (iii) Mathematics teachers in the South-South, South-West and South-East need to be commended and encouraged to put in more effort to sustain and improve on the present performance level.
- (iv) Efforts need to be intensified by all stakeholders (students, parents, examination bodies, States and Federal ministries of educations, MAN and other agencies) in the business of mathematics education in Nigeria to find a lasting solution to the problem of teaching and consequent performances in mathematics in public examinations in the country.

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