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SYSTEMATIC SCHOOL BASED ASSESSMENT FOR AN IMPROVED COGNITIVE ACHIEVEMENT

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Abstract
This study examined the possibility of using systematic school based assessment as a tool for improving the student's cognitive achievement at the Junior Secondary School Level in the high priority four core subjects of Mathematics, English Language, Social Studies and Integrated Sciences. Four Schools in Okene Local Government of Kogi State of Nigeria constitute the sample. Two classes were selected fromJSS2 of each school. There were four experimental and four control groups to cover the four core subjects used in the study. Pre- test post- test experimental and control groups design was used while guided teacher- made tests were employed to check the effect of treatments-SSBA on the students. It was found that in all four subjects there were improvements by students who underwent the SSBA treatment. Based on this outcome, it was recommended that SSBA together with other teaching methods be used in schools on regular basis to improve student's cognitive achievement.

Introduction

Assessment is primary geared towards gathering the appropriate data on organizational or individual goal attainment, as no organization can exist without a goal (Afemikhe, 2005). Falayajo (2004) sees national assessment as describing the level of achievement of the whole system or a clearly defined part of it and not just students. While USAID (2003) s CA as a measure designed to ascertain the level of attainment of c

traits by learners with regards to knowledge, understanding and skills. However, a number of scholars agreed that school based (or continuous) assessment, if effectively carried out, can lead to improvement of learning outcome (of which cognitive achievement is a apart) (Onuka, 2005, Onuka and Oludipe, 2005; Afolabi 2005; Adeoye and Okpala, 2005). Kola and Ojo (2005) posit the following as forms of school based assessment, which Adeoye and Okpala (2005) regard as systematic assessment: class work; homework; practical work, assignments/projects; class texts; mid-term examination, end of term examination and end of year (session) examination. It is widely believed by these scholars that school based assessment, as we like to call this form of assessment, is a useful and veritable tool of engendering improved student academic performance particularly the cognitive achievement, while Azcutia (1999) believes that assessment leads to the improvement of the assessed programme Umoru-Onuka (2005) sees systematic school based assessment as a variant of what is popularly called continuous assessment in Nigeria since it is a form of formative evaluation that would normally lead to correcting the individual student's deficiency in his academic pursuit as training progress. He also sees continuous assessment (CA) as measuring student's performance beyond the cognitive to include the affective and the psychomotor domains of leaning as well. However, the scope of SSBA in the context of this study does not include the other domains apart from the cognitive. Ojerinde (2005) concludes that the fear of the public examining bodies in Nigeria about CA is the fact that CA's are not properly administered and honestly scored. The examining bodies, therefore, have to standardize the scores sent to them from schools. But if SSBA is carry out at the end of every topic, it is believed that it will drive seriousness into the students while the workload of accumulating topics before administering CA would be minimized and the mechanism of self correction and self- improvement gradually becomes the lot of the students as well as the teacher. Honesty the scoring of CA or SSBA also becomes easy to handle.

Inefficient assessment has been identified as one of the obstacles to educational development not only on the West Africa sub-region but also in countries like Kenya and Hungary (Wosyanju 2005 and Matrai and Lukacs, 2005). However, in the training of teachers in Nigeria only a little or next to nothing emphasis is placed on assessment or evaluation. The result is that most teachers are not versed in the science and art of

assessment or evaluation, particularly in developing the appropriate instrument and in assessing appropriately (Okpala and Adeoye, 2005, Afolabi, 2005 and Onuka, 2005). Nevertheless, as weak as the teachers are, Onuka 2005 found out that when assessment is carried out regularly, no matter how weak the instrument is, it will led to improving the achievement of learning objectives. Therefore, the necessity to carry out further study cannot be over emphasized. A careful synthesis of the studies above proved that systematic school based assessment could help in better assessment of large classes.

Objective of the Study

The objective of this investigation was to find out whether or not continuous or systematic administration of school-based assessment would be a good tool for improving the student's cognitive achievement in JSS Mathematics, English language, Social Studies and Integrated science.

Hypotheses

The following hypotheses were posed to provide answers to the problem of the study:

H01: There is no significance difference in the cognitive achievement of the systematic school based assessment (SSBA) students group and those in the control group in JSS English Language.

H02: There is no significant difference in the cognitive achievement of the SSBA student group and the cognitive achievement of the control group in JSS Mathematics.

H03: there is no significant difference in the cognitive achievement of the SSBA student group and that of the control group in JSS Social Studies.

H04: There is no significant difference in the cognitive achievement of the SSBA group and that of the control group in Integrated Science.

Scope of the Study

This study covered Okene local government Area of kogi state, Nigeria at the junior secondary school level.

Significance

The outcome of the study would help the government and other

stakeholders in education develop positive attitude towards systematic school based (continuous) assessment in schools, thus providing the funds for training teachers in the basic principles of assessment and the development of the appropriate assessment instruments; and thus improve cognitive achievement of junior secondary schools in the area.

METHODOLOGY

Design

The design for the study was the pretest-post-test experiment-control groups' research. This was done for each of the subject area investigated by this inquiry.

Sampling and Sample

Random sampling technique was used to select four of the twenty secondary schools in Okene Local Government Areas (LGA). The junior secondary section was selected for the study. The Junior Secondary Two Classes were purposively selected for the study because that class constitute the mid-point of a three-year Junior Secondary School and is the penultimate class which was believed to have adequately be equipped to be used in the study. Also, because, the JSS2 students were not preparing for Junior Secondary School Certificate Examinations (JSSCE). Two arms (each intact) were randomly chosen from each school (one experimental and one control). This is depicted in the following table.

Table 1: Samples

School	Class	Subject	Sample size	Remarks
A	JSS II B JSS II E	English language	58 57	Experimental Control
B	JSS II A JSS II F	Maths	60 62	Experimental Control
C	JSS II A JSS II D	Social study	55 58	Experimental Control
	JSS II C JSS II D	Integrated science	60 52	Experimental Control
4 Schools	8 Classes	Classes	463	

* Classes were used intact.

Instrument

Guided teacher-made tests in each of Social Studies, Integrated Science, English Language and Mathematics were used for both pre-test and post-test. The researcher trained the teachers in the principles of test construction and simple but accurate test scoring system. He also supervised the administration of the tests with the assistance of his doctoral student in the field of evaluation.

Treatment

The experimental group in each school was placed on systematic school based assessment treatment in the subject taught in that school. They were taught a topic for each week for six weeks and were equally assessed on each topic in the week that it was taught. While the control groups were taught the same topics but not assessed on weekly basis. Both groups had pre-test in the subject of interest in the school with no treatment. In each of the schools the same teacher taught the same topics in both classes. Having been trained on how to develop and administer tests, the teachers developed, administered and scored the students on their test. At the end of

the six weeks a post-test was administered on each group as appropriate also by the teachers. The researcher collated these various results before statistically determining the gain or otherwise of the experiment.

Data analysis

Data collected was analyzed using means, standard deviation and t-test statistics

RESULTS

Table 2: Interest comparison of the students on pretext/post test and gain series

Test	Treatment group	N	Mean	SD	T-value	School	Remark
Pretest	(a)Experimental (b) Control	58 57	51.80 51.70	3.32 3.11	1.44 NS	A	English
Post test	(a)Experimental (b) Control	58 57	61.20 51.00	3.61 3.70	10.25*	A	English
Pre-test	(c)Experimental (d) Control	60 62	51.70 49.91	3.01 3.21	2.45NS	B	Maths
Post test	©Experimental (d) Control	60 62	81.30 56.01	4.01 4.11	14.54*	B	Maths
Pretest	(e)Experimental (f) Control	55 58	55.00 55.03	3.91 3.89	1.991 NS	C	Social studies
Post test	(e)Experimental (f) Control	55 58	78.01 56.25	3.95 3.94	13.571*	C	Social studies
Pre test	(g)Experimental (h) Control	60 52	49.51 51.87	4.10 4.21	2.01 NS	D	Integrated science
Post test	(g)Experimental (h) Control	60 52	79.77 53.28	3.91 4.01	16.31*	D	Integrated science

NS=NOT SIGNIFICANT *=SIGNIFICANT

Table 2 shows that for each of the subject and school there was significant difference between the cognitive achievement of the SSBA (experimental.) group and the cognitive achievement of the control group in each of English Language, Mathematics, Social Studies and Integrated Science. These subjects are the core-core subjects at this level of schooling in Nigeria.

Table 3: Achievement gain by each group

School	Treatment group	N	Mean	SD	T-value	Subject
A	(a)Experimental (b) Control	58 57	3.33 1.97	1.15 1.03	14.987*	English
B	©Experiment (d) Control	60 62	4.55 4.01	1.91 1.01	15.071*	Maths
C	(e)Experimental (f) Control	55 58	3.89 3.01	2.57 1.89	13.978*	Social Studies
D	(g)Experimental (h) Control	60 62	4.51 3.01	2.01 1.07	13.898*	Integrated Science

The gain by the experimental groups over the control groups in the study is significant as shown in table 3. The gain by each of the experimental group was found to significant while the gain by each of the non- experimental was not significant.

DISCUSSION

The results in tables 2 and 3 show that there were significant differences between the cognitive achievement by the experimental groups and those of the students in the control groups who did not receive the SSBA treatment in all the subjects and schools involved in the study. Thus, implying that SSBA application can significantly affect cognitive achievement of students 'centris paribus'. The implication of these results is that all the null hypotheses are rejected while the alternative hypotheses that the differences would be significant were accepted. These differences

in cognitive achievement between both groups, which are significan confirms the finding of Adeoye and Okpala, (2005) that impact o systematic assessment procedure on physics achievement was significan and also the conclusion of Osunde (2005) that assessment is relevant i promoting learning. It also conform to the view of USAID (2003) that helps to determine level of attainment, which could lead to amelioratin deficiency Onuka and Oludipe, (2005).These results also conform to a earlier finding by Umoru-Onuka (2005) that CA facilitates th improvement of student's academic performance and evaluation of whic SSBA is a part leads improvement the functioning of what is bein assessed Azcutia (1999). The results also corroborate the assertion that C exercise build up the student towards facing examinations confidentl Naaleh, (2002), if the scores are not arbitrarily awarded (Chikwe,2002 and reduces examination malpractices (Onunkwo, 2002). But becaus SSBA is more systematic and being restricted to the cognitive domain, will facilitate the confidence building process. It could thus be inferre from the results of the study that SSBA programme in schools especiall the junior secondary schools which will soon emerge as the upper segmen of the Universal Basic Education in Nigeria would be effective i achieving learning objectives in the cognitive domain, and thus form th baseline for transition from the first level of education to the next leve Therefore, the programme can prepare the students for future educationa endeavour, where they would be required to engage in more self educating exercise. This is so because SSBA result would have given ther feedback in their areas of strengths, which they could further develop, o of weaknesses, which they will strive to overcome. SSBA results will als assist the teachers to detect their own strengths and weaknesses for furthe strengthening or amelioration. This would culminate in making ther better teachers in order to improve the entire school system and b extension students' cognitive achievement.

The implication of these findings are that in spite of the heavy workloa involved in implementing CA or in the reformed sense SSBA (Kolo an Ojo, 2005), it is a very useful way of keeping both the teacher and th student on their toes. This, in turn, facilitates achieving the objectives o cognitive learning. Also implied in the findings is the fact that it implementation requires heavy capital outlay in terms of amount o

stationary and time such exercise would consume. It is equally sure to spread the workload over a longer period of time, as it is expected to be done for topic taught, because of its systematic nature, which eliminates accumulation of workload. It builds up the student's confidence towards examination as practice culminates in perfection.

CONCLUSION AND RECOMMENDATIONS

The study has shown that SSBA programme could be a veritable instrument of improving cognitive achievement of the students and in turn could engender good teaching and learning to facilitate improved learning and thus the production of the appropriate manpower for the sub-region. In fact regular administration of SSBA would reduce truancy, which is often rampart in the school system. What is obviously needed to make the SSBA programme work effectively well is honesty on the part of the main implementers of the programme, proper funding of the school system, adequately trained personnel and school managers who are devoted to duty as well as high level of commitment to the programme by all other stakeholders.

Therefore, the following recommendations were made:

That all stakeholders should place high premium on SSBA programme, by getting committedly involved in its evolution and implementation.

By implication, funds must be made available to the sector to execute the SSBA programme in all schools not only in Nigeria but in of all the West African sub-region.

That evaluation which includes measurement and assessment must be made a substantial part of the teacher education curriculum in Nigeria and indeed in all of West Africa.

That all teachers must undergo a course of study in evaluation as well as regularly attend courses/seminars in evaluation to constantly keep abreast with new development in the field and thus update their knowledge of assessment.

That the teacher should be given all the necessary inducement to carry out SSBA programme in their schools as commitment to this exercise would take much of their private time.

Computation of SSBA scores should be done by a programmer employed

for that purpose only. This development will relieve teachers of some o their burdens and release to face the other aspects of their teaching.

That all stakeholders must be educated on its essence, while parents shoul encourage their wards to participate fully in the SSBA programme in orde to realize its objective of improving cognitive achievement and othe educational outcomes.

Policy makers should evolve a workable plan for sincere and committe execution of the programme while sanction should be put in place fo fraudulent execution of the programme.

The examining bodies should evolve a uniformed method of standardizin the scores arising from SSBA for incorporation into final school results a that level.

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