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Effect of Teacher Effectiveness on Kwara State Secondary School Students' Achievement in Mathematics

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Abstract: The thrust of the study was to assess the effects of teacher effectiveness on students, achievement in Mathematics. Results of ANOVA revealed that apart from teachers' qualification, there were significant differences in all the variables of teacher effectiveness considered in the research. Furthermore, the results of multiple regression analysis showed clearly that the subjective independent variables predicted considerably the objective measures of students' achievement in Mathematics. It was therefore, suggested that the present secondary school students' poor achievement in Mathematics could be improved if only qualified and experienced teachers handle Mathematics at the senior secondary school level but such teachers need be adequately provided with relevant instructional facilities.

Key words: Teacher effectiveness, Kwara State, secondary school, students' achievement, Mathematics, instructional facilities

INTRODUCTION

The Federal Government of Nigeria had adopted education as an instrument par excellence for effecting national development. If education has been adopted as the only tool that can solve the socio-economic problems of Nigeria then the adequate supply of effective teacher becomes the core of the educational problems because there is a direct link between the quality of education and the quality of teacher.

This view is adequately reflected in the national policy on education in section 9:59 on the purpose of teacher education that:

> Teacher education will continue to be given a major emphasis in all educational planning because no education system can rise above the quality of its teachers (p. 38)

The National Implementation Committee for the National Policy on Education commenting on the issue of professional roles of the teacher recommended that:

> The status and welfare of teacher is to become a matter of continuing national concern with additionally more community participation helping teachers to relate the school experience (p. 2)

These views seem to suggest that the real value of sound educational policies lies in its effective implementation and it is the teacher in the final analysis who transforms theory into practice and Ukeje (1976) explained that:

> .....indeed the quality of the school and that of the teaching personnel so permeate each other that a vicious circle is created in analysis of their inter-relationships for we cannot have good schools unless we have good teachers (p. 309)

Armed with these views, the researcher asserts that the system of training teachers should be the keystone of any national system of education, especially in a rapidly developing country like Nigeria. The effectiveness of teacher training will be the main determining factor in the success or failure of education to meet that country's needs.

Several studies abound that concerned themselves with effect of teacher effectiveness on students' educational achievement such as Schneider (1979), Adeyanju (1980), Abiri (1976), Zaku (1983), Okpala and Onocha (1984), Adewumi (1985), Awoyemi (1986), Danesty (2004), Nulifereb (2004), Rice (2003), Jacob and Lefgnen (2006), Adediwuraa and Tayo (2007) and Agharuwhe and Nkechi (2009). A considerable body of research findings is available to support the contention that in the balance, better qualifications of teachers would lead to better performance of students. Goodman (1959) established that there are links between pupils' performance and teacher effectiveness and between

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performance and classroom atmosphere. Teachers' experience was measured in terms of the number of teachers in a district with five or more years of employment as a classroom instructor. Classroom atmosphere was a measure resulting from an observer's rating of the degree to which the teacher attempted to relate the subject matter being considered to the interest and ability levels of students. In a similar study, Thomas (1962) using data from Talent' Project to investigate the influence of a large number of home, community and school found that the initial salaries of teachers, the teacher's experience and the volume of books in the library were significantly related to students' scores. Similarly, Calamine report indicated that teachers' quality is a major determinant of scholastic achievement among students and that feasible change in the level of quality of the teachers of Negro students would bring about significant changes in the achievement levels of these students.

Using a sample of 337 schools in IOWA to investigate the relationship between students' performance and teacher effectiveness, Coleman *et al.* (1966) reported that teachers' salary and number of instructional assignment per teacher were associated mill increment of pupils' achievement. Like Coleman *et al.* (1966) and Plowden and Lady (1967) sponsored by central Advisory Council on Education in England indicated that the age of the school building, the experience of teachers, the degree of academic preparation and the abilities of the pupils more positively correlated with students performance. In a re-analysis of Coleman *et al.* (1966)'s report, Nancy (1971) as a result of longitudinal study of 956 grades in 36 Boston classrooms and 30 teachers revealed that statistically significant relationships existed among achievement and teachers, years of experience and verbal ability. By far the most widely discussed were the Comber-Keeves and Thordike reports on the science study of IAEA.

This study drew sample from 15 developed and 4 developing countries and three populations were tested, primary students aged 10, low secondary students aged 14 and final year students in the secondary schools. Using stepwise ordinary test square regression, they reported that teacher certification, academic experience at the secondary grade, teacher motivation, homework and free-reading at home, positively related to students' performance. Nancy (1971) saw yet another publication of a report by the Bureau of School Programme Evaluation of the New York State Education Department. Three different research strategies were employed to investigate relationship, between various school factors and student performance in reading and Mathematics. The report indicated consistently high correlation between teacher characteristics, staff attitudes and incidences of practiced work and students' performance. In another study of teacher effectiveness, Schneider (1979) used individual students as units of analysis. Her sample consisted of 493 elementary school children in grades 3-7 from urban schools. Information on students' family peer, teacher and school characteristics were obtained over a period of 2 years. The results showed that some important characteristics affected the children's performances including degree of academic emphasis, teachers' action in lessons, unavailability of incentives and rewards; good conditions for pupils and the extent to which children were assigned responsibility.

Similar researches on teacher effectiveness have been done in the Nigeria environment but on a smaller scale compared to what obtained in the developed world. Furthermore, it is an irony of circumstance that there is a world of difference between what has been documented in research findings concerning the effectiveness of teaching personnel in Nigeria and what has been professed by researchers in the developed world. The often talked about falling standard of education in schools is often largely attributed to the teachers. In most cases, it is felt that the teacher directly or indirectly responsible for schools' good achievement. Expressing views on this issue, Fafunwa (1961) says:

> .....the African teacher joined the profession not out of the exalted sense of vocation but rather out of necessity some of them use it as a spring board, others stay on without making the adjustment necessary and constitute a class of disgruntled teachers

Similar opinion was expressed by Abiri (1976) that experience in this country had shown, however that teaching was very rarely enthusiastically chosen as career by Nigerians owing partly to the erstwhile relatively poor remuneration and low status of teacher. This may perhaps explain in part what is responsible for the poor performance of pupils in the examinations. It is ultimately certain that students could not benefit much from learning where teachers are not competent.

Zaku (1983) studied the relationship between some teachers and classroom variables and students, performance, using data collected by teacher, questionnaire and school environment. Three regression analyses were performed, one to determine how much of the variance in students' performance was explained by both teacher and classrooms variable, teacher and other to determine the contribution made by teacher and classroom variable, respectively. All the variables together explained 16.9% of the variance in mean students' performance on the Chemistry examination ($R^2 = 0.16933$). The results were however, non-significant

at the 0 .05 level of confidence. Zaku (1983) also reported that the teacher variable (i.e., the aggregate of teacher's other responsibilities, total number of Chemistry periods and whether or not teacher has knowledge of students family background) made the highest contribution to explaining the variance in students' performance (i.e., 10.30% of the variance with partial regression coefficient 0.31488 significant at 0.05 confidence level). This researcher revealed that the variable which was made up of the teacher aggregate of the teachers' age, number of years spent in teaching Chemistry made very little contribution to the explain variance ($R^2 = 0.00350$) and it has a non-significant standard partial regression of -0.05926.

A similar research was conducted by Okpala and Onocha (1984) on the perceived needs and correlation of need for improved practices of integrated science teachers. Their report indicated that a combination of the professional qualification, integrated science teaching experience, age and sex seemed to be effective in predicting integrated science teachers' perceived need for improved evaluation and correlation coefficients were significant at 0.01. A similar study by Awoyemi (1985) was on the relationship between the characteristics of teachers in terms of sex, years of teaching experience, age, academic qualification, marital status, socio-economic status background, factor of choice of teaching and the history of teaching in the family on the one hand and the effectiveness of the teacher on the other hand.

The research involved 1280 forms IV and V secondary school students and 191 teachers in Kwara State. Using product moment correlation and Z scores, Awoyemi (1985) reported that first and broadly, teacher preparation in terms of qualification, factors of choice of subject as a career, age, marital status and years of teaching experience had great Influence on teacher effectiveness.

Adewumi (1985) study was on the degree of relationship between Mock School Certificates (Mocksc) and West African School Certificates (WASC) examination results in some schools in Kwara State from 1980-1982. In addition, the researcher also considered the effect of teacher qualification, length of teaching experience and experience in the marking of WASC/G.C.E. examinations. The research involved 1,108 Form V secondary school students in 15 secondary schools. Subjects used were Mathematics, English Language, Biology, Chemistry, C.R.K. and Economics.

Series of statistics were used including Pearson Product Moment Correlations, Fisher Z transformation; Chi-Square and Phi-Coefficient (i.e., measure of association). Adewumi (1985) reported that teacher's academic qualifications, the average length of Form V, teacher's years of teaching experience did not significantly affect the magnitude of the correlation between Mocksc and WASC. From the foregoing review of literature, it could be seen that the crucial role of teacher effectiveness in determining students' performance is one of the topics in the field of education which have generated heated argument.

Since school goal achievement is related to teacher effectiveness and the major purpose of hiring a teacher is instructional effectiveness, the evaluation of such effectiveness is a challenge to school goal achievement and this concern forces us to look more critically into teacher effectiveness as a necessary area of continuous investigation. This is based on the assumption that every teacher's characteristics contribute to the level of his/her effectiveness which is not a source of error variance but integrally related to teacher's characteristics. With regard to the fact that several works have been done in this area, it is note-worthy that although, these studies so far reviewed are lucid, elegant in exposition and they provide massive good examples of teacher effectiveness, they also reflect some common short-comings.

Most of them have weakness that is attributable, in part at least, to the fact that they are correlational studies. Thus, the statistical result cannot reliably predict tin students' educational achievement. At the present level of the educational development, effort needs be made in causal inferences, for instance we need to infer whether the variables of teacher effectiveness cause the students' educational achievement or to investigate the extent to which these variable could be used to explain and/or predict the students' educational achievement. In this study, therefore the teacher is considered as the leader, whose effectiveness is related to his ability to be considered, to initiate structure, to organise classrooms roles, to help increase the students' skill level and to motivate them. It is claimed, therefore that the teacher's ability to achieve these would determine his/her effectiveness.

The purpose of the study, therefore is to re-examine these variable on stronger statistical analysis such that the results could be used to explain and/or predict the students' educational achievement. Doing this will involve the investigation of whether significant difference exists among the urban, semi-urban and rural areas of Kwara State secondary school students' perceived teacher effectiveness. It will also involve the investigation of whether the variables used as teacher effectiveness could be used to explain and/or predict the students' educational achievement. Even when research findings have revealed that the crucial role of teacher effectiveness in determining students' performance is one of the topics

in the field of education that have generated heated argument, the researcher is of the opinion that results from research findings concerning teacher effectiveness if appropriately articulated could be used to initiate structure, to organise classroom atmosphere, to help to increase the students' skill level and to motivate students in their learning performance. Other significances are that results from such findings could be desirable factors for the achievement of schools objectives of which students educational achievement forms an important factor. The effects of teacher-effectiveness on students' achievement particularly on Mathematics are research-worthy.

MATERIALS AND METHODS

Hypothesis: On the basis of the foregoing discussion, the following null-hypotheses are generated and tested at an alpha level of 0.05.

Ho_1: There is no significant difference among the urban, semi-urban and rural areas of Kwara State secondary school students' perceived teacher effectiveness.

Ho_2: There is no significant relationship between Kwara State secondary and school students' perceived teacher effectiveness and their achievement in Mathematics.

Research design: The research was ex-post facto causal comparative study because the researcher investigated the inter-relationship of teacher-effectiveness on students' achievement in Mathematics as they had occurred rather than creating these manifestation himself. Students' scores in Mathematics were treated as criterion variable while teacher effectiveness were treated as independent variable.

Population: The target population comprised all secondary school students in Kwara State, the desired target population consisted of all secondary school students in the senior secondary schools while the defined target population composed of all Senior Secondary School Student 1 (SSS I). Using a stratified method, the area of study (Kwara State) was delimited into urban, semi urban and rural areas. Dickson (1974) theory of urbanisation called the functional specialisation theory was used in the delimitation of the study area The fundamental idea in the theory is based on the specialisation of functions among human communities through the division of labour. About 750 Senior Secondary School Students 1 (SSS I) (250 from each delimited area) were selected by the stratified and simple random sampling techniques. The stratification parameter represented a kind of control variable.

Instrumentation: Students Assessment of Teacher Effectiveness Instrument (SATEI). The researcher is of the humble opinion, like those of Mckeachie (1969), Crawford and Bradshaw (1968) and Awoyemi (1985) that the best subjective judgement of the criterion of teacher effectiveness might be provided by die students of the course. The questionnaire used for the study, Student Assessment of Teacher Effectiveness Instruments (SATEI) was used to measure students' assessment of the effective teacher. It has two sections:

- Data about the effectiveness of the teacher instructional activities
- Data about the effectiveness of the teacher in co-curricular activities

The questionnaire contained a total of 30 items in a five point Likert type scale. The construct validity was determined by correlating SATEI with Teacher Performance Assessment Instrument (TPAI). The results showed a value of 0.95 and the confident limit for the construct validity ranged from the 0.98-0.88. The reliability was determined by test-retest method and it yielded correlation coefficient of 0.95. The questionnaire was administered by the researcher.

Data analysis technique: One way analysis procedure was used to examine the difference among the three groups of students' perceived assessment of teacher effectiveness. Multiple analyst-statistical procedures were used to examine the effects of teacher effectiveness on Mathematics. These results were tested at the 0.05 confidence level.

RESULTS AND DISCUSSION

Ho_1: There is no significant difference among the urban, semi-urban and rural areas of Kwara State secondary school students' perceived teacher effectiveness. Result in Table 1 shows that apart from variable of teacher qualification (X_1) all other variables of teacher effectiveness examined in the research and achievement in Mathematics have significant difference among the three groups of students at an alpha level of 0.05. Achievement in Mathematics (X_6) has the highest F-ratio of 24.473 while the variable of teacher qualification has the lowest F-ratio of 0.966.

Ho_2: There is no significant relationship between Kwara State secondary school students' perceived teacher's effectiveness and their achievement in Mathematics. In considering this hypothesis, we first examine the zero order correlation coefficient matrixes of

Table 1: Summary of one way analysis of variance group means

Variables	U	SU	R	DF	F-ratio	p-level
X_1	7.85	7.00	6.84	2.950	0.966	0.386
X_2	3.08	2.29	1.55	2.950	3.497	0.030*
X_3	135.08	125.76	128.04	2.742	12.677	0.000*
X_4	113.38	109.04	113.34	2.742	4.824	0.008*
X_5	252.85	238.01	243.63	2.742	9.999	0.000*
X_6	110.88	102.09	96.63	2.742	22.473	0.000*

*Significant, $p \leq 05$, X_1 = Teacher qualification, X_2 = Teacher experience, X_3 = Teachers instructional activities, X_4 = Teachers co-curricular activities, X_5 = Teacher effectiveness, X_6 = Mathematics scores, U = Urban, Su = Semi-urban, R = Rural

both the criterion and independent variables and the result is shown in Table 2. The results in Table 2 shows that teachers' instructional activities have the highest co-efficient of 0.90151 with the combined variables of teacher effectiveness. The lowest correlation coefficient is -0.19453 between teacher qualification and teacher co-curricular activities. It is also observed that apart from teacher's experience, teacher qualification has negative correlation coefficients with other variables considered in this research which are also significant at the 0.05 alpha levels. It is significant to note here that although, some of the correlation coefficients are negative and low, they guaranteed greater reliability of the relative importance of the partial and semi-partial regression coefficients that are reported. Having examined the correlation coefficient matrix, we proceed to examine the results obtained from multiple regression analysis.

Dependent variables	Mathematics
Multiple R	0.28276
R_2	0.07995
Adjusted R_2	0.07623
Standard error	12.77347

The results in Table 3 shows that the regression analysis yielded a multiple correlation of 0.28776 between scores in Mathematics and the other five variables listed with 8% conservative estimates of the percentages of variance explained and F-ratio of 21.49381, significant at 0.001 levels. Clearly, the subjective independent variables predicted considerably the objective measure of of students' achievement in Mathematics at the terminal of their junior secondary school examination. The analysis included unstandardized regression weights (B) of 0.03741, standardized regression weights (β) of 0.11710 and standard error of estimate (STD) (Error B) of 0.01149 with F-ratio of 10.603. These results showed that the research independent variables of teacher effectiveness are significant in predicting the objective measures of students' achievement in Mathematics test. The thrust of the study and the analysis was to assess the effects of teacher effectiveness on students' achievement in

Table 2: Zero correlation co-efficient matrix

Variables	X_1	X_2	X_3	X_4	X_5	X_6
X_1	1.00000					
X_2	0.02719	1.00000				
X_3	-0.15449	0.06277	1.00000			
X_4	-0.19435	0.06110	0.68114	1.00000		
X_5	-0.17669	0.28575	0.90151	0.88112	1.00000	
X_6	-0.02691	0.2320	0.04610	0.01810	0.01211	1.00000

X_1 = Teacher qualification, X_2 = Teacher experience, X_3 = Teacher instructional activities, X_4 = Teacher co-curricular activities, X_5 = eacher effectiveness, X_6 = Mathematics test score

Table 3: Summary of the results of multiple regression of students' performance in Mathematics

Analysis of variance	Df	SS	MS	F
Regression	3	10520.08286	3506.96095	21.49381*
Residual	742	121065.80263	163.16146	-

*Significant $p \leq 0.05$

Mathematics in Kwara State secondary schools. The first step in the analysis was the use of one way analysis of variance to examine whether significant difference exists among the three groups of students' perceived teacher effectiveness in Kwara State secondary schools and their achievement in Mathematics. The results revealed that except for the variable of teacher qualifications, significant differences exist in other variables of teacher effectiveness and in achievement hi Mathematics.

One of the most interesting features of the analysis was the finding that in the variables of teacher co-curricular activities (X_4) and teacher instructional activities. The senior secondary school students in the rural areas of the State have higher means (X - 113.34; X = 128.04, respectively) than their counter-parts in the semi-urban areas only with means of 125.76 and 109.04, respectively. The possible interpretation of this finding could be that in the urban schools because of their proximity to the Ministry of Education Head-Quarters and of course some surprise visits by some of the Ministry Officials to these schools, the teachers in the urban senior secondary schools are constantly at alert to their responsibilities.

Again in the rural areas where there are not much social facilities, the few senior secondary schools appear to offer a better place of leisure to the teachers, thereby affording them much contact with their secondary school students and enough time to prepare their instructional materials In the semi-urban areas, the officials of the Ministry of Education are a bit far away and the school authorities are often notified of any official visit. Not only is this, in the semi-urban area, there relatively growing social facilities such as clubs, public drinking places and film houses. These social facilities may therefore serve as deterrents to the teacher-student contact and in some respects the adequate preparation of instructional materials.

Noteworthy, however is that regardless of these advantages of teachers' co-curricular activities and teachers' instructional activities of the senior secondary school students in the rural areas over and above those in the semi-urban schools, the latter out-performed the secondary school students in the rural areas. The mean scores in educational outcome for the semi-urban and rural senior secondary school students are 102.09 and 96.63, respectively. This finding tallies with the finding of Balogun (1974) that:

> .....the facilities available in the rural areas necessarily restrict the capacity of the schools to give the best education even though the teachers are very willing to do their best

The results showed that there is no significant difference among the three sets of students in teachers' qualification (F = 0.996). Generally, speaking with the low status accorded teaching profession in Nigeria, especially at the lower level of education, experienced and qualified teachers hardly stay too long in classroom. Obviously with the introduction of policies designed to produce equality of educational opportunities, large number of schools were opened but as an ILO. Report pointed out that the problem of insufficient number of primary and secondary school teachers still remains but parallel problems of under-qualified and unqualified teachers at these levels is also giving rise to concern. It was estimated that by 1982, the number of unqualified and under-qualified teachers could exceed 180,000. The Blue print ILO warned of a dangerous dilution of the quality of teaching. With regard to the results in zero order correlation coefficients, the coefficients range from 0.90151-0.19453 which is significant at the 0.05 alpha levels. Of interest in the matrix is that teachers' qualification has negative co-efficient with the other variables of teachers' effectiveness and with the students' achievement (m) mathematics. This piece of information suggests that the more qualified the teachers are in the three different environments, the less they participate in the school activities.

As it is often the case, the highest qualified teacher in the school is mostly made the Principal or the Head of the department and he/she is therefore pre-occupied with administrative functions. This calls for urgent review because drawing the most qualified teachers from classrooms may in the end be a deterrent to students' educational performance. One of the most controversial issues in education especially in the developing world is the effect of teacher effectiveness on students' educational achievement. In this research, the researcher selected four independent variables (i.e., teachers' qualification, teachers' experience, teacher instructional activities and teachers' co-curricular activities which are however, by no means exhaustive) on account of their importance and applied multiple regression analysis, using the students' achievement in Mathematics as criterion measure. Multiple regression analysis was used to describe the entire structure of linkages between these independent variables and the criterion measure and to assess their logical sequence of structural model that is posited a priority causal theory. The multiple regression analysis yielded a multiple correlation coefficient of 0.28276, 28% conservative estimate of the percentage of variance explained in Mathematics with F-ratio of 21.49381. Clearly the subjective independent variable predicted objective measure students' achievement in Mathematics at the terminal of their Junior seconds school examination. It is most gratifying to note that there is significant effect teacher effectiveness on the students' achievement in Mathematics. Teachers play a significant role in the students' achievement in Mathematics especially at the secondary level and particularly of those that were involved in the study because teacher's effectiveness influence the students a great deal in their sense of worth, their attitudes toward Mathematics, their level of aspiration and how they control their own learning programme in Mathematics. This result conforms to Okpala and Onocha (1984) report that:

> The combination of the professional qualification, integrated science teaching experience, age and sex seemed to be effective to predicting integrated science teachers' perceived need for improved evaluation

This finding does not, however conform to the findings of Zaku (1983), Adewumi (1985) and Awoyemi (1986) that these variables had non-significant correlation co-efficient with students achievement in the various subjects that the examined. The difference may be accounted for by the type of statistical met, he employed in the analysis of data. At this point of the discussion, it would be obvious that the discussion on results of multiple regression analysis hi various forms is we suited to predictive and explanatory study of any controversial issue on education. The researcher is not saying, however that these methods of analysis would be definitive tests of theory but causal thinking plays an important role in the application of multiple regression analysis.

CONCLUSION

On the basis of the findings, the researcher is of the opinion that the poor performance of Kwara State secondary school students' in Mathematics may be

alleviated by the government finding ways and means of increasing teacher-effectiveness in terms of allowing qualified and experienced teachers to handle Mathematics with adequately provided instructional materials. Such teachers to be maintained in schools have to be adequately remunerated. This research was done before the creation of States in August 1991. Kwara State, therefore means Old Kwara State.

REFERENCES

Abiri, J.O.O., 1976. Nigerian student teachers attitude to teaching as a career. Nig. J. Psychol., 1: 20-30.

Adediwuraa, A.A. and B. Tayo, 2007. Perspective of teachers knowledge, attitude and teaching skills as predictor of academic performance in the Nigerian secondary schools. Educ. Res. Rev., 2: 165-171.

Adewumi, J.A., 1985. A correlation study of performance in the Mock school certificate and west african school certificate (WASC) examination in kwara state secondary schools 1980-1982. Ph.D. Thesis, University of Ilorin, Ilorin, Nigeira.

Adeyanju, T., 1980. The effect of teachers attitude on testing of English as a secondary language. West Afr. J. Educ., 20: 399-406.

Agharuwhe, A.A. and M.U. Nkechi, 2009. Teachers effectiveness and students academic performance in public secondary schools in dealt state, Nigeria. Study Home Comm. Sci., 3: 107-113.

Awoyemi, M.O., 1985. Teacher characteristics and teacher effectiveness in selected secondary schools in Kwara State. Ph.D. Thesis, University of Ilorin, Ilorin, Nigeria.

Awoyemi, M.O., 1986. Measuring the effective teacher: Problems and proposals. J. Teacher Educ., 2: 18-28.

Balogun, I.O.B., 1974. The intellectual and residential correlates of reading achievement in Nigerian secondary school. West Afr. J. Educ., 20: 245-255.

Coleman, J.S., E.O. Campbell, C.J. Hobson, J. McPartland, A.M. Mood, T.D. Weinfeld and R.L. York, 1966. Equality of Educational Opportunity. U.S. Department of Health Education and Welfare, Washington DC.

Crawford, P.L. and H.L. Bradshaw, 1968. Perception of characteristics of effective university teacher: A scaling analysis. Educ. Physiol. Measurement, 28: 1079-1085.

Danesty, A.H., 2004. Psycho-social determinants of academic performance and vocational learning of studies with disability in Oyo State. Ph.D. Thesis, University of Ibadan, Ibadan.

Dickson, R.E., 1974. City Region and Regionalism. Mathueu and Co Ltd., London.

Fafunwa, B., 1961. Status of Teaching Profession in Africa: New Perspective in African Education. Macmillan Co., New York.

Goodman, S.M., 1959. The Assessment of School Quality. Education Department of New York, New York.

Jacob, B. and L. Lefgnen, 2006. When principals rate teachers: The best and the worst-stand out. Educ. Next, 6: 58-64.

McKeachie, W., 1969. Student rating of faculty. Am. Assoc. Univ. Professors Bull., 55: 439-444.

Nancy, S.J., 1971. Report of Longitudinal study of 956 Sixth grades in 36 Boston Classrooms. Thirty Teachers. Their characteristics and outcome for black and white pupils. Harvard Educ. Rev., 8: 635-648.

Nulifereb, E.B., 2004. Fractals and the Value of Student Evaluators. Centre for Teaching and Learning, Idaho State University, Idaho.

Okpala, N.P. and D.O. Onocha, 1984. Perceived needs and correlates of needs for improved evaluation practices of integrated science teachers. Benin J. Educ. Stud., 3: 72-83.

Plowden and J.P. Lady, 1967. Children and their Primary Schools: A Report of the Central Advisory Council for Education (England). Vol. 1, Her Majesty's Stationery Office, London.

Rice, J.K., 2003. Teacher Quality: Understanding the Effectiveness of Teaching Attributes. Economic Policy Institute, Washington, DC.

Schneider, B.L., 1979. Production analysis of gains in achievement. Ph.D. Thesis, North Western University.

Thomas, J.A., 1962. Efficiency in education: A study of the relationship between related imputs and mean test scores in a sample of senior high schools. Ph.D. Thesis, Stranford University School of Education.

Ukeje, O., 1976. Nigerian needs and Nigerian education: A study of the needs of an emergent nation and the role of education in meeting them. Ph.D. Thesis, University of Ibadan.

Zaku, A.B.D., 1983. The relationship between some school factors and students performance in Chemistry examination in the Gongola state of Nigeria. Ph.D. Thesis, University of Hull.