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Kemi Olatunji*

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The sample consisted of one hundred and twenty six pupils with and without preschool education selected from primaries one, two and three of both private and public primary schools. Instruments included questionnaires for both parents and pupils, the Raven's Coloured Progressive Matrices, Intelligence test and achievement tests in English and Mathematics. The t-test was used to analyze the scores obtained from the three tests.

Significant differences were found in the performance of pupils in private and public schools in all the tests, irrespective of the factor of preschool education. It seems that success at the primary level is very much dependent on well-staffed and well-equipped schools and on a supportive home environment and not necessarily on preschool attendance.

INTRODUCTION

The role of preschool education in education systems generally and its possible contribution to the intellectual growth and development of young children have become points of common concern in both developed and developing countries. (Fafunwa, 1969; Hunt, 1964; Mistry, 1983). Assumptions about the importance of preschool education have led to the rapid expansion of preschool facilities in the advanced countries (Austin, 1976) and more recently in developing countries (Durojaiye, 1980; Myers, 1983; Gakuru, 1986).

In Nigeria, undoubtedly as a consequence of the value parents place on nursery education (Awoniyi, 1982) together with the needs of the large population of working mothers, the number of preschool institutions particularly in urban centres in Nigeria has grown considerably (Durojaiye, 1980). This unofficially sponsored growth and development of the preschool education sector and its assumed positive relationship to primary school success is reason enough for focusing our present research efforts on this area.

A specific aspect of this relationship that calls for investigation is the prevailing belief among parents and educators that preschool education is the key to academic success in the highly competitive formal education system, or conversely a kind of safety measure against failure. Such beliefs are supported by the National Policy on Education (1977/1981) which in its statement of objectives stresses among other things the preparatory role of preschool education in Nigeria. Presently there is a dearth of both empirical and qualitative evidence either to justify present growth trends or to validate propositions on which preschool education is based. Such considerations as these prompted this study. It is an attempt to determine what contribution preschool education might be making to the scholastic performance of pupils in private and public primary schools in Nigeria. This study focuses on private and public schools since previous research (Imoagene 1979: Gray and Klaus, 1970) has drawn attention to the relationship between the type of primary school attended and the maintenance of gains in achievement as a result of preschool education. Gray and Klaus (1970) for example found that children who went on to public schools, where the

teaching-learning situation was generally less adequate than that obtained in private schools, and where there were few classmates with high expectancies of success, had less chance of maintaining gains than children who went to private schools. For this reason, this present study takes account of the relationship between the type of primary school attended and the academic performance of pupils with preschool education (PSE) on the one hand and of pupils without (NPSE) on the other to discover whether the above findings are true in the Nigerian context.

In this study 'academic performance' is broadly defined by the scores pupils obtained in the Maths and English achievement tests designed for primaries one, two and three, together with the scores obtained in the Raven's Coloured Progressive Matrices Intelligence test. The rationale underlying this definition is that achievement is significantly correlated with intelligence or cognitive development. The study will determine the extent to which the impact of preschool education varies in these two areas.

The Nature of Preschool Education in Nigeria

Preschool education is the education given in an educational institution to children aged three to five years, prior to their entering the primary school. Pre-primary schools in Nigeria belong to the sector of informal education, inasmuch as they are all privately owned and free from government intervention. Nursery schools are therefore fee-paying institutions which are patronized by the children of the upper, middle and lower middle classes.

The National Policy on Education (1977) sets forth the objectives of pre-primary education in Nigeria as follows:

a. Effecting a smooth transition from the home to the school
b. Preparing the children for the primary level of education
c. Providing adequate care and supervision for the children while their parents are at work
d. Inculcating social norms
e. Inculcating in the child, the spirit of inquiry and creativity through the exploration

of nature and the local environment, playing with toys,artistic and musical activities.

f. Teaching co-operation and team spirit

g. Teaching the rudiments of numbers, letters, colours, shapes and forms through play.

The relevance of these objectives to the present study is that one would expect children who have attended preschools to be better prepared for and better able to cope with the requirements of the primary school, than children who enter primary one straight from home.

Durojaiye's (1980) study: 'Nursery Education in a Nigerian Environment,' is one of the few which gives us some insight into the extent to which the foregoing objectives are being achieved in practice. Durojaiye (1980) found that, in the nursery schools in her survey, although the majority of the pupils were Nigerian, English is the language most used in nursery schools, indicating that nursery schools make the learning of a second language a major factor in their functioning. This seems to be supported by nursery teachers' estimation that 'language development' ranks highest in their role in relation to primary

schools. Durojaiye notes therefore that nursery schools may be effectively preparing children for successful participation in primary schools where the second language is used as a medium of instruction. She points out the need for research to determine the extent to which preschool education is actually contributing to the achievement of higher standards in primary schools.

The present research paper goes further than this, in that it attempts to determine whether preschool education is effective in narrowing the gap in performance that has existed between private and public primary school pupils. The question here is: Is preschool education in Nigeria a potent enough force to compensate for the deficiencies of an impoverished home background and/or those observed in many public primary schools?

Research Design

Groups of private and public school pupils were compared. The first comparison involved pupils who had attended preschools (PSE: Tables 4, 5 and 6), while the second included pupils who

had no preschool experience, (NPSE: Table 7, 8 and 9).

Limitation of the Study

The socio-economic status of the home is acknowledged by the author as having an important bearing on pupils' academic performance. However, it has not been included as a variable here since it is the subject of another paper by the author entitled: 'Correlates of Academic Performance in Nigerian Primary Schools'.

The absence of the variable in the present study has created a limitation which is duly recognized but which nevertheless does not substantially affect the validity of the results. Admittedly the socioeconomic composition of private and public schools in Nigeria differs to the degree that the more privileged private school pupils generally perform better than their public school counter-parts. The intention of the researcher was to discover whether this difference, which was assumed right from the beginning, could be compensated for when both private and public school pupils had had the advantage of preschool education.

Subjects

The subjects were 126 pupils with and without preschool education selected randomly from primaries one, two and three of both private and public primary schools. The sample included both boys and girls with an average age of 7.9, 8.5 and 9.8 years for primaries one, two and three respectively. Equal numbers of preschoolers were selected from the private and public schools in order to obtain a balanced sample. The same was done in the case of pupils without preschool experience. The numbers in each group are presented in Table 1 below.

TABLE 1

Distribution of Overall Sample by Primary Levels

Categories	Primary I	Primary II	Primary III	Total
Preschool Pupils (PSE)	24	20	22	66
Non-Preschool Pupils(NPSE)	20	20	20	60
Private School Pupils with PSE	12	10	11	33
Public School Pupils with PSE	12	10	11	30
Private School Pupils with NPSE	10	10	10	30
Public School Pupils with NPSE	10	10	10	30

Research Instruments

The instruments included a pupils' interview schedule and a parents' questionnaire both of which were used to obtain information on the personal characteristics of the subjects, including their age, sex, socio-economic status and the type of primary school attended. Not all the data collected, however, was used for this present study.

Other instruments used for the study included the Raven's Coloured Progressive Matrices Intelligence Test together with English and mathematics achievement tests. The construct validity of the Coloured Progressive Matrices was assessed by correlating pupils' scores on this test with their scores in the English and mathematics achievement tests, and with the factor of socioeconomic status. In the Nigerian context researchers have found a distinct correlation between socio-economic status and performance in intelligence tests perhaps because of the greater exposure of the higher socio-economic groups to Western test materials and to a more stimulating home and school environment. This correlation has been accepted as evidence of a test's validity

(Bakare, 1971).

The correlation coefficients obtained are presented in Table II below.

Table 2

The Correlation Between Subjects' Scores on the Raven's Coloured progressive Matrices, SES and English and Maths Achievement Scores in Primaries I,II,III

	English	Maths	SES
Primary I	.74	.62	.72
Primary II	.56	.57	.63
Primary III	.61	.63	.59

English and Mathematics Achievement Tests

When designing the achievement tests, the researcher worked in consultation with class teachers in both private and public primary schools. To ensure the content validity of the tests,

reference was made to the syllabus, teachers' lesson plans, pupils' text and exercise books together with past test papers. Tentative forms of the tests were drawn up and pilot tested in schools not selected for the study. After modification, the final forms of the tests were drawn up, the reliability of which was then measured by the split-half reliability method. The coefficients yielded by this procedure for each of the tests constructed are presented in Table III below:

Table 3

Achievement Tests by Primary Levels
Reliability Co-efficients

	English	Maths
Primary I	0.84	0.89
Primary II	0.87	0.78
Primary III	0.88	0.85

Research Procedure

The administration of the instruments was

carried out at each of the six schools according to a schedule drawn up in consultation with the teachers whose classes were involved. The English and Mathematics achievement tests were administered on the same day in one school at a time. When this exercise was completed, the Raven's Coloured Progressive Matrices was administered to all the subjects individually, their responses being recorded by the researcher.

Data Analysis

The scores obtained from the tests were summed and the means computed. The t-test was then used to test the significance of the difference between the scores of the private and public school pupils, first of all in the Intelligence test and then in the English and Mathematics achievement tests.

Results

Tables 4-9 show the mean scores, standard deviations and t-values obtained from the comparison of the private and public school group scores. Following is the data related to Primary one PSE group in the intelligence and achievement tests.

TABLE 4

The Mean Scores of Private and Public School In the Primary One PSE Group in the Intelligence and Achievement Tests

Variable	Groups	N	Mean	S.D.	t-Value
IQ Test	Private	12	73.00	7.89	4.82*
	Public	12	57.16	8.11	
English	Private	12	86.25	16.47	
Test	Public	12	48.83	15.82	5.67*
Maths	Private	12	70.66	17.49	
Test	Public	12	40.16	21.13	3.85*

* $P < .05$

Table 4 indicates significant differences between the performance of private and public school pupils in both intelligence and achievement tests in Primary One PSE group. In this group the mean score of the private school pupils exceeded those obtained by their public school counterparts by

37.42 and 30.10 in the English and Mathematics achievement tests respectively.

The following table presents the data concerning the performance of primary two PSE group in the intelligence and achievement tests.

TABLE 5

The Mean Scores of Private and Public School Pupils in the Primary two PSE Group in the Intelligence and Achievement Tests

Variable	Group	N	Mean	S.D.	t-Value
IQ	Private	10	74.50	11.11	2.08*
	Public	10	64.90	9.49	
English	Private	10	85.50	18.12	
Test	Public	10	59.00	19.20	3.17*
Maths	Private	10	72.30	16.58	
Test	Public	10	42.20	16.76	4.04*

*$p < .05$

As Table 5 shows, significant differences were found between the performance of private and public school pupils in both intelligence and achievement tests in Primary Two PSE group. The mean score difference between private and public school pupils in the PSE group was 9.60. This result is similar to the result obtained among the Primary One PSE group. The findings pertaining to Primary Three PSE group in the intelligence and achievement tests are as follows.

TABLE 6

The Mean Score of Private and Public School Pupils in The Primary Three PSE Group in the Intelligence and Achievement Tests

Variable	Groups	N	Mean	S.D	t-Value
IQ Test	Private	11	81.27	11.29	
	Public	11	71.09	6.48	2.59*
English	Private	11	91.27	15.95	
Test	Public	11	53.90	24.65	4.89*
Maths	Private	11	69.63	18.29	
Test	Public	11	28.72	15.68	5.63*

*$p < .05$

Just as the results obtained among Primary One and Two PSE groups, significant differences were found between the performance of private and public school pupils in both intelligence and achievement tests in Primary Three PSE group. (See Table 6, above). The mean score difference between private and public school pupils in PSE was 10.18.

Table 7 provides the data related to primary one NPSE group in the intelligence and achievement tests.

TABLE 7

The Mean Scores of Private and Public School Pupils in the Primary one NPSE Group in the Intelligence and Achievement Tests

Variable	Groups	N	Mean	S.D.	t-Value
IQ Test	Private	10	60.90	11.29	
	Public	10	47.80	5.55	3.29*
English Test	Private	10	61.90	26.10	
	Public	10	39.30	19.98	2.45*
Maths Test	Private	10	52.60	21.97	
	Public	10	29.00	15.93	2.72*

*p < .05

In Primary One NPSE group, significant differences were found between the performance of private and public school pupils in both intelligence and achievement tests. The differences between the mean scores of private and public school pupils of the NPSE group were not so great being 22.60 in the English test and 23.60 in the Mathematics test.

The findings of the study with regard to Primary Two NPSE group in the intelligence and achievement tests are as follows.

TABLE 8

The Mean Scores of Private and Public School Pupils in the Primary two NPSE Group in the Intelligence and Achievement Tests

Variable	Groups	N	Mean	S.D	t-Value
IQ Test	Private	10	65.30	12.64	
	Public	10	51.00	3.97	3.41*
English Test	Private	10	86.20	13.84	
	Public	10	46.70	22.16	4.48*
Maths Test	Private	10	68.90	20.64	
	Public	10	42.90	21.39	2.77*

*$p < .05$

As Table 8 indicates significant differences were found between the performance of private and public school pupils in both intelligence and achievement tests in the Primary Two NSPS group. The mean score difference between the private and public school pupils in this group was 14.30.

Similar results were found in the Primary Three NPSE group. Concerning this group significant differences were found between the performance of private and public school pupils in both intelligence and achievement tests. For this group, the mean difference between the private and public school pupils was 15.80. Table 9 (below) shows the results with regard to Primary Three NPSE group.

TABLE 9

The Mean Scores of Private and Public School Pupils in the Primary Three NPSE Group in the Intelligence and Achievement Tests

Variable	Groups	N	Mean	S.D	t-Value
IQ Test	Private	10	73.80	12.10	3.79
	Public	10	58.00	5.24	3.79*
English Test	Private	10	82.80	12.01	
	Public	10	42.00	18.11	5.93*
Maths Test	Private	10	63.40	12.88	
	Public	10	25.70	16.24	5.75*

*p < .05

Discussion

The findings indicate significant differences between the performance of private and public school pupils in both the intelligence and achievement tests in all primaries, irrespective of the factor of preschool education. However, in the intelligence test the overall differences between

the private and public school pupils are slightly less when both groups have had preschool education, except in the case of the Primary One PSE group, where the differences were similar to those recorded for the NPSE group.

Comparing the overall differences, it appears that preschool education helps to narrow the gap between the private and public school pupils in the intelligence test, but has less impact on achievement in English and Mathematics since the differences between the private and public school pupils in these subjects are just as great in the PSE and NPSE groups. The reason why the influence of preschool education is more apparent and enduring in the intelligence test may be that pupils' performance in this case is not so dependent on school factors, as is their performance in the achievement tests, but rather is more dependent on innate abilities, which are nurtured by the preschool experience. Thus while preschool education to some extent minimizes the differences in intellectual ability which would normally obtain between the groups, it does not appear to compensate for deficiencies in the primary school environment. Deficiencies such as the lack of qualified teachers

or of essential teaching materials hinder the teaching and learning of English and Mathematics.

It is note-worthy that some of the most outstanding differences in achievement occurred among private and public school pupils who had attended preschools. For example, in the primary one PSE group the mean scores of the private school pupils exceeded those obtained by their public school counterparts by 37.42 and 30.10 in the English and maths achievement tests. In the NPSE group the differences between the groups were not so great being 22.60 in the English test and 23.60 in the Maths test. In primaries two and three the differences were equally great in the PSE and NPSE groups. These results show that preschool education fails to bridge the performance gap between private and public school pupils, and in the case of primary one pupils even accentuates it. It is evident that the type of primary school attended affects pupils' performance in much the same way as the factor of socio-economic status. The concern of this study was to determine whether preschool education could overcome this problem, whatever its origin.

The great differences which result,even when

public school pupils have attended preschool, may be due to factors similar to those noted in other research studies (Imoagene, 1979). The preschool pupils who go on to private schools are likely to be those who come from the most privileged house, where the parents are relatively affluent and well-educated. The majority of this group of pupils therefore has the advantage of preschool education. They also have the further advantage of proceeding to a private primary school where the teaching and learning environment is likely to be much more favourable than that seen in most public schools. In addition, the home environment of this category of pupils is usually more supportive of the educational experiences gained in the school than that of the lower class child.

The relatively poorer performance of pupils with preschool education who proceed to public schools may be explained by factors in both the home and the primary school environment which militate against the positive effects of preschool education. First of all, the preschool pupil who proceeds to a public primary school may find a stark contrast between his past and present educational experience. He moves, for example, from a small class of pupils

where he receives individual attention, to a class of forty to fifty pupils where, by necessity, he is treated as one of a number.

In the preschool, the pupil may have been used to child-centred teaching methods,and a wide range of books and other learning materials, but in the primary school he may find that the instructional methods are rather teacher-centred and the learning environment comparatively stark and uninteresting. The change from a private nursery to a public primary school in itself could account for the poorer performance of the preschool pupils who proceed to public schools when compared with those who go on to private schools where the teaching-learning environment is not so radically different from that seen in the preschool.

It appears that preschool education in the Nigerian context cannot effectively compensate for the limitations of public primary schools just as it cannot significantly counter the deficiencies of the child's home background. This finding is similar to that reported by Cirirelli et. al (1989) in their evaluation of the American head start Program. This showed that the program, although

producing measurable immediate gains, failed to make a sustained difference in the academic performance of the participants.

In Nigeria, the large pupil-teacher ratio, overcrowded classrooms, the lack of classroom equipment,teaching aids and textbooks and the sterile teaching methods which are prevalent in many public primary schools all combine to seriously depress the achievement of public school pupils. In addition, the bright public school pupils may lack the challenge of conscientious success-orientated class-mates, so that even they do not perform according to their true potential.

The part played by the type of primary school attended by former prescholars on the maintenance of gains accruing from a preschool program has been investigated also by Gray and Klaus (1970) and Filp et. al., (1983). Their findings are similar to those obtained in this study.

Filp et. al (1983), for example, found in their analysis of grade one outcomes, that there was a consistent relationship between the socio-economic level of the school that the child attended and

learning outcomes at the end of grade one. Even after controlling for the effect of the child's home background, Filp et. al. (1983) still found that the trends in learning outcomes were related to the type of primary school attended. It was discovered that when a child from a relatively disadvantaged home background attended a school of a low socioeconomic level, his performance was much poorer than if he attended a school of a middle socio-economic level. Filp et. al. (1983) found, in other word's, as we found in this study, that the type of primary school attended had a decisive impact on pupils' achievement. In the Nigerian context, Imogene (1976) and Adelusi (1982) likewise found this to be an important factor in pupils' academic attainment. This study further shows that this is true even when the factor of preschool education is taken into account.

The comparatively poor scores obtained by public school pupils when compared with their private school counterparts may be attributed to deficiencies in the academic and experiential background of public school pupils on the one hand, and the much more favourable teaching and learning conditions of the private schools on the other.

For example, the lower teacher-pupil ratio, better qualified teachers, pleasantly decorated and well-furnished classrooms and libraries, combine to produce the higher achievement levels which distinguish the private school pupils in this study. In short, the substantial differences between the teaching-learning environments of the private and public schools are almost sufficient in themselves, as Filp et. al., (1983) noted, to account for the dramatic differences between the achievement scores of private and public school pupils.

Conclusion

It seems that success at the primary school level is very much dependent on well-staffed and well-equipped schools and on a supportive home environment and not necessarily on preschool attendance. Our findings indicate that the factor of preschool education is not nearly so potent in its influence as the type of primary school attended and probably the socio-economic status of the home.

If the primary level of schooling is not sound, it is not likely that preschool education will by itself, guarantee success in the primary school.

It will not, in other words, protect the child from the vicissitudes of poorly equipped and poorly staffed primary schools.

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