

Original Research Article

A Comparative Study of the Academic performance of Boarding and Day Secondary School Students in a Rural Town in South Eastern Nigeria.

ABSTRACT

Background:

Education is of immense importance to individuals and the society at large. Many factors have been postulated to influence the academic performance of children in different families. There have also been family concerns as to whether boarding house students perform better academically than day students. However, considering the cost of boarding school system, a lot of families have been put under both financial and psychological stress especially in resource-constrained third world countries where there are no tuition-free high schools.

Objective:

The study sought to determine the family factors that affect academic performance as well as compare the academic performance of day and boarding students.

Methodology

This is a cross-sectional descriptive study involving 212 secondary school students of a rural town who met the eligibility criteria and consented to participate in the study. Stratified sampling technique with proportionate allocation was used to select students studied from the school. Data was collected using self-administered questionnaire and analyzed using SPSS V25.

Results

Of the 212 students studied, 123 were boarding house students and 89 were day students. The mean academic performance for the boarding students' vs day students was $76.33 \pm 11.21\%$ vs $76.51 \pm 10.66\%$ with no significant difference between the two. Family factors that affected academic performance were father's occupation, mother's occupation and listening to/participating in academic programs among day students.

Conclusion:

Encouraging day school students to listen to and or participate in academic programs by parents significantly affect academic performance. Both the boarding and day school system can lead to good academic performance among students. Families can choose whichever system that suits them without undue financial and or psychological stress.

Keywords: academic performance, boarding students, day students,

INTRODUCTION

Education is the process by which society deliberately transmit its cultural heritage through schools, colleges, universities and other institutions.¹ It is an experience which happens to us from birth to death. The family consists of two or more people related biologically, socially, martially or legally². In other words, education refers to a purposeful activity directed at achieving certain aims such as transmitting knowledge or fostering skills and character traits². It is the basic right of every boy and girl in any family.

Education could be informal, formal or non-formal. Informal education is the education received from the family, peer group and the environment which results in acquisition of knowledge³. Non formal education is an organized educational activity outside the framework of the formal school which is often designed to provide selected types of learning to particular groups in the population particularly the adults. Formal education refers to the western type of education which is organized in schools, colleges and universities with rules and regulations formulated and administered by the Ministry of Education.³

Student performance is the process of using specific criteria to evaluate and reflect on their work. The academic performance of any student can't be separated from the family in which the child is raised in. Academic performance is an important identification tools which can measure the learning assessment of each student and as such can be regarded as a measure of their success in learning. Academic performance is the advancement of students going from one phase to another. It is measured by score in school examinations. The grading commonly used in Nigeria is percentage grading. 70 – 100% - A; 60 – 69% - B; 50 – 59% - C; 45 – 49% - D; 40 – 44% - E; 0 – 39% - F

One of the basic tasks of education is to train young people to become responsible members of the society. This training however begins informally from the home. As the child grows, the formal type of education is then gradually introduced. The family can provide either a stimulating or non-stimulating home environment for learning in a child. There is much variability in the motivational influence from various family factors. The children intellectual development usually begins from the family during infancy and early childhood. As these children mature, school begins to play a role in their intellectual development.

Prior to onset of formal education in Nigeria was the indigenous system of education which recorded informal and semi-formal type of education system.

The advent of formal education with boarding facilities in Nigeria can be traced to the coming of Christian Missionary Society (CMS) as far back as 1840s³. It was initially used to seclude the converts especially the young ones from the larger society to enable the missionaries inculcate their teachings and values into the mindset of the school children.

In view of the fact that the missionaries had a lot to teach the school children, contrary to what their families and culture taught, they desired a mission-controlled environment in which it would be easier to indoctrinate them as well as encourage them to attend school regularly.

Academic achievement does not thrive in non-enabling environment as the medium through which an individual's educational goals can be achieved is learning. This brings to the fore the importance of boarding schools where the students may be less distracted by family activities in the home. Boarding students are referred to as students who live within the school premises in dormitories while being given formal instructions and are typically referred to as boarders.

A lot of people believe that students residing in schools in boarding houses perform better academically than their day students counterparts. This is in view of the fact that they are assumed to have easy access to libraries and campuses wide internet connectivity, closer proximities to classrooms of learning, social interaction with fellow hall residents and greater bonding opportunities.

The boarding school system currently has become very acceptable in the society in view of the general belief that it offers better academic opportunities for students with subsequent improved academic performances. This system of education comes at a much higher cost than the day school system. In the quest to give their children quality education, a lot of families are subjected to undue financial pressure as they believe that they have to run the boarding school system in order to get the best education. It is also important to note that the boarding school system despite its numerous advantages takes away

parental involvement in school activities on a regular basis during the school term. The positive impact of parental involvement has been recorded in many studies⁴.

Aghenta et al had identified the key objectives of the boarding house system as:

bringing students of varying social and economic background to live together, share common problems, as well as provide stable environment with regular sleep, planned diet and conducive atmosphere. This has been found to encourage good academic work amongst other objectives³.

More recently, considering whether the cost of attending boarding school is proportional to academic excellence, there have been calls to review the academic performance of both boarding and day students so as to justify the resources spent on the boarding school system.

There is no doubt that good education does not happen by chance. It is a product of effective teaching and learning coupled with the effort of the teacher, school, student and their family. In the Nigerian system of education, the boarding house system operates mainly at the secondary school level. Some stakeholders in education have alluded poor academic performance in secondary school to poor or absent boarding house facilities. Considering our resource-constrained environment, the economic implications of boarding schools system and its pressure on family finances, it has become imperative to determine really whether boarding school system results in better academic performance than day school system.

The outcomes of this study will also enable educational and curriculum planners to produce effective school programmes based on important factors vis a vis academic performances and student type with respect to family resources.

There has been varying findings concerning determinants of academic performance. These include parents responsiveness, discipline style involvement with the child, organization of the environment, availability of appropriate learning materials, opportunities for daily stimulation, Parents level of education, occupation and socio-economic status, family size and type, motivation and possession of certain facilities at home among others influence the student's academic performance. Rana et al found out that the level of education of parents had a significant influence on their children's academics⁵. This has been supported by the fact that the highly educated parents often show interest in their children's academic performance as well as their choice of subjects and career while in secondary school. Sandeep in his study also discovered that parents' education has a positive impact on the academic performance of their children⁶. He observed that the well-educated parents were more likely to know what their children were being taught at school and could monitor their academic progress at home more easily as well as provide appropriate stimulation where needed. On the contrary, the less educated parents are unable to communicate and participate in their children's educational activities due to possible difficulties in understanding the school work as well as communication with teachers.

Kamau also discovered that students whose parents had tertiary level of education performed significantly better than the rest on average⁷. Family size was also discovered by Kamau to affect academic performance.⁷

Other factors that were observed to have effect on academic performance were family size, parent's occupation and parental income. These same factors were also largely noted to be determinants of academic performance in Nigeria as well as Africa.^{7,8,9,10,11,12} Many factors such as parent's educational level, parents' financial burden, conditions at home, parents' attitude towards education, school infrastructure, time management, student's discipline, availability of teaching requirements as well as curriculum implementation were noted to have significant impact on academic performance¹².

Mulkah discovered comparable academic activities between day and boarding students in Ondo State.¹³ However, some others discovered that boarding school students performed better than day students even among disadvantaged students^{13,14,15,16}. Many families are under intense financial pressure because they believe that only the boarding house system can give their children the desired academic performance. This strain on family resources subsequently leads to low or no budget for health issues arising in the home. The consequent late presentation to hospital could result in serious health complications.

It is against this backdrop that this study was undertaken to really find out whether good comparable education can be acquired in both boarding and day school system with considerable resources thereby optimizing family income.

Methods

Study Site

This study was conducted among students of a secondary school in Agulu, Anaocha L.G.A of South Eastern Nigeria. It is a semi-urban town and comprises of 20 villages. It has five government secondary schools with only one school consisting of significant numbers of both boarding students and day students. The school that have significant number of both boarding and day students was then selected for this study which happened to be an all girls school. The boarding students were about 1.4 -1.5 times more than the day students.

Study Design

The study is a comparative study of boarding students and day students in selected schools in Agulu.

Study Population

The study population consists of secondary school students in the selected school in Agulu of Anambra State, Nigeria.

Inclusion criteria

All the students in the school from J.S 2 to S.S 2 class. The S.S.3 students were excluded as they were undergoing intensive lessons for exams and so were largely unavailable for the study.

Exclusion criteria

Any student that had either been a boarder or a day student for less than one year (one academic session).

Sample Size Determination

The sample size was calculated using the formula $n = \frac{Z^2 pq}{d^2}$ ¹⁷

Where Z=standard normal deviate corresponding to a confidence interval of 95%

P=0.5 (no previous prevalence on this study)

D= degree of precision (0.05)

Therefore

$$n = \frac{(3.84 \times 0.25)}{0.0025}$$

$$n = 384$$

Since sample size is less than 10,000

N=estimated population size (415)

$$nf = 384 \div (1 + 384/415)$$

$$nf = 199$$

Calculating for attrition rate using 10%,

$$10/100 \times 199 = 19.9$$

$$199 + 19.9 = 218.9 \approx 219$$

Sampling Technique

A stratified sampling technique was used to group the students into two categories (boarding and day students) while proportionate allocation (3/4 of the total population size from each class) was used to determine the number of students to be studied from each class until the total number of subjects needed was obtained. Only students from classes JS 2 to SS 3 were included in the study.

Data collection method:

The data was collected through a self-administered questionnaire which was divided into three sections.

- Section A- Background information.
- Section B - Students' academic assessment.
- Section C - Determinants of academic performance among the respondents.

Data Analysis

Data was cleaned, coded and analyzed using SPSS v 24. Categorized variables were summarized using percentages while continuous variables were summarized using mean and standard continuous variable was done using chi square or Fischer's exact test as the case maybe.

Terminology

- Boarding students refers to students who stay in the school hostels during school term, residing in the dormitory facility.
- Day students are students who attend school from their homes and stay in school only during school hours.
- Academic Performance in this study was measured by the examination result (annual average score of the academic session).
- Good Performance was regarded as an annual average score above the school's class average.
- Poor Performance was regarded as an annual average score below the school's class average.

Ethical Considerations:

The study was approved by the Research and Ethics Committee of Nnamdi Azikiwe University Teaching Hospital, Nnewi. Approval was sought from Anaocha local government secretariat before proceeding to the selected secondary school. Approval was also sought from the principal of the selected secondary school and the consent of the students was obtained after explaining the research topic to them and ensuring they understood what was required of them. The students who were less than 18 years of age were asked to inform their parents and obtain their consent. Those who were boarders were asked to obtain consent from their school guardians if they could not contact their parents.

Results

Table 1a: Socio-demographic variables of study participants

Socio-demographic	Type of Student	Total (%)	Test statistics	p-value
	Boarding (n=123)	Day (n=89)		
Age(years)				

9-12yrs	21 (17.07)	11 (12.36)	31 (15.09)	$X^2=1.17$	0.552
13-16yrs	95 (77.24)	71 (79.78)	166 (78.30)		
17-20yrs	7 (5.69)	7 (7.87)	14 (6.60)		
Mean±SD	14.15±1.74	14.21±1.53	14.18±1.65	$t=-0.26$	0.7980
Class					
Jss2	22 (17.89)	21 (23.60)	43 (20.28)	$X^2=5.53$	0.136
Jss3	32 (26.02)	31 (34.83)	63 (29.72)		
Ss1	24 (19.51)	17 (19.10)	41 (19.34)		
Ss2	45 (36.59)	20 (22.47)	65 (30.66)		
Religion					
Anglican	15 (12.40)	8 (8.99)	23 (10.95)	$X^2=0.72$	0.696
Catholic	103 (85.12)	78 (87.64)	181 (86.19)		
Pentecostal	3 (2.48)	3 (3.37)	6 (2.86)		
Tribe					
Igbo	121 (98.37)	87 (97.75)	208 (98.11)	Fischers	0.743
Yoruba	2 (1.63)	2 (2.25)	4 (1.89)		
Father's HEL					
Primary	12 (9.92)	14 (15.73)	26 (12.38)	$X^2=3.02$	0.221
Secondary	37 (30.58)	32 (35.96)	69 (32.86)		
University	72 (59.50)	43 (48.31)	115 (54.76)		
Mother's HEL					
Primary	5 (4.10)	5 (5.62)	10 (4.74)	$X^2=3.23$	0.199
Secondary	35 (28.69)	35 (39.33)	70 (33.18)		
University	82 (67.21)	49 (55.06)	131 (62.09)		

/HEL-Highest Level of Education/

Table 1b: Socio-demographic variables of study participants

Socio-demographic	Type of Student		Total (%)	Test statistics	p-value
	Boarding (n=123)	Day (n=89)			
Father/Guardian occupation					
Artisan	10 (8.33)	19 (21.35)	29 (13.88)	$X^2=16.71$	0.002*
Civil servant	20 (16.67)	7 (7.87)	27 (12.92)		

Farmer	5 (4.17)	1 (1.12)	6 (2.87)		
Professional	27 (22.50)	9 (10.11)	36 (17.22)		
Trader	58 (48.33)	53 (59.55)	111 (53.111)		
Mother/Guardian occupation					
Artisan	4 (3.31)	11 (12.36)	15 (7.14)	$X^2=14.42$	0.002*
Civil servant	32 (26.45)	31 (34.83)	63 (30.0)		
Professional	21 (17.36)	4 (4.49)	25 (11.90)		
Trader	64 (52.89)	43 (48.31)	107 (50.95)		
Parent/Guardian other source of income					
Farming	1 (0.81)	4 (4.49)	5 (2.36)	$X^2=5.92$	0.052
None	72 (58.54)	60 (67.42)	132 (62.26)		
Trading	50 (40.65)	25 (28.09)	75 (35.38)		

/*-Statistically significant (p -value <0.05)/

Table 2: The relationship between Student Type and Student's performance

Type of Student	Student's Performance		Total (%)	X^2 -value	p-value
	Good Performance	Poor Performance			
Boarding	104 (57.1)	19 (63.3)	123 (58.0)	0.41	0.542
Day	78 (42.9)	11 (36.7)	89 (42.0)		
Total					

Table 3: Mean comparison between type of student and performance (academic result average)

Type of Student	Mean \pm SD	T-test value	p-value
Boarding	76.33 \pm 11.21	-0.12	0.902
Day	76.51 \pm 10.66		

Table 4: Association between type of student and factors affecting academic performance.

	Boarding Students		Day Students	
	χ^2 - value	P - value	χ^2 - value	P - value
Number of hours Students read	3.63	0.459	0.56	0.967
Experiences interruptions while studying	0.21	0.650	1.70	0.193
Opportunity to share reading materials	3.69	0.055	1.18	0.27
Opportunity to study and compete with siblings	0.06	0.809	0.004	0.985
Anxiety of missing home food	0.14	0.712	0.89	0.346
Happy with family size	0.74	0.388	2.03	0.155
Person who pays school fees	3.04	0.385	0.55	0.908
Discussion of academic work with parents/guardians	2.03	0.154	2.58	0.108
Occupation of parents affecting general performance	3.45	0.156	2.00	0.157
Whom student lives with/father, mother, etc	4.34	0.362	0.85	0.974
Lateness to school sometime	0.04	0.837	0.31	0.577
Frequency of parents/Guardian help with assignments	1.67	0.433	0.66	0.72
Frequency of discussions with parents/Guardian	0.58	0.744	0.66	0.72
Listening to/participating in academic programs	0.06	0.804	5.13	0.024*
Checking up books by parents/Guardian	0.07	0.795	0.16	0.688
Parents assistance to improve	0.76	0.382	0.60	0.439
Extra lessons at home	0.005	0.944	2.09	0.149

Number of siblings	0.74	0.389	1.18	0.277
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The response rate was 96.8%. Two Hundred and twelve students were finally studied. One hundred and twenty three were boarding students while 89 were day students. The mean age of students was 14.18 ± 1.65 . There was no significant difference between the mean age of the boarders and that of the day students. The parents of the students were largely educated as 62.1% of the mothers and 54.8% of the fathers had tertiary education. The mean academic result average was $76.42 \pm 10.94\%$. There was no significant difference between the academic performance of the boarders and that of the day students. The factors that were found to be significantly associated with academic performance in this study was father's occupation, mother's occupation and parents encouraging students to listen/participate in academic programs among the day students.

Discussion

The mean academic performance of both boarding and day students was $76.6 \pm 11.91\%$. This is regarded to be generally good. This study showed a significant association between the parents' occupation and the academic performance of the students. This finding is supported by some earlier studies in which socioeconomic status was discovered to be a predictor of academic performance¹⁸. Occupation is an important variable that determines socioeconomic status. Occupation often corresponds with income and educational attainment which when combined, determine a person's socioeconomic status. They tend to have more resources available for both academic and social welfare which consequently has a better positive impact on their academic performance.

There was no association between the parents' level of education and academic performance in this study. One would have expected a significant relationship between mother's level of education and academic performance. A study in India by Raychaudhuri et al discovered that mother's with higher education are directly responsible and influence their children's academic performance¹⁹. The finding in this study could be attributed to the high level of both parents' educational attainment across board in this study

Another factor that was significant in this study among the day students was parental encouragement to participate in academic programs. The academic programs included listening to radio/television academic programs, quizzes, competitions or participating in them as well as school quiz competitions. ($p < 0.05$). This is similar to the findings by Mutodi in South Africa as well as other countries where parent's encouragement to participate in school academic activities affected their academic performance.^{20,21,22,23} In this study, the parental encouragement to participate in school programs was not significant among the boarding students. This may imply that parental level of education is merely not enough but encouragement and active/purposeful participation in students' academic programs.

Parent/Guardian assistance with assignments was noted to be very high among day students (88.7%) when compared with that of boarding students (44.6%). This may have contributed to the equally good academic performance by the day students in this study. However, helping with assignments was not found to be a significant predictor of academic performance in this study. Majority of the students in this study were

engaged in regular talks/discussions about their academics with their parents/guardians although it was not significant predictor of academic performance in this study.

The mean academic performance of the boarding students was found to be 76.33 ± 11.21 while that of day students was found to be 76.51 ± 10.66 . Although the mean academic performance of the day students was found to be marginally higher than that of the boarding students, the t-test used to compare both found no statistically significant difference between the two values.

The finding in this study concerning the number of hours studied daily is different from the general belief that boarding students read more regularly than day students as they have scheduled time for reading in their curriculum. While more boarding students read for 1-2 hours without interruption when compared to day students, the number of hours studied daily was not significant as a determinant of academic performance in this study. This is contrary to the finding in the study done by Bista and Omotere who discovered that the boarding students perform better academically than day students as they have sufficient time to study and concentrate on studies^{24,25}.

Efosa-Ehioghiren also discovered that the academic performance of boarding students in Benin Metropolis of Nigeria was better than that of their day student counterparts²⁶. Ngetich in East Africa also had the same findings as others that academic performance of boarding students was better than that of day students²⁷. However, the different finding in this study could be attributed to the fact that many of the day students were encouraged to listen to as well as partake in many academic programs and in addition had high parental involvement in their academics. Many of the day students in this study were also involved with extra lessons at home, aside the ones taught in the class and they admitted to those extra lessons being helpful. While the boarding students also have extra lessons, their extra lessons were not individualized and so were similar to school lessons taught in the usual class manner.

Conclusion

This study revealed no significant difference between the academic performance of day students and that of boarding students. Families who cannot afford the boarding school system should opt for the day system in order not to put undue pressure on the family resources in a resource limited environment. Either of the school type system can produce the desired academic outcome among students.

Limitation

Although all the students were exposed to the same learning environment, the study did not take individual characteristics which could affect learning into consideration.

Data Availability

Anonymised data and details used in this study are available from the corresponding author upon necessary request.

Ethical Approval:

The study was approved by the institution's Ethics and Research Committee.

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UNDER PEER REVIEW