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IMPACT OF CLASS SIZE ON EARLY CHILDHOOD EDUCATION AMONG PRIMARY SCHOOL IN BWARI AREA COUNCIL

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ABSTRACT: *This study focused on the impact of class size on early childhood education in Bwari Area Council. It is a survey research. The population consists of all early childhood education pupils in Bwari Ara Council. The stratified and random sampling techniques were used to select a sample of 155. The instrument is a self-developed questionnaire titled "Impact of Class Size on Early Childhood Education Questionnaire". The psychometric properties were determined through a test – retest method of reliability. Using Pearson "Y" it yielded a correlation coefficient of 0.76 which was found to be reliable enough. Four (4) Research questions and two hypotheses were formulated for the study and analyzed using t-test statistics. It was found that a significant relationship exists between the mean ratings of the impact of class size and early childhood education. Recommendations, amongst others, include reducing a large class to a manageable one with appropriate counseling approaches.*

KEYWORDS: class size, early, childhood education, primary school, Bwari **,** council

INTRODUCTION

Adeyemi (2008) averred that class size is an educational tool that can be used to describe the average number of students per class in a school Lazear (2009) postulates that smaller classes have less number of disruptions hereby engendering better student / teacher engagement and better student learning than large classes. According to National Policy on Education (2014) early childhood education is seen as the education given to children prior to their entering the primary school. It serves the following purpose;

a) Effect a smooth transition from the home to the school
b) Prepare the child for the primary level of education
c) Provide adequate care and supervision for the children while their parents are at work
d) Inculcate social norms
e) Inculcate in the child the spirit of inquiry and creation through the exploration of nation
f) Develops a sense of cooperation and team spirit
g) Learn good habits, especially good health habits and
h) Teach the rudiments of numbers, letters, colours, shaped, forms etc through play (P.8).

As lofty as these objectives are they may remain a mirage in a congested and dehumanizing classroom arrangement. Large class sizes present many obstacles that prevent optimal learning. Younger elementary children have vulnerability towards poor quality instructions, disciplinary distractions and lower test scores. How does an elementary teacher recognize individuals in the

class when they are so many. This is however an anathema to meeting the basic needs of the children. This study aims at investigating the impact of classroom size on early childhood education among primary schools in Bwari Area council. To determine relationship between impact of class size and academic performance of pupils in early childhood education in Bwari Area Council to equally ascertain the psychological implication of class size on early childhood education and to identify social impact of class size on early childhood education in Bwari Area Council. With this, the shortcomings associated with impact of class size on early childhood education will be discovered, it will provide guide for developing education standard for pupils teachers ratio in primary schools. It will help teachers to identify reasons for the academic performance of pupils in large classes with high population and how they can address the problem and equally provide comprehensive information for all stake holders in education.

Research Questions

1) Is there any relationship between impact of class size and academic performance of pupils early childhood education in Bwari Area Council?
2) What is the impact of class size on instructional strategy in early childhood education in Bwari Area Council?

Hypothesis

1) There is no significant relationship between the mean rating of the impact of class size and early childhood education among pre-primary schools in Bwari Area Council.
2) There is no significant relationship between the mean rating of the impact of class size on instructional strategies and effective teaching and learning in early childhood education among preschools in Bwari Area Council.

METHODOLOGY

It is a survey design carried out in Bwari Area Council. The population consists of all early childhood education pupils in Bwari Area Council. Through random and stratified sampling technique, a total of 155 respondents were selected. The researcher used Yaro Yamane's formular to determine the sample size from the population.

Yaro Yamane's formula is given as $n = \frac{n}{1 + n(e)^2}$

Where N = population of study n sample size

E = level of significance at 5%

1 = constant

Thus substituting for the formula

N = 220

= 1 + 220(5%)

$= 1+ 220 \left(\frac{5}{100}\right)^2$

= 1 + 220 (0.05 x 0.05)

= 1 + 220 (0.0025)

= 1/0.55

= 1.55 x 100

= 155

The sampled size of the study is 155 respondents. The authors administered a self-developed questionnaire as an instrument for data collection. The instrument is divided into four parts capturing the issues and concerns of the research. It is structured and made up of 24 questions and derived from four parts A,B,C and D with close ended sections. They are compartmentalized as follows; Section A was hinged on impact of class size on student academic part B deals with impact of class size on instructional strategies Part C encapsulates questions on the psychological impact of class size. Students' performance while D involves questions on social impact of class size on students' performance. The likert scale method was used by the respondents to rate the questions on

Strongly Agree (SA)
Agree (A)
Undecided (U)
Disagree (D)
Strongly Disagree (SD)

The content validity of the instrument was captured in the entirety of the instrument which according to Oguala 2010 must answer the following questions;

1. Do the questions measure what they were intended to measure?
2. Do they represent the contents?
3. Are they appropriate for the sample population?
4. Are the questionnaires comprehensive enough to collect all the information needed to address the purpose and grab of the study?
5. Does the instrument look like the (Oguala, 2010)?

The reliability of the instrument was obtained using the spearman's Rank order correlation statistics and a reliability coefficient of 0.89 was found which was considered good enough. Data collected were analyzed using chi-square at 0.05 alpha level.

RESULTS

Demographic data: This section deals with the demographic information of the study

Table 1: Sex of the respondents

Gender	Frequency	Percentage
Male	114	84.4
Female	21	15.6
Total	135	100

Table 1 above shows the sex distribution of the respondents. 84.4% of the respondents are male while 15.6% of them are female.

Table 2: Marital Status of the Respondents

Gender	Frequency	Percentage
Single	98	72.6
Married	29	21.5
Divorced	8	5.9
Total	135	100

Table 2 above schools the marital distribution of the respondents 72.6% are single, 21.5% married and 5.9% of the respondents are divorced.

Table 3: Age of the respondents

Age	Frequency	Percentage
Below 8	52	38.5
9-11 years	37	27.4
12-15 years	21	15.6
16-20 years	18	13.3
21 years and above	7	5.2
Total	135	100

Table 3 above shows the age distribution of the respondents. 38.5% of the respondents are below 8 years 27.4 are between 9 – 11 years, 13.3% between 17 – 20 years, 15.6% of the respondents are between the ages of 12-15 years while 5.2% of the respondents are 21 years and above.

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DATA ANALYSIS AND INTERPRETATION OF RESULTS

Table 4: Research Question 1

Relationship between impact of class size and academic performance of pupils in early childhood education in Bwari Area Council	**SA**	**A**	**U**	**D**	**SD**	**MEAN**
There is relationship between pupils seated at the back and seeing what is written on board	71 (52.6%)	32 (23.7%)	7 (5.29%)	15 (11.1%)	10 (7.4%)	4.03
Pupils have opportunity to cheat during class exercise test and exam in large class	59 (43.7%)	36 (26.7%)	5 (3.7%)	19 (14%)	16 (11.9)	3.76
Pupils can do other thing like copying notes in large class when elementary science lesson is going on without the teacher noticing	57 (42.2%)	38 (28.1%)	6 (4.4%)	21 (15.7%)	13 (9.6%)	3.78
Smaller class size allow more time for teachers to help pupils with activities that can develop skills to increase achievement	61 (45.2%)	39 (28.9%)	4 (3%)	19 (14.0%)	12 (8.9%)	3.87
Grand mean						**3.86**

From the table 4 above 71(52.6%) strongly agree 32(23.7%), 7(5.2%) undecided, 15(11.1%) disagree and 10(7.4) strongly disagreed that there is relationship between pupils seated at the back and seeing what is written on board. In item 2, 59(43.7%) strongly agree, 36(26.7%) agree, 6(3.7%) undecided, 19(14%) disagree and 16(11.9%) strongly disagreed that pupils have opportunity to cheat during class exercise, tests and exams in large class. In item 3, 57(43.7%) of the respondents strongly agree, 38(28.1%) agree 6(4.4%) undecided 21(15.7%) disagree and 13(9.6%) strongly disagreed that pupils can do other things when lesson is going on without the teachers material. In item 4, 61 (45.2%) of the respondent strongly agree, 39(28.9%) agree 4(3%) undecided, 19(14%) disagree, 12(8.9%) strongly disagreed that smaller class sizes allow more time for teachers to help pupils with activities that can develop skills to increase achievement.

Table 5: Research Question 2

What is the impact of class size on instructional strategies in early childhood education in Bwari Area Council, Abuja	**SA**	**A**	**U**	**D**	**SD**	**MEAN**
Practical demonstration skill are neglected in large class size	20 (29.6%)	47 (34.8%)	16 (11. 9%)	18 (13.3%)	14 (10.4%)	3.56
Teachers are likely to give more class exercise to pupils in smaller class size than larger class size	63 (46.6%)	35 (26%)	11 (8.1%)	14 (10.4%)	12 (8.9)	3.91
The use of audio-visual aids in large class would make lessons more interesting	70 (51.9%)	33 (24.4%)	4 (3%)	17 (12.6%)	12 (8.1%)	3.99
The atmosphere in large class size is always teacher-centered with passive pupils	51 (37.8%)	40 (29.6%)	5 (3.7%)	24 (17.8%)	15 (11.1%)	3.65
Grand mean						**3.78**

In item 1, from the above table 20(29.6%) strongly agree, 47(34.8%) agree, 16 (11.9%) undecided, 18 (13.39%) disagree and 14 (10.4%) that practical demonstration skills are

neglected in large class size. In item 2, the table shows that 63(46.6%) strongly agree, 35(26%) agree, 11(5.1%) undecided 14(10.4%) disagree and 12 (8.9%) strongly disagreed that teachers are likely to give more class exercise to pupils in smaller class size than larger class ones. In item 3, 70(51.9%) of the respondents, strongly agree, 33(24.4%) agree 4(3%) undecided, 17(12.6%) disagree and 15 (11.1%) disagreed that the use of audio-visual aids in large class would make lessons more interesting. The last item indicates that 51(37.8%) strongly agree, 40(29.6%) agree 5(3.7%) undecided, 17(24.8%) disagree and 11 strongly disagree that that the atmosphere in large class size is always teacher centered with pensive pupils with a grand mean of 3.78 the respondents strongly agree that there is an impact if class size on instructional strategies in early childhood education in Bwari Area Council.

Table 6: Research question 3

What is the psychological implication of class size on early childhood in Bwari Area Council, Abuja	**SA**	**A**	**U**	**D**	**SD**	**MEAN**
Most pupils relaxed in large class size since it's difficult to know them by name	67 (49.6%)	29 (21.5%)	7 (5.3%)	19 (14.1%)	13 (9.5%)	3.87
Most pupils feel shy to speak in large class size	73 (54.1%)	31 (22.9%)	4 (3%)	18 (13.3%)	9 (6.7%)	4.04
Pupils seldom have the opportunity to express their self in large class size	82 (60.7%)	41 (30.4%)	2 (1.5%)	6 (4.4%)	4 (3%)	4.41
Pupils like sitting at the back of the class to hide from the attention of the teacher in large class size	84 (62.2%)	40 (29.7%)	1 (0.7%)	6 (4.4%)	4 (3%)	4.44
Grand mean						**4.19**

In item 1, 67(49.69%) of the respondents strongly agree, 29(21.5%) agree, 74.3%) undecided, 19(14.1%) disagree and 13(9.5%) strongly disagree that most pupils relaxed in large class size since it is difficult to know them by name. In item 2, 73(54.1%) strongly agree, 31(22.9%) agree, 4(3%) undecided, 18(13.39%) disagree and 9(6.7%) strongly disagree that most pupil feel shy to speak in large class size. Item 3 revealed that 82(60.7%) strongly agree, 41(30.41%) agree, 2(1.5%) were undecided, 6(4.41%) disagree and 4(3%) strongly disagreed that pupils seldom have the opportunity to expense their self in large class size. In item 4, 84(62.29%) strongly agree, 40(29.79%) agree, 1(0.7%) undecided 1(4.4%) disagree and 4(3%) disagreed that pupils like sitting at the back of the class to hide from the attention of the teacher in large class size with a grand mean of 4.19, it means that the respondents strongly believe that pupils like sitting a the back of the class to hide from the attention of the teacher in large class size.

Table 7: Research Question 4

What is the social impact of class size on early childhood education in Bwari Area Council, Abuja	SA	A	U	D	SD	MEAN
Pupil-pupil interaction is mostly neglected in large class size	62 (45.9%)	38 (28.1%)	5 (3.8%)	19 (14.1%)	11 (8.1%)	3.90
Teacher-pupil interaction is mostly neglected in large class size	56 (41.4%)	37 (27.5%)	9 (6.7%)	18 (13.3%)	15 (11.1%)	3.75
Teachers easily identify pupils who need extra tuition and attention during lesson period in small class size than in larger class size	66 (48.9%)	41 (30.3%)	4 (5%)	15 (11.1%)	9 (6.7%)	4.04
Teachers find it difficult to remember pupils by name in larger class size	53 (39.2%)	40 (29.6%)	6 (4.5%)	23 (17%)	13 (9.7%)	3.72
Grand mean						**3.85**

Table 7 above revealed that 62(45.4%) strongly agree, 18(28.1%) agree, 5(3.6%) were undecided, 19(14.1%) disagree and 11(8.1%) strongly disagree that most pupils relaxed in large class size since it is difficult to know them by name. in item 2, 56(41.40%) strongly agree, 37(27.5%) agree, 9(6.7%) were undecided, 18(13.3%) disagree and 15(11.10%) strongly disagreed that teacher pupil interaction is mostly neglected in large class. Item 3 revealed that 66(48.9%) strongly agree, 41(30.3%) agree 4(5%) undecided, 15(11.1%) disagree and 9(6.7%) strongly disagreed. That teachers easily identifies pupils who need extra tuition and attention during lesson period in small class size than in larger class size. In item 4, 53(39.2%) strongly agree, 40(29.6%) agree, 6(4.5%) undecided, 23(17%) disagree and 13(9.7%) strongly disagreed that teachers find it difficult to remember pupils by name in larger class size. With the Grand mean of 3.85 it revealed that the participants strongly agreed that there is a social impact of class size on early childhood education in Bwari Area Council.

Hypothesis Testing

Hypothesis One

There is no significant relationship between then mean ratings of the impact of class size and early childhood education in primary schools in Bwari Area Council. To test this hypothesis, the chi-square statistics was used as shown below;

Summary chi-square table to show if significant relationships exist between the mean ratings of the impact of class size and early childhood education.

$$X^2 = \frac{\sum (O - E)^2}{E}$$

X^2 = chi square

O = observed

E = expected

$$E = \frac{Row\ total + column\ total}{Grand\ total}$$

$\sum$ = summation

Table 8

	Observed	**Expected**	**Residual**
Strongly agree	11	27	-16
Disagree	17	27	-10
Undecided	4	27	-23
Agree	33	27	6
Strongly disagree	70	27	43
Total	135		

Test Statistics

Chi square	102.593
df	4

Assumption significance 0.00

alfa level = 0.05

Since X^2_{cal} is greater than X^2_{tab} it shows that there is a significant relationship. The Ho is therefore rejected and the alternative hypothesis accepted that is there a significant relationship between the mean rating of the impact of class size and early childhood education. Hypothesis 2 states that there is no significant relationship between the mean ratings of the impact of class size on instructional strategies and effective teaching and learning in early childhood education among primary schools in Bwari Area Council. To test this hypothesis the chi-square statistics is used as follows;

$$X^2 = \frac{\sum (O-E)^2}{E}$$

X^2 = chi square

O = observed value

E = expected value

$E = \frac{Row\ total + column\ total}{Grand\ total}$

$\sum$ = summation

Table 10: Chi square calculated

Observer/ participant	**Expected**	**O-E**	**(O-E)^2**	$\frac{(O-E)^2}{E}$
71	27	44	1936	71.703
32	27	5	25	0.926
7	27	-20	400	14.815
15	27	-12	144	5.333
10	27	-17	289	10.704
				103.41

X^2_{cal} = 103.41

X^2_{tab} = 9.488 or 9.49

At α = 0.05

df = 4

Null hypothesis is rejected since 103.41 > 9.49
Therefore, there is significant difference between the mean ratings of the impact of class size on instructional strategies and effective teaching and learning education in primary schools in Bwari Area Council.

DISCUSSION OF FINDINGS

Hypothesis one states that there is no significant relationship between the mean ratings of the impact of class size and early childhood education in the primary schools in Bwari Area Council. Using chi-square statistics to test the hypothesis at 0.05 alpha level of significance,

with a calculated X^2 of 102.59 and a tabulated value of 9.49, the null hypothesis was rejected that is, there is a significant relationship between the mean ratings of class size and early childhood education in primary schools in Bwari Area Council. Evans and Povova (2015) remarked that a negative non-linear relationship between class size and student evaluation especially with instructors interaction with the students. Small class size provides learning experiences that facilitate increased collaboration and communication among students, provide helpful learning opportunities and foster student meta cognitive skills through the development of information discovering and help seeking behavours. Azigwe, J.B; Kyriakides, I, Panayiotou, A; and Creemers, B. P. (2016) remarked that in large class, teaching is difficult, reading to the whole class is a mirage. There is always low participation in class activities.

Hypothesis two states that there is no significant relationship between the mean ratings of the impact of class size on instructional strategies and performances. The calculated X^2 is 103.41 while the tabulated is 9.49 null hypothesis is rejected that is there is a significant relationship between the mean ratings of the impact of class size on instructional strategies and effective teaching and performance in early childhood education among primary schools in Bwari Area Council. Practical demonstrations are better achieved in a smaller size arrangement of class than the large one. Pupils are not cohesive in a large class. The use of audio-visual aids would not be appropriate and cannot make lessons interesting in a large class.

Learners in a large class cannot access individual care from teachers. (Mustapha Muhammed, Assad, Abdulhammed, 2014). However, there is general consensus among scholars that smaller class sizes leads to better attention for students, better results, enhanced learning, there is a communal existence in the class, opportunities for participation, focus on learning, more feedback, one to one intervention between the teachers and students and leads to shared ideas. Alex, Molnar, Kruneger Diane and Jeremy 92005) with this, the significant relationship between the mean rating of between class size which helps increase academic performance of students as assumed by Hattie (2009) this is however not easily in a large class. By influence class size has influence on the instructional strategy that a teacher may employ. With smaller class size, teachers devote more time to instruction and less to classroom management, smaller classes are popular because various studies have supported it for better academic achievement for pupils, improvement of teacher morale and fewer disciplinary problems. This result is supportive of hypothesis one above.

In conclusion, a significant relationship was found between the mean ratings of class size and early childhood education among primary schools and a significant relationship was found between the mean ratings of instructional strategy and early childhood education among primary schools in Bwari Area Council. This has shown clearly that class size has implication for all the academic activities in the early childhood education.

Counseling Implications

A class size that encourages various antisocial acts by pupils poor classroom management and planning, poor academic assessment and an inability to attend to individual needs can not be expected to produce the much desired products. Counseling is supposed to bring succor to an individual through face to face interaction. The indisciplinary problems that is inherent in a large class needs the attention of the counselor. Therefore, there is the need for a constant behavioural counseling. The teachers equally need constant intervention from the counselor.

Recommendation

Based on the aforementioned, the following recommendations are made.

-It can be seen from the research that large classes do not help in attaining the much desired objectives in the classroom. It is therefore recommended that an acceptable size has to be used.

-Where the large class becomes inevitable, efforts should be made to introduce various strategies to undermine the challenges of large class size like grouping and project work.

-

The use of microphone in a large class is roughly desirable so that a reasonable percentage of the students can be reached where a large class is unavoidable.

-Efforts should be made by the government to build enough class rooms.

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