

Class Size and Its Impact on Academic Performance of Pupils of Choggu Demonstration Junior High School

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Abstract: - The study was carried out to examine the impact of class size on the academic performance of choggu Demonstration Junior High School pupils'. Descriptive survey design was used for the study. The population for the study was made up of pupils and teachers in the school. The Stratified Random Sampling method was chosen. It was deemed appropriate because the various forms namely form one, two and three, constituted the strata and each stratum was represented in the study to enable the researcher make generalization. Sixty two pupils each from the various forms were therefore sampled from each stratum using the simple random technique. The main tools used in the study were questionnaire and interview. The findings revealed that large class size is caused by the introduction of education policies leading to inadequate classrooms in the schools and large class sizes have a negative impact on academic performance of pupils. It concludes that the main causes of larger class size were as results of Government Policies such as Capitation grant, FCUBE and other Religious factors. The study recommends that Ghana Education Service, District Assemblies and other stakeholders in Education should come to the aid the school.

Keywords: Academic, class size, performance, strategies, and junior high school

I. INTRODUCTION

Background to the Study

In pre-literate societies, education was achieved orally and through observation and imitation. The young learn informally from parents, extended families, etc. Nowadays however, formal education is being emphasized. This consists of systematic instructions, teaching and training by professional teachers. (Miawskic, 2000). Classrooms are created in the school buildings to carry out this professional role. This building should according to Blandfords et al (2005) offer the most appropriate places and space for learning for pupils and students. These scholars maintain that it is axiomatic the environment in which learning takes place impacts positively on all its learners.

Choggu Demonstration Junior High which is taken as the sample for this study. This school was established in 1966 with a double stream, that is A and B forms.

Investigation reveals that the pupils population of the school increased from Eight Hundred (800) to Thousand and Fifty

(1050) in 2009. The double stream was changed as a result of this increment in pupils' population to four streams, that is form one A, B, C, and D. An added block to the existing one was established to cater for this trend. As a result of this, the school has two blocks, which is block A and B respectively.

Franklin et al (1991) revealed that small class sizes are more preferable to large class sizes because they result in high levels of pupil's academic performance. This implies that pupils experience high academic performance when the class size is low. This may be as a result of absence of certain basic bottle necks associated with low enrolment figure in class. However, low academic performance is likely to be experienced if the class size is high because of the presence of some bottlenecks associated with such a class.

According to Chesworth (1998), the average primary school in the UK has a child to teacher ratio of 22:1. For him, one needs not to ask about the average class size, but rather finds out if class sizes escalate dramatically as the children increase in age from 5-10. He therefore used the age range of pupils as a determinant in considering class size.

A classroom according to Brown et al (2016) is a room in which teaching and learning can take place. Brown et al (2016), notes that a classroom with good physical environment should be large enough to occupy a class of 40 or 45 and that it must have good ventilation and lightening. This no doubt can ensure comfort for pupils which will inevitably create a conducive environment for effective learning.

Chesworth (1998) maintains that the type of school and how to compare their standards of education have a great influence on attendance to it. He notes that parents using this as a guide will have a good idea of:

- Whether they are going to opt for fee paying or a state school
- How to find a school near home
- They want the school to have religious affiliation
- They want a school that have a selective admission policy
- How to evaluate the performance of a form small to large size

According to Chesworth (1998), one major factor among other factors is class size. For him, the legislation have now placed pupils for class size for 5, 6 and 7 year old to be reduced so that classes only have 30 pupils or few.

Some educational scholars maintain that classes that have 30 or few pupils in a school are considered small classes while a class that consists of 70 pupils or more is considered as large. This is in consonance with the class size of Choggu Demonstration Junior High School form one which is (80) pupils in a class. Choggu Demonstration Junior High located in Tamale is found in the same area with other mission schools such as Bishops Junior and St. Pauls Junior High School, Choggu, is a suburb of Tamale and is dominated by Muslim populace.

Statement of the Problem

Experience shows that large class size brings a lot of hindrance in the teaching and learning encounter. This emanates from the fact that the voice of the teacher may not be heard by some pupils, teacher cannot have an eye on all pupils, most of the pupils will not pay attention and others will have conflicts among each other. The extent to which large class size affect teaching and learning in Choggu Demonstration is not well researched. The critical questions that need answers are:

1. What are the causes of large class size in Choggu Demonstration Junior High School?
2. What are the effects of class size on the academic performance of pupils of Choggu

The objectives were to;

Identify the causes of large class size in Choggu Demonstration Junior High School and to explain the effects of large class size in Choggu Demonstration Junior High School Demonstration Junior High School?

The significance of the study

The study identified the effects of large class size on the academic performance of Choggu Demonstration Junior High School pupils. The unveiling of the effects helped in identifying appropriate solutions to the problem. The study also created awareness to policy makers in Education and other bodies about the problem of enrollment in schools and suggested appropriate intervention strategies..

The findings revealed ways of improving upon the supply of teaching and learning materials and professional staff development to bring about effective teaching and learning that will lead to improvement in the academic performance of the pupils.

Class size and its effects on the academic performance of pupils

Learning to live in a classroom according to Polland and Bourne (1995) involve among other things, learning to live in a crowd. Most of the things that are done in the

classroom according to them are done with others or at least in the presence of others and this, they added has a profound implications for determining the quality of a student's life. They noted that children generally spent less time working in more distracted things as the class size of their workgroup increase from one to twenty.

According to Bishop (1986), one of the causes of large class size in many schools today is rapid population growth. He further set an example using Indian schools in the last half of the century. According to him, rapid population growth in India during this period has made the Indian population to be dominated by youth who needs education and hence called for increase in number of pupils in class which leads to large class size.

Considering Bishop (1986) view, rapid population growth can leads to large class size as the case in India is not different from that of Ghana with reference to population growth span. Government policy on education with emphasis on the Free Compulsory Universal Basic Education (FCUBE) cannot be left out as a great variable. This FCUBE programme which was formulated in 1992 was a policy which led to an increase in school enrollment which would inevitably lead to increase in class size.

According to Chesworth (1998) legislation has come into place for class size for 5, 6 and 7-year olds to be reduced so that classes only have 30 pupils or fewer. He added that if a child's personality is taken as a yardstick, and he or she is shy, he/she may feel intimidated if the parent picks a large class. He notes that with reference to the question of how the child feels about the teachers and school and picking a school where the child's friends is going to go, it will be less intimidating for them if a friend is there. He also noted that, at this stage, it is important to realize that they like and respect their teacher hence they are not afraid of asking questions or enjoy in school.

Chesworth (1998) maintains that with reference to what teaching methods and what subjects are taught, international research acknowledges a balance between small-group teaching and class teaching. It also finds out that active class teaching-with a lot of interaction and visual displays-is effective when married with group and individual work.

It is noted that, another major cause of large class size is inadequate number of teachers in many schools, mostly schools in the rural areas in Ghana. Trained teachers upon graduation do not accept posting to rural areas which normally result in only few teachers in the school.

This finally led to more than the required number of pupils for a class with a teacher handling them. It can also create a situation where two classes are put in one class for the teacher to handle. This no doubt makes it difficult for the teacher to control them for effective teaching and learning. Added to this, it is noted that, the teacher may find it difficult in marking and giving feedback to pupils whenever exercises are given. This can lead to their poor academic performance.

Limited nature of educational infrastructure has also been identified to contribute immensely to the causes of large class size. Most schools have inadequate infrastructure like classrooms to contain the large number of pupils in the school. In some schools, pupils of different levels like P4 and 5 are combined in one class due to the problem of inadequate infrastructure. According to McNamara (2001), if the primary teacher was able to teach one individual child for much of the time, her work would be very much easier, she should focus upon the particular personal qualities of her pupils and the material to be taught. He added that the teachers' undivided attention would ensure that the child engaged with its learning. For him, one-to-one teaching has much to commend it, as is reorganized by those who have the wealth to hire private tutors for their children. Mcnamura (2001) maintains that perhaps this is why parents can have such an impact upon their children's learning during the formative years and why parents may be better at getting their children to learn.

The Ghana Poverty Reduction Strategy in 2002 reveals that, the three Northern Regions had higher pupil teacher ratio than the national average of 43 at the primary schools. It noted that Northern Region was 58 pupils per teacher, Upper East 86 pupils per teacher and Upper West 62 pupils per teacher. At the Junior Secondary School level, the National average was 32 pupils per teacher. However, in the Upper East, the ratio was 74 pupils per teacher whilst the Northern Region recorded 73 pupils per teacher..

Whiles the national average class size at the primary school was 46 pupils, Upper East had average of 120 pupils per class. The Northern Region has 75 pupils per classroom and Upper West had 61 pupils per classroom. At the Junior Secondary School level, the national average of 60 pupils per classroom was dwarfed by 188 pupils per classroom in Upper East Region, 161 in Northern Region per classroom and 74 pupils in class in Upper West Region. This goes to justify the higher number of pupils in class in the three regions in Northern Ghana.

According to sharp et al (2011) Science is taught elsewhere apart from the classroom. For example; in the hall, in corridors, in special science room, a kitchen or outdoors. For them, factors which may affect or influence the layout of the classroom and other teaching areas include the size and shape of the space available, the age and number of children present, the amount of furniture available and the location of exits, storage and resource areas, strides, boards and windows. They added that freedom of movement around the classroom and clear lines of sight are essential and that moving furniture for every lesson is not always possible or convenient. This, according to them takes time and can cause disruption. Implicit in the view of these scholars is that in subject areas such as Science, the classroom is only one of the places where teaching and learning can take place. However, there are other places where science lessons can be demonstrated.

Parents' choice of school for wards can inevitably leads to increase students in class. Polland and Bourne (1977) for instance note that recent legislation has aimed to increase the amount of choice to school open to parents so that they can in theory, send their child to the school of their choice. For them, in reality, the degree of choice available to parents may vary quite widely, depending on factors such as where they live, how many schools are available within easy reach and whether the schools have room for them or not. In response to the question, "why did you choose your child's school to parents, the most frequent response, these research fellows note was that, the school had been chosen on grounds on "locality". In other words, it was easily accessible from the child's home. In their own words by local school, "we mean the one which is geographically nearest to the child's home".

Heather ettal (2008) maintain that the level of students participation and interaction can be affected by the choose of room itself. They added that in recent years, the experience of small group teaching and learning has come under threat. They noted that with the expansion of student's number in higher education, class size has increased dramatically;, Small group teaching with a tutor is expensive when compared withthe lecture method approach. They identified small group teaching as any teaching and learning occasion which brings together between two and twenty participants. They noted that the participants may be teachers (tutors) or students working on their own.

According to Brown et al (2016), many teachers in Africa find themselves working in Primary School classroom that contain many students sometimes almost filling the room. For them, although,a large class has no "actual size", usually it is, measured in terms of number of students per teacher (student-teacher-ration). They maintain that in some countries 23-30 students per one teacher is considered large, while in other countries, this is seen to be normal or even quite small. According to them, from a teacher's perspective, though a class is "large" whenever it feels large but that a class of more than 50 students is usually considered a large class.

In their attempt to identify challenging opportunities to large class teaching, Brown P. et al (2016) maintain that, in a large class setting, the teacher has the opportunity to improve his/her organizational and managerial skills as his or her work to creatively organize the classroom into a comfortable welcoming learning environment and to manage the many students within it.

According to them, large class gives one the opportunity to improve one's teaching and presentation skills. They added that the value of large class is that it contains a diversity of students and learning styles and one can use many different active and fun ways of teaching

Effects of Large Class Size on the Academic Performance of Pupils

Previous studies on the effects of large class size on instruction and academic performance including classroom management and other variables cannot be underestimated. According to Krieger (2003), teacher in small class size uses more facial expression, more eye contact, more positive remarks and more times on perfect instruction for better achievement of his or her pupils. This implies that since the number of pupils in the class is small, teachers would have the opportunity to socialize well with the individual pupil and get to know them better and identify their learning difficulties. Less time is also spent on disciplinary problems. Compared to a large class, the teacher would find it difficult to find solutions to their learning difficulties and control them to ensure discipline in the classroom.

With reference to large class size impact on academic performance, it is recorded that Alhaji Adulai (Friday), the then Tamale Metropolitan Chief Executive highlighted at a town meeting in Tamale on Thursday 13th January, 2011 that pupils in Tamale Metropolis have been performing poorly at Basic Certificate Examination (BECE) for the past seven years as a result of extremely large class sizes. He also observed that many private schools and other elite public schools are attracting an unprecedented number of pupils. Unfortunately the school does not limit the number that is enrolled in each class and inevitable outcome effect is reduction in quality of education. Basic learning theories support the view and concludes that the ideal learning environment should be cultivated around quality teacher-student interaction and large number preclude any such effective interaction.

Halbech et al (2001) also found out that small class in grade one to three (15 pupils for a teacher) had fewer disciplinary problems, more instructional strategies and an indept coverage of the subject content. In view of this, if pupils in a class for a teacher are very small, giving exercises, marking and evaluating pupils' performance will be easier for the teacher, hence can boost pupils academic performance as compared to a teacher who handles seventy five (75) or more pupils in a class like Choggu Demonstration Junior High School. A teacher in this class will find it difficult to mark and give feedback when exercise and assignment are given. This can lead to non-performance of pupils.

Strategies that can Improve Teaching and Learning in Large Class Size

Dondieu and Palmas (2000) in their write up, Guide notes to the Study of Education, Volume one maintain that "Motivation is an important factor in effective learning". This means that teachers in large classes should find ways of motivating pupils as it will make other pupils to also demonstrate effort to learn as expected to receive motivational package.

Studies reveal that teaching should always be done using activity based lessons where pupils always learn better when they are allowed to practice what is being taught and see lessons presented practically. Scholars like Thorndike (1996) has it that "practice or repetition in learning skills strengthens the competence of the learner. This goes to confirm that activities should be included and repeated in lesson delivery. This, at least can help the teacher to get needed attention from the pupils which will improve their learning even though the class is large.

Improve learning in large class as identified by scholars is questioning techniques. It is noted that questions should be evenly distributed in class. The good student should not take control over the class. Average students, it is suggested should be given chance to answer questions as this will make them feel part of the class.

Public schools, especially those located in rural areas have been identified by some scholars to have insufficient teachers to fill the classrooms, hence creating large class size. Studies reveal that the phenomenal percentage of teachers trained is the same as the number of teachers who leave the field. This circumstance is as a result of poor conditions of service provided to teachers to be motivated to be teachers forever. Dondien (2000) states that "motivation is an important factor in effective learning". For him, children put in more energy into the learning process if they are motivated. This implies that teachers in large class size should find ways and means of motivating pupils to enhance effective teaching and learning.

Class Size and its Impact on Academic Performance of Pupils

A classroom according to Brown et al (2016) is a room in which teaching and learning activities can take place. They noted that class size in recent times is a common phenomenon in most Ghanaian schools, and can range from small group of five or six to big classrooms with hundreds of students. In the past decades, classrooms in schools in many developing countries of which Ghana is no exception were not experienced with large class number of students.

However this trend has changed. In Code Publications (2010, 2017) Quintilian notes that teaching a class of pupils gives the good teacher a delightful experience which lifts him up to do his very best instead of the dull activity of teaching just one child. But even where the teacher teaches a class, it is obvious that he can still pay attention to individual students who need his help. It was added that in the case where the child is the lone student in class, there is no competition and the child cannot compare his performance with that of any other student. It is noted that some teachers these days in fact condemn rivalry and competition within the school. But Quintilian stands firmly behind healthy competition on the grounds that it brings progress. In fact, Quintilian maintains that he would be very happy to recommend any teacher who arranges the pupils in a class

according to their abilities or according to their efforts in a particular subject.

Another point of great interest to Quintilian is that when a new pupil enters a class, it is the duty of the teacher to study him and find out his abilities, his intelligence, the way he conducts himself, the way he behaves and whatever characteristics he has. The teacher has to know and understand the pupils so that he may be able to give the child maximum help. He noted that this is the work of the teacher, especially where he has a class of many students.

II. METHODS AND PROCEDURES

The research design used in this study was the descriptive sample survey. According to Gay (1957) "descriptive sample survey design "involves collecting data in order to test hypothesis or answer questions concerning the current status of the subject of the study" P 189. It was chosen because judging from the study; it was the most appropriate design which led the researcher to draw meaningful conclusions from the study. The population for the study was made up of pupils and teachers in Choggu Demonstration Junior High school.

The Stratified Random Sampling method was chosen and suitable for obtaining a representative sample for the study. It was appropriate because the various forms namely form one, two and three, including the staff of the school constituted the strata and each stratum was presented in the study to enable the researcher make generalization. Hence Sixty two pupils each from the various forms were sampled from each stratum using the simple random technique. The main tools used in the study were questionnaire and interview. This elicited responses from respondents on specific areas. The preamble of the questionnaire spelt out the intention of the research and assured respondents of absolute confidentiality. One hundred and eighty (180) questionnaires out of the one hundred and eighty six (186) representing ninety seven (97%) were returned. Six (6) of it representing three (3%) however could not be returned

III. RESULTS AND DISCUSSIONS

Causes of Large Class Size in Choggu Demonstration Junior High School

Responses to this question are presented below in table one:

Table 1. Causes of large class size

Response	Frequency	Percentage
School management related causes.	8	4%
Educational policies introduction.	96	53%
Government or GES inability to build more classrooms.	30	17%
Ghana education service inability to provide more professional teachers and TLMs	30	17%
Religious related causes	16	9%
Total	180	100%

Source: (field Data, 2018)

It can be observed from table 1 that thirty (30) respondents representing seventeen (17%) of the respondents maintain that the Government or Ghana Education Service inability to provide more classroom and more teachers to accumulate increase number of pupils serve as a casual factor for large class size.

Further more 16 (9%) of the respondents were of the view that religious factor is a great variable. Explanations to this response revealed that Choggu is dominated by Muslims and since mission schools such as Bishop's and St Pauls' R/C Junior High School (JHS) are all nearby school, Muslim parents may prefer sending their wards to Choggu JHS which is independent of any religious affiliation. Again only 8 (4%) respondents of the sampled attested to school management related causes as a factor in table 1.

Also, twenty pupils representing 36% of the respondents were of the view that the causal factors of large class size was as a result of religious factors. It was noted that most pupils in Choggu Demonstration Junior High School parents are Muslims. They therefore prefer enrolling their wards there instead of other schools in the same area such as Bishops JHS and St. Pauls R/C Junior High School.

Effects of Class Size on the Academic Performance of Pupils of Choggu Demonstration Junior High School

Disciplinary problems were also identified to be less when class size is less. This is reflected in the pupils' response to the question whether disciplinary problem is higher in large class size than small class size. Results with respect to this question are presented in Table 2 below.

Table 2: Disciplinary Problems with reference to large Class Size

Item	Response	Frequency	percentage
Discipline problem	Yes	165	92
	No	15	8
Total		180	100

Source: (field Data, 2018)

Analysis of responses with respect to the question of impact of larger class size on discipline from table 2, revealed that 165 (92%) of the respondents accept in totality that large class size is characterized with indiscipline. Fifteen (15), that is, eight percent (8%) of the respondents disagreed with this notion. It can therefore be concluded that a high percentage of the respondents attested to the fact that larger class size can bring about indiscipline. This goes to confirm Halbechetal (2001) studies that revealed that small class in grade one to three experience fewer disciplinary problems and that of Kriegu (2003) who also maintains that less time is used on disciplinary issues in small class size compared to large class size.

Another important response is that large class size impact on pupils' attitude towards learning. Responses with respect to this item are depicted below in table 3.

Table 3: Impact of large class size on pupils attitudes towards learning

Item	Response	Frequency	Percentage (%)
Large class size affects	Yes	172	96%
	No	8	4%
Total		180	100

Source: (field Data, 2018)

It was revealed through analysis from Table 3 above that, One Hundred and Seventy Two (172) representing 96% of the respondents confirmed that large class size affects pupils' attitude to learning. They were of the opinion that large classes are always congested and pupils feel uncomfortable especially during warm seasons. However, 8 respondents representing 4% denied this assertion.

Also, established from respondents is the inability of Ghana Education Service to provide professional teachers and teaching learning materials. One hundred and sixty(160) pupils representing 89% of the respondents were of the view that causes of large class size is due to the inability of Ghana Education Service to provide more professional teacher and more teaching and learning materials in order to ensure effective teaching and learning in the schools. This is shown below in Table 4.

Table 4: Effects of Large Class Size on Pupil's Academic Performance

Item	Response	Frequency	Percentage (%)
Poor academic Performance	Yes	10	67%
	No	5	33%
Total		15	100

Source: (field Data, 2018)

From Table 4 above, it can be observed that, fifteen (15) teachers out of the twenty five (25) that is sixty percent (60%) of teachers in the school gave out some responses with respect to the effects of large class size on the academic performance of pupils. Analysis from the result the table reveals that ten (10) of the teachers representing sixty seven (67%) of them attest to the fact that, large class size can lead to poor academic performance while five (5) of them representing thirty three percent (33%) disputed this assertion. Explanation to this response revealed that it may be due to overcrowding and lack of teaching-learning materials. This goes to confirm Franachiere etal (1971) assertion that, small class size is more preferable to large class size, because it results to high level of academic performance.

School administrators should therefore suggest to the government to add more professional teachers including teaching and learning materials to enhance effective learning.

Reference to response regarding question, why did you choose to come to this school, is presented below in Table 5.

Table 5: Reasons for Choosing Choggu Junior High School

Item	Frequency	Percentage (%)
The school,		
1. has nice buildings	10	6%
2. has many teachers	28	16%
3. is big	25	14%
4. is near my house	117	65%
Total	180	100%

Source: (field Data, 2018)

Analysis of responses as can be observed from Table 5 above reveals that 117 (65%) respondents agreed that, they chose to come to choggu demonstration Junior High School as a result of its nearness to their home. This goes to confirm, Polland & Boune (1977) studies where reports from respondents revealed that the school were chosen on grounds of locality. However 28 respondents (16%) noted that they chose it because it has many teachers while 25 of the respondents representing (14%) opined that, they chose it because it is a big school. The item with the least response was that it was chosen because of its nice buildings. Thus, only 10 representing 6% of the respondents opted for it because of its nice buildings.

IV. CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the study revealed that, the main causes of larger class size was as results of Government Policies such as Capitation grant, FCUBE and other Religious factors.

Again, the study concludes that class size has an impact on academic performance of pupils in examination, class test, quizzes, etc. Small class size for example leads or results in high academic performance and ensures maintenance of discipline as against large class size associated with some impediments such as low academic standards, indiscipline, etc.

Following the conclusion, the following recommendations were made;

- Ghana Education Service, District Assemblies and other stakeholders in Education should come to the aid of Choggu Demonstration Junior High school and other schools experiencing high enrolment figures by given them additional classroom block(s). This approach will assist in minimizing the number of pupils enrolled in a class. More qualified professional teachers should be trained and posted to the schools. This can be achieved through the following:
- The Ghana Education Service, curriculum designers, stakeholders, teachers and other people concern with education should improve upon the optimal class size reduction policy in our schools.

- An enhancement of teaching skills in handling large classes needs to be given high attention by the Government and the Ghana Education Service.
- Seating arrangement in class should be well designed wherein short pupils and those with poor eye sight seat in front while the taller ones seat at the back to prevent obstruction and promotes effective teaching and learning. Good seating arrangements promote effectiveness in teaching and learning because pupils who cannot be easily reached by the teacher are reached by him or her.
- More teaching and learning materials should be provided to the school (s) to support teachers to put whatever they teach the pupils in theory or abstract to concrete for pupils to see things in reality since pupils at this stage learn through concrete experiences. This no doubt will enhance effective learning because they will develop better understanding of things they see and touch as against an approach where the child is taught in abstract as noted by Brown et al (2016).
- The tables and chairs in the classroom should be arranged well. This will facilitate free movement through the rows by the teacher and pupils. This leads to effective supervision of the pupils by the teacher.
- Teacher can arrange situation to permit social interactions, so that children (pupils) may learn from one another. Teacher may do this by adopting mixed ability grouping so that the less intelligent or matured

children can learn from the more intelligent or matured ones.

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