



Implications of Large Class Size on Effective Teaching and Learning in Nigerian Tertiary Institutions: Lecturers' Perception

Olubunmi Kayode Ayanwoye¹

¹ Federal University Oye-Ekiti

Funding: No specific funding was received for this work.

Potential competing interests: No potential competing interests to declare.

Abstract

Large class sizes in Nigerian postsecondary institutions are a necessity due to the country's population expansion and recent economic collapse. In almost all of Nigeria's public tertiary institutions today, the lecturer-to-student ratio exceeds the outlined guidelines. The circumstance must be addressed for enhanced student academic progress because it cannot be avoided. In order to find workable solutions to the issue, the study investigated the impact of large class sizes on teaching and learning at Nigerian academic institutions.

The study was guided by the theory of continuous improvement, and a non-experimental descriptive survey type was used with 2538 lecturers from the faculty of education and college of education who were purposefully and randomly chosen from state and federal government-owned institutions in southwestern Nigeria. In the study, a validated tool called the Large Class and Teaching and Learning Questionnaire (LCTAQ; $r=0.93$) was applied. The results of a study topic that was addressed and four hypotheses that were evaluated at a significance level of 0.05 using descriptive and inferential statistics revealed the detrimental impact of large class sizes on teaching and learning in Nigerian tertiary institutions. Additionally, lecturers' perceptions were unaffected by differences in gender, qualifications, institutions, or

years of experience.

The implications on students' academic performance and methods for adhering to the lecturer-to-student ratio requirement were discussed. It was suggested, among other things, that the Nigerian government hire more teachers, build additional tertiary institutions with comparable infrastructures, and admit students based on the amount of space and amenities that are available.

Olubunmi Kayode, AYANWOYE (Ph. D)

Department of Science Education,

Faculty of Education,

Federal University Oye-Ekiti, Oye-Ekiti, Nigeria.

olubunmi.ayanwoye@fuoye.edu.ng; ayanwoyekayode@yahoo.com

08067126715

Keywords: Class size, Large class, Lecturer, Tertiary instruction, Students' achievement.

Large classes in higher institutions are unavoidable due to the population boom and the reality of the Education for All (EFA) programme in the majority of developing countries worldwide. Nigeria, the largest country in Africa, may be setting the standard for big class sizes at its higher education institutions. Additionally, these environments have been posing significant difficulties and potential risks to the quality of education for Nigerian educators as well as students, as a result of the overuse of educational resources, inefficient teaching and learning, and the mass production of graduates with subpar qualifications (Alimi, Fagbohun, & Abubakar, 2021). According to Yelkperci et al. (2012), worldwide aspirations for universal education, rapid population expansion, and other factors have caused huge classes to rise in developing countries. According to Adeyemi and Aransi (2017), class size is a teaching tool that may be used to determine the typical number of students in a class. Class size is defined by Ayeni and Olowe (2016) as the number of students enrolled in a particular course or classroom, the number of students being taught by a single teacher in a course or classroom, the average number of students being taught by teachers in a school or educational system, or the number of students participating in learning experiences. They emphasised that class size is essentially an administrative choice over which teachers have little or no influence. According to Yusuf, Onifade, and Bello (2016), class size has a highly significant effect on secondary school students' attitude towards learning, with the strongest effects being on attention, punctuality, motivation, and participation—but not on the rate of participation or asking or answering questions.

Adesola (1991) asserts that the problem of the large class first emerged at Nigerian colleges following the mismanagement that caused the country's economy to collapse and the implementation of structural adjustment policies following the oil boom of the 1970s. Nigerian institutions had to drastically cut back on government funding, which caused a shortage of both people and material educational resources. This led Corrigan (2019) to observe that entry rates into the

third level of study are significantly rising in higher education. Although more students enrolling in tertiary education, as per Corrigan, is good for the country's economic, cultural, and social development, this development comes with its own challenges when it comes to ensuring high standards of learning and engagement between students and lecturers. This is because large class sizes in Nigerian tertiary institutions have been posing serious challenges to the participation and quality of learning between staff and students. The need for greater active participation and student-centred learning strategies is in jeopardy. Yelkperci et al. (2012) lamented that large class sizes are one of the issues in the educational sector that developing countries have been facing. Muhammad, Mohammed, and Fatihi (2021) agreed that large class sizes are thought to be one factor affecting teaching and learning in schools, especially in Nigerian tertiary institutions, as the average class size varies from one level of education to another and from one discipline to another. While the Nigerian University Commission recommends a class size of 30 students per lecturer in the faculty of education, it also states that anything above the recommended number is abnormal and that if the surplus is greater than 10, the class can be considered excessive. If a classroom is full, it is considered overcrowded. In Nigeria's postsecondary institutions, this type of overcrowding in the classroom has become an inescapable evil that teachers must deal with.

Despite numerous research demonstrating the negative effects of large classes, this issue is still up for discussion. Todd (2012) investigated the connection between class size and academic achievement. The results indicate that class size and grades had a substantial negative link, both for all students in all courses and for those who studied in classes with widely diverse sizes in separate courses. According to Obiakor and Oguejiofor (2020), there is a significant correlation between student attitudes and achievement and the effect that class size has on students' achievement. On the other hand, Mukhtar (2019) looked at how class size affected students' academic performance. The study discovered that having a large class size has no discernible effect on the academic performance of the students. According to O'Hanlon et al. (2019), larger lecture classes are linked to lower levels of student engagement with the material, fewer course commitments, poorer levels of student engagement with the material, and lower levels of student motivation and participation in class. In conclusion, it suggests that big class sizes seriously affect students' academic performance and should be handled if they cannot be completely eliminated.

Because of this, Bianca (2019) suggests using social media as a way to improve student experience and engagement with course material, and *to develop social networks in large classes*. Holmquist et al. (2002) recommended the lecture method to large classes with more than 100 students present and bemoaned the fact that, despite long-term predictions to the contrary, the lecture method is still the most popular in higher education because it is the most efficient way to instruct big classes of students. Large classes are given in Nigerian tertiary institutions, so this study looked at lecturers' perceptions of the effects of large class sizes on efficient teaching and learning in Nigerian tertiary institutions with the goal of supplying manageable explanations.

Literature Review

The study is based on the notion of continuous improvement, which holds that products, services, or processes can continually be improved through both incremental and ground-breaking advancements. Continuous improvement is a way

of thinking that encourages businesses to constantly seek out more effective ways to complete tasks. This quest for efficiency results in the evolution of the company's products, services, workflows, and other elements over time, making them more effective and optimal. By removing waste or inefficiencies from intangible processes like cooperation, the attitude enables better-end products to be produced more quickly.

The four steps of the theory's paradigm for quality assurance are as follows:

Plan, that is, recognise a chance and make a change plan;

Do: Which is the small-scale implementation of the modification;

Verify: Which suggests using data to analyse the effects of the modification and decide whether it had an impact, and

Act: This means that if the modification was effective, you should expand its use and regularly evaluate your outcomes. If the change was a failure, you should start the process over. According to this idea, lecturers should make a strategy to identify opportunities for change, execute those changes gradually on a small scale, evaluate the consequences of those changes to see if they had an impact, and so on.

Large Class

According to Yelkperci et al. (2012), huge or overcrowded classes are now frequent problems in most educational institutions in developing countries, and Nigeria is no exception. This has been posing several difficulties for lecturers at Nigerian higher schools. Although there have been a number of opposing views regarding the effects of large classes, Hoxby (2000) indicated that reductions in class size have little to no impact on student achievement in elementary school; Krueger (2003) came to the conclusion that there is no strong or consistent relationship between class size and student performance; Mueller (2011) discovered that a reduction in class size has no impact when a new or inexperienced teacher is present; According to Kerr (2011), there is a presumption that smaller classes offer better learning settings and emphasised that bigger classes have a detrimental impact on student retention. Having a small class size increases the likelihood of enrolling in college and finishing a degree, according to Dynarski, Hyman, and Schanzenbach (2013); these impacts were particularly strong for African American students and students who qualified for free or reduced meals; Beattie and Thiele (2016) found that first-generation students' likelihood of participating in class was significantly impacted by class size; Despite the efforts of both students and teachers, Chapman and Ludlow (2010) discovered that class size had a substantial negative connection with perceived student learning; McDonald (2013) highlighted that student-staff ratios in higher education have a substantial impact on teaching and learning; Cheng (2011) demonstrated that rising enrollment has detrimental and significant consequences on student satisfaction in school.

Monks and Schmidt (2011) discovered that both class size and student load have a negative impact on students' evaluations of courses and instructors; Phillips and Ahrenhoerster (2018) noted that class size seems to affect students' perceptions of the writing process, possibly as a result of the pedagogical changes instructors make when class size increases; while Class size has long been known to have an impact on students' performance in face-to-face settings,

according to Qiu et al. (2012) studies. Sapelli and Illanes (2016) also came to the same conclusion, concluding that higher education institutions must make a trade-off if they want to increase admission.

Lecturers' Perception of the Constituents of a Large Class in Tertiary Education

Studies have shown numerous sorts of deviations from this benchmark and that on the high side, in contrast to the National Universities Commission's (NUC) specified staff:student ratio of 1:30 for the faculty of education in Nigerian tertiary institutions (NUC, 2007). Yelkiperi et al. (2012) lamented that large class size has recently become a necessary evil for public universities in the nation and noted that the staffing shortage in public universities has forced management to turn to large class size, especially in general courses, where one lecturer is responsible for over 500 students in a single lecture session. Large classrooms are a problem that many higher education institutions throughout the world are dealing with, claims McDonald (2013). This is supported by Krueger's (2003) observation that it has been unable to get class sizes down to a manageable level. Arzt (2011) recommended class sizes between 12 and 21 as being appropriate and advised that undergraduate programmes classes can function reasonably well with enrollments between 15 and 22 to accommodate the increased enrolment rates in the sciences where the staff: student ratio is stipulated for 1:10.

According to Kokkelenberg et al. (2008), class size has a negative impact on students' academic ability. The researchers discovered that as class size grows, the average grade point drops abruptly up to class sizes of twenty and more gradually but monotonously as class sizes increase. Parks-Stamm et al. (2017) found that instructor participation levels and class size had a substantial impact on learning and suggested keeping scientific classes between 15 and 30 students. According to Ekanem (2016), Nigerian institutions have failed to adhere to the national policy on education's (FRN, 2013) requirements for class size. Large classes are common in most higher education programmes, particularly in Nigeria's cities, according to Isuku (2012). It was established by Ekpenyong (2018) and Graue et al. (2009) that fewer pupils gave teachers more time to interact with and build good relationships with parents. According to Maloney (2020), more students perceive that they receive more individualised attention and accomplish greater academic goals in classrooms with fewer than 30 students than they do in classes with more than 30 students. Additionally, a higher percentage of parents believe their children receive more individualised attention and achieve academically higher standards in classes with less than 30 kids. According to Muhammad et al. (2021), the majority of Sub-Saharan African and Asian nations have staff-to-student ratios that are greater than 1:40, with the Congo, Ethiopia, and Malawi having a ratio of about 1:70, South and East Asia's Afghanistan and Cambodia having a ratio of more than 1:55, and Nigeria recording large class sizes of 1:40, 1:50, and occasionally 1:100.

Challenges of Teaching Large Classes as Perceived by Lecturers

The challenges of teaching large classes in Nigerian higher institutions are varied, and the variety of instructional strategies implemented by lecturers to support both teaching and learning still face obstacles. Susilowati (2013) claims that one of these is the unfavourable classroom environment, which makes interactions between the teacher and students

inefficient. These issues are summed up in the study of Yelkperci et al. (2012), who attempted to list the difficulties lecturers and students encounter in large courses. The researchers highlighted the low engagement rates of the students; The inability to organise quizzes and class tests on a regular basis; the inability to mark students' scripts and provide feedback in a timely manner; the difficulty of identifying truant students at lectures; the difficulty of conducting a class test without incident; the difficulty of students hearing the lecturers; the problem with the appropriate use of teaching and learning materials; the inadequacy of the public address system and power fluctuations; the difficulty of marking students' scripts and providing feedback in a timely manner; the challenge of recognising absentee pupils during lectures, the challenge of holding a smooth class examination, the challenge of delivering sufficient assignments, the challenge of maintaining class management; insufficient writing and seating areas; the majority of students are unable to read from the board, among other issues and difficulties, lecturers and students in large classes encounter.

Lecturers' Perception of the Impact of Large Classes on Teaching Effectiveness

According to Farrell (2019), big class sizes provide difficulties that may lead to a restriction or rejection of teaching strategies that are frequently employed in smaller class settings. The researcher listed a number of obstacles to effective teaching, including balancing the alignment of assessments with module content and learning outcomes, ensuring fair engagement in groups that the teacher determines, handling student inquiries, time management, managing elements of choice, upgrading technology skills to enhance teaching, learning, and assessment, and managing elements of choice. While a range of factors are reportedly having an impact on students' involvement in their classes, Giblin (2019) outlined how class size, and particularly large classes, are regularly recognised as a determining factor. According to Vandenberg (2012), smaller class sizes improved student performance. The results of Yelkperci et al. (2012), who reported their findings, contradict these claims. They found that lecturers disagreed with the idea that large class sizes affect the quality of their instruction and that large classes make it difficult to assess students. On the other hand, students agreed that large classes do not give lecturers the chance to pay attention to weaker students. Large lecture classes, according to Singer-Freeman and Bastone (2016), make it challenging for students to form deep bonds with peers.

Lecturers' Coping Mechanisms for Overcoming Challenges of Teaching Large Classes

Large classrooms, which are now prevalent in Nigeria's higher institutions, have forced lecturers to devise and use a variety of teaching tactics and ways to deal with the problem. When addressing the issue of huge classes, Weimer (n.d.) suggested that one strategy is to approach the teaching and learning process as if the lecturer is educating a small town instead of a class. However, many teachers are tempted to return to the lecture approach when faced with this difficulty. According to Farrell (2019), the lecture method is the last resort when a class appears to be enormous and needs to be spoken at. According to Susilowati (2013), instructors should be creative, adapt to various teaching methods, and design cosy seating arrangements. Online courses have grown in popularity over time as a result of technological advancements and an increase in student enrollment, according to Arzt (2011). While Farrell (2019) found the Universal Design for Learning (UDL) architecture to be useful in large classes, Charalampos (2019) concluded that the benefits of using

technology like Plickers in large classes cannot be overstated.

O'Hanlon et al. (2019) recommended team-based learning (TBL) as one of these innovative teaching strategies for larger classes and advised instructors to adopt a transmissive approach in their instruction. They also suggested that teaching innovations that can stimulate active learning can be of great benefit to students who may find themselves in larger class sizes during their higher education experience. Additionally, the following actions were recommended to be implemented as Yelkperli et al. (2012) sought answers to the issue of large class size in order to reduce its effects on teaching and learning at the Winneba campus and perhaps other universities:

- In order to improve lecture delivery, it is necessary to provide an adequate public address system to improve lecture delivery;
- Build more lecture halls so that departments can divide large classes into smaller ones;
- Hire more lecturers to reduce the student-lecturer ratio;
- Place more emphasis on online lectures;
- Promote and strengthen distance learning;
- Assign group projects and students at random for participation;
- Give group work and assign students arbitrarily for positions.

According to Wingert and Molitor (n.d.), teaching large classes presents numerous instructional obstacles that could be mitigated by the use of interactive tactics such as interactive lectures, jigsaw puzzles, cooperative learning groups, group assessments, and constructive disputes, among others.

Statement of the Problem

Large classes are an unavoidable reality at Nigeria's postsecondary institutions as a result of population geometric growth and the reality of the free education programme. For Nigerian educators and students, the classroom environment has been providing practical difficulties and possible dangers to the quality of education. Despite the fact that the Nigerian University Commission advises a class size of 30 students per lecturer in the faculty of education, studies have indicated that it has reached a point where a lecturer is currently confronted by a mob of over 200 students. In Nigeria's postsecondary institutions, this type of overcrowding in the classroom has become an inescapable evil that teachers must deal with. Although there have been a number of opposing viewpoints regarding the impact of large classes, it is still necessary to create a synergy between the opposing viewpoints and the lecturers' perception of the implications of large class size in order to come up with more active engagement and student-centred learning approaches to handle the situation. In order to find workable alternatives, this study looked at lecturers' perceptions of the impacts of large class sizes on successful teaching and learning in Nigerian postsecondary institutions.

Research Purpose

This study aspired to understand how lecturers view the impact of large class sizes on efficient teaching and learning. The study specifically investigated the gender, qualification, institution, and year of experience discrepancies of this perception.

Research Question: What is lecturers' perception of the implications of large class sizes on effective teaching and learning in Nigerian tertiary institutions?

Hypotheses: The following hypotheses were postulated and tested at a 0.05 level of significance:

- **H₀1:** There is no significant gender difference in lecturers' perception of the implications of large class sizes on effective teaching and learning in Nigerian tertiary institutions.
- **H₀2:** There is no significant qualification difference in lecturers' perception of the implications of large class sizes on effective teaching and learning in Nigerian tertiary institutions.
- **H₀3:** There is no significant institutional difference in lecturers' perception of the implications of large class sizes on effective teaching and learning in Nigerian tertiary institutions.
- **H₀4:** There is no significant year of experience difference in lecturers' perception of the implications of large class sizes on effective teaching and learning in Nigerian tertiary institutions.

Significance of the Study

The university administration, policy-makers, researchers, instructors, students, and other stakeholders in Nigerian education would benefit greatly from the information that this study would provide. The results of this study would also contribute to the body of knowledge already available on higher education in and outside of Nigeria.

Scope and Delimitation of the Study

The survey was restricted to teachers in the faculties and colleges of education in state- and federal-owned institutions in Nigeria's southwestern geopolitical region.

Methodology

The study used a non-experimental, descriptive survey design. All lecturers at the faculty of education and college of education in southwestern Nigeria made up the study's population. The participating lecturers were chosen using a multistage sampling approach. Oyo, Osun, Lagos, and Ekiti states were chosen from among the six states in southwestern Nigeria using a simple random sample approach. All lecturers at faculties of education and colleges of education in the chosen states were chosen using the total inclusive method, and purposive sampling was then utilised based on the lecturers' desire to take part in the study. As a result, 2538 lecturers in all took part in the survey. Adapted from the work of Ayeni and Olowe (2016), the Large Class and Teaching and Learning Questionnaire (LCTLQ) contained

affirmative and negative statements about lecturers' perceptions of the effects of large class sizes on effective teaching and learning. A and B were its two portions. Section A contained personal data on the lecturers, including gender, highest degree earned, institution name, and total number of years of lecturing experience. Statement-based elements made up Section B. According to a four-point Likert scale, the assertions were scored as Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). For favourably phrased items, the scores are 4, 3, 2, and 1 for SA, A, D, and SD, whereas the opposite was true for negatively worded ones. The original standardised instrument, which served as the basis for the initial 30-item instrument, was submitted for assessment by measurement and evaluation specialists as well as educational management experts in terms of content, relevance, scope of coverage, language of presentation, clarity of expression, and general suitability. 25 items made it through the experts' inspection after some were amended, and some were eliminated based on their comments. After that, a pilot test of the 25-item instrument was conducted at a school outside the study area. The coefficient of reliability of the instrument was calculated using Cronbach Alpha's measure, and the instrument produced a reliability index of 0.93 after 8 items were removed from the corrected item-total correlation column, leaving 17 items. The questionnaire was given to the participants by the researcher and other qualified research assistants, and the same was retrieved after attending to them. The data were statistically analysed using descriptive statistics like mean and standard deviation to answer the research question and inferential statistics like t-test and Analysis of Variance (ANOVA) to test the hypotheses at 0.05 level of significance. This allowed for the making of meaningful inferences from the data.

Results

Table 1: Lecturers' Demographic Distribution

		Freq.	%
Lecturer's Gender	Male	1466	57.80
	Female	1072	42.20
	Total	2538	100.00
Lecturer's Highest Qualification	First Degree	178	7.00
	Masters Degree	1615	63.60
	Doctorate Degree	745	29.40
	Total	2538	100.00
Lecturer's Institution	College of Education	1060	41.80
	University	1478	58.20
	Total	2538	100.00
Lecturer's Year of Experience	1-10 Years	476	18.80
	11-20 Years	1658	65.30
	More than 20 Years	404	15.90
	Total	2538	100.00

Answering the Research Question

Research Question: What is lecturers' perception of the implications of large class sizes on effective teaching and learning in Nigerian tertiary institutions?

Table 2. Descriptive Statistics of Lecturers' Perception of the Implications of Large Class Size on Effective Teaching and Learning in Nigerian Tertiary Institutions

Large class size is always characterized by:	N	Mean	Std. Dev.	Remark
Poor classroom management	2538	3.50	0.62	Negative Implication
Ineffective students' control	2538	3.32	0.59	Negative Implication
Poor planning and assessment	2538	3.00	0.71	Negative Implication
Inability to cater for students' individual differences	2538	3.57	0.61	Negative Implication
Increase strain on the lecturer	2538	3.37	0.68	Negative Implication
Students show more disruptive behaviour	2538	3.23	0.64	Negative Implication
Make teachers less productive	2538	3.03	0.60	Negative Implication
Large classes frustrate the teachers	2538	2.93	0.66	Negative Implication
Students are less attentive in large class size	2538	2.85	0.63	Negative Implication
It affects teachers' health	2538	2.95	0.59	Negative Implication
Not giving out the best during teaching	2538	2.98	0.47	Negative Implication
Sometimes, the class become a noisy place while teaching	2538	3.03	0.55	Negative Implication
Large classes affect student assimilation	2538	3.20	0.60	Negative Implication
Interference from unserious students affects learning	2538	3.00	0.52	Negative Implication
No motivation to attend classes	2538	2.97	0.58	Negative Implication
Facilities to enhance learning are not adequate	2538	3.40	0.58	Negative Implication
Regular lateness for lectures	2538	2.91	0.64	Negative Implication
Grand	2538	3.13	0.60	Negative Implication

Note: $1.00 \leq \text{Mean} \leq 2.50$ implies Positive Implication.

$2.51 \leq \text{Mean} \leq 4.00$ implies Negative Implication.

Grossly unhealthy circumstances have been reported by lecturers in large classes. Large class sizes in Nigerian tertiary institutions are associated with poor classroom management, ineffective student control, poor planning and assessment, an inability to accommodate for individual student differences, increased strain on the lecturer, more disruptive student behaviour, and lower productivity on the part of the lecturers, according to responses from lecturers. In addition, lecturers have admitted that in large classes, they get frustrated while teaching, students are less attentive, lecturers' health is at high risk, lecturers are unable to give their all during instruction, and the class occasionally becomes noisy as students' assimilation is hampered by repeated disruptions from non-serious students. Due to inadequate learning facilities, lecturers are not motivated to attend classes as facilities to enhance learning are not adequate. Summarily, lecturers had negative implications of large class sizes on effective teaching and learning in Nigerian tertiary institutions.

Testing the Hypotheses

- **H₀1:** There is no significant gender difference in lecturers' perception of the implications of large class sizes on

effective teaching and learning in Nigerian tertiary institutions.

Table 3. Group Statistics of Lecturers' Perception Based on Gender

		N	Mean	Std. Dev.	Std. Err. Mean
Lecturers' Perception	Male	1466	53.24	3.10	0.08
	Female	1072	53.27	3.06	0.09

Table 4. T-test Analysis of Lecturers' Perception Based on Gender

		F	Sig.	t	df	Sig. (2-tailed)	Remark
Lecturers' Perception	Equal variances assumed			-0.24	2536	0.81	Accept
	Equal variances not assumed	0.34	0.56	-0.24	2325.57	0.81	

Tables 3 and 4's findings reveal that there was no gender difference in lecturers' perceptions of the impacts of large class sizes on effective teaching and learning in Nigerian tertiary institutions ($p = 0.56 > 0.05$; $t_{(1,2536)} = -0.24$). Additionally, there are no gender differences in the mean and standard deviation values for lecturers' assessments of the effects of large class sizes on efficient teaching and learning at Nigerian tertiary institutions. Therefore, it is believed that there is no discernible gender difference in lecturers' assessments of the impact of large class sizes on efficient instruction and learning at Nigerian tertiary institutions.

- **H₀₂:** There is no significant qualification difference in lecturers' perception of the implications of large class sizes on effective teaching and learning in Nigerian tertiary institutions.

Table 5. Group Statistics of Lecturers' Perception Based on Qualification

	N	Mean	Std. Dev.	Std. Error
First Degree	178	53.16	2.90	0.22
Masters Degree	1615	53.30	3.10	0.08
Doctorate Degree	745	53.17	3.08	0.11
Total	2538	53.25	3.08	0.06

Table 6. ANOVA of Lecturers' Perception Based on Qualification

	Sum of Squares	df	Mean Square	F	Sig.	Remark
Between Groups	10.07	2	5.03	0.53	0.59	Accept
Within Groups	24088.03	2535	9.50			
Total	24098.10	2537				

According to the findings in Tables 5 and 6, there was no significant difference between lecturers' perceptions of the extent to which large class sizes impact effective teaching and learning in Nigerian tertiary institutions ($p = 0.59 > 0.05$; $F_{(2,2537)} = 0.53$). Additionally, the mean and standard deviation values do not indicate any appreciable differences in lecturers' perceptions of the impact of large class sizes on efficient teaching and learning at Nigerian tertiary institutions. It is consequently believed that there is no discernible difference in lecturers' perceptions of the impact of large class sizes on efficient teaching and learning in Nigerian postsecondary institutions.

- **H₀₃**: There is no significant institutional difference in lecturers' perception of the implications of large class sizes on effective teaching and learning in Nigerian tertiary institutions.

Table 7. Group Statistics of Lecturers' Perception Based on Institution

		N	Mean	Std. Dev.	Std. Error Mean
Lecturers' Perception	College of Education	1060	53.22	3.11	0.10
	University	1478	53.28	3.06	0.08

Table 8. T-test Analysis of Lecturers' Perception Based on Institution

		F	Sig.	t	df	Sig. (2-tailed)	Remark
Lecturers' Perception	Equal variances assumed	3.62	0.06	-0.50	2536	0.62	Accept
	Equal variances not assumed			-0.50	2259.24	0.62	

According to the findings in Tables 7 and 8, there was no significant variation between institutions ($p = 0.06 > 0.05$) in lecturers' perceptions of the impact of large class sizes on efficient teaching and learning in Nigerian tertiary institutions ($t_{(1,2536)} = -0.50$). There are no discernible institutional differences in lecturers' perceptions of the impact of large class sizes on effective teaching and learning at Nigerian tertiary institutions, according to the mean and standard deviation values. Therefore, it is believed that there are no appreciable institutional differences in lecturers' perceptions of how big class sizes affect successful teaching and learning in Nigerian tertiary institutions.

- **H₀₄**: There is no significant year of experience difference in lecturers' perception of the implications of large class sizes on effective teaching and learning in Nigerian tertiary institutions.

Table 9. Group Statistics of Lecturers' Perception Based on Year of Experience

	N	Mean	Std. Dev.	Std. Error
1-10 Years	476	53.28	3.08	0.14
11-20 Years	1658	53.25	3.08	0.08
More than 20 Years	404	53.25	3.08	0.15
Total	2538	53.25	3.08	0.06

Table 10. ANOVA of Lecturers' Perception Based on Year of Experience

	Sum of Squares	df	Mean Square	F	Sig.	Remark
Between Groups	0.34	2	0.17			
Within Groups	24097.76	2535	9.506	0.02	0.98	Accept
Total	24098.10	2537				

Based on the results in Tables 9 and 10, there was no significant difference in lecturers' assessments of the impact of large class sizes on efficient teaching and learning at Nigerian tertiary institutions ($p = 0.98 > 0.05$). Additionally, there is no discernible difference in the mean and standard deviation values between lecturers' perceptions of the effects of large class sizes on effective teaching and learning at Nigerian tertiary institutions, regardless of the lecturers' years of experience. Therefore, it is believed that there is no discernible variation in lecturers' perceptions of the effects of large class sizes on efficient teaching and learning in Nigerian tertiary institutions according to their years of experience.

Discussion

Ineffective teaching and learning are negatively impacted by excessive class sizes in Nigerian tertiary institutions, according to this study. In addition, the study found no variations in this opinion of the negative impacts of large class sizes on effective teaching and learning in Nigerian tertiary institutions based on gender, qualification, institutional, or year of lecturing experience. This has demonstrated that regardless of their gender, qualification, institution, or year of teaching experience, all types of lecturers in Nigerian tertiary institutions face the same level of difficulty managing large classes.

This finding is consistent with those of Muhammad, Mohammed, and Fatihi (2021), who found a significant negative correlation between class size and grades; Beattie and Thiele (2016), who found that class size had a negative impact on

students' participation in class; Chapman and Ludlow (2010), who discovered a significant negative correlation between class size and perceived student learning; Cheng (2011), who found that increasing enrollment has a negative and significant correlation between class size and grades; and Chapman, Ludlow; Kokkelenberg et al. (2008) found that class size negatively affects students' achievements, Millea et al. (2018) found that retention and graduation rates were higher for students who were academically prepared and taught in smaller classes, Monks and Schmidt (2011) found that both class size and students' load negatively impact students' assessments of courses and instructors, and Kerr (2011) found that smaller classes provide better learning environments.

The results, however, are at odds with those of Mukhtar (2019), who found that large class sizes do not clearly affect students' achievement; Hoxby (2000), who said that class size reductions have little to no impact on student achievement; Krueger (2003), who came to the same conclusion; and Mueller (2011), who discovered that classroom reduction does not have an impact when it comes to student performance.

Conclusion

Unavoidably, larger lecture classes have been linked to a host of detrimental effects, including a decrease in the quantity and quality of student-teacher interaction, lower levels of student engagement with the subject matter, fewer students who are committed to their courses, and lower levels of student motivation and participation in class, all of which ultimately result in a poorer quality of education for both Nigerian teachers and students. To prevent the complete collapse of Nigerian education, this menace must be swiftly countered.

Recommendations

The following were recommended in order to protect Nigerian education at the ivory tower of knowledge from the approaching threat of big class size aftereffects:

- The Nigerian government should hire additional lecturers through its ministries of education.
- The Nigerian government should construct additional lecture halls in schools and establish more postsecondary institutions with corresponding financial and personnel resources.
- The number of students admitted to each institution should be proportionate to the space and resources that are available.
- During the accreditation process, the Nigerian government, through NUC and NCCE, should be stringent in enforcing the required student-to-teacher ratio.
- To increase the number of classrooms in schools, the government should work with non-governmental organisations, parent-teacher associations, philanthropists, and other philanthropic organisations.
- The government should enhance tertiary institution funding to a similar level.
- To ensure efficient teaching and learning, the management of each institution should make sufficient provisions for a sufficient number of lecture rooms, comfortable seating areas, conducive teaching and learning equipment, and other

amenities.

- For lecturers, periodic workshops, seminars, and symposiums on managing large classes should be organised.

Acknowledgements

I acknowledge the efforts of every individual who was either directly or indirectly connected with this study, most especially the participants and research assistants.

Funding

I declared that the research is self-funded by the researcher.

Brief Biography

Dr Ayanwoye is currently a Lecturer at Federal University Oye-Ekiti. He received his PhD degree in Mathematics Education from the University of Ibadan. He has over twenty-five (25) years of teaching experience. Subjects taught included subject methodology, research methods and statistics in education. He has participated and served as a facilitator in many workshops, presented various academic as well as research-based papers at several national and international conferences and published about twenty-seven (27) local and international publications in peer-reviewed chapters in books and journals. He is a registered member of many Associations and a peer reviewer of both local and international Journals.

References

- Adesola, A. O. (1991). The Nigerian university system: Meeting the challenges of growth in a depressed Economy. *Higher Education*, 21(1), 30-42.
- Alimi, O. Y., Fagbohun, A. C., & Abubakar, M. (2021). Is population an asset or a liability to Nigeria's economic growth? Evidence from FM-OLS and ARDL approach to cointegration. *Future Business Journal*, 7(20).
<https://doi.org/10.1186/s43093-021-00069-6>
- Aransi, W. O. (2017). Effect of class classification, class size, and gender on academic performance among Fatima high school students in Irewole local government area of Osun State, Nigeria. *European Journal of Education Studies*, 3(11), 756-771.
- Arzt, J. (2011). Online Courses and Optimal Class Size: A Complex Formula. Retrieved from <https://files.eric.ed.gov/fulltext/ED529663.pdf>
- Ayeni, O. G., & Olowe, M. O. (2016). The implication of large class size in the teaching and learning of business education in tertiary institution in Ekiti State. *Journal of Education and Practice*, 7(34), 65-69.

- Beattie, I. R., & Thiele, M. (2016). Connecting in Class? College Class Size and Inequality in Academic Social Capital. Retrieved March 11, 2019, from <https://doi.org/10.1353/jhe.2016.0017>
- Bianca, P. (2019). Enhancing the student experience in large classes: Facebook as a support tool for students in an enabling education. In A. M. Farrell, & A. Logan (Eds.), *Pedagogy for Higher Education Large Classes (PHELC)*. Proceedings of the first PHELC symposium, Universitat Politècnica de València. Dublin City University. DOI: 10.5281/zenodo.3565233. ISBN: 978-1-873769-19-5.
- Chapman, L., & Ludlow, L. (2010). Can downsizing college class sizes augment student outcomes? An investigation of the effects of class size on student learning. Retrieved from <https://muse.jhu.edu/article/399820/pdf>
- Charalampos, C. (2019). Enabling active learning in large classes through the use of Plickers. In A. M. Farrell, & A. Logan (Eds.), *Pedagogy for Higher Education Large Classes (PHELC)*. Proceedings of the first PHELC symposium, Universitat Politècnica de València. Dublin City University. DOI: 10.5281/zenodo.3565233. ISBN: 978-1-873769-19-5.
- Cheng, D. (2011). Effects of class size on alternative educational outcomes across disciplines. Retrieved from <https://www.sciencedirect.com/science/article/pii/S0272775711000641>
- Corrigan, T. (2019). Pedagogical assessments and possibilities of developing world cafe method and intergenerational learning into higher education learning. In A. M. Farrell, & A. Logan (Eds.), *Pedagogy for Higher Education Large Classes (PHELC)*. Proceedings of the first PHELC symposium, Universitat Politècnica de València. Dublin City University. DOI: 10.5281/zenodo.3565233. ISBN: 978-1-873769-19-5.
- Dynarski, S., Hyman, J., & Schanzenbach, D. W. (2013). Experimental evidence on the effect of childhood investments on postsecondary attainment and degree completion. *Journal of Policy Analysis and Management*, 32(4), 692-717.
- Ekanem, E. E. (2016). Average class size distribution effects on students' social well-being in university teacher education programmes in Cross River State, Nigeria. *International Journal of Innovative Education Research*, 4(3), 23-31.
- Ekpenyong, E. E. (2018). Class size and students' academic achievement in social studies in colleges of education in Cross River State, Nigeria. *International Journal of Contemporary Social Science Education (IJCSSE)*, 1(2), 10-17.
- Farrell, A. M. (2019). Building UDL into summative assessment in a large class: Challenges and possibilities. In A. M. Farrell, & A. Logan (Eds.), *Pedagogy for Higher Education Large Classes (PHELC)*. Proceedings of the first PHELC symposium, Universitat Politècnica de València. Dublin City University. DOI: 10.5281/zenodo.3565233. ISBN: 978-1-873769-19-5.
- Federal Republic of Nigeria (2013). National Policy on Education and 4-year strategic plan for the development of the education sector (6th Edition). Lagos: NERDC.
- Giblin, F. (2019). Promoting student engagement with a large class (400+): Implications for large sized lectures, small group workshops, and online teaching and learning. In A. M. Farrell, & A. Logan (Eds.), *Pedagogy for Higher Education Large Classes (PHELC)*. Proceedings of the first PHELC symposium, Universitat Politècnica de València. Dublin City University. DOI: 10.5281/zenodo.3565233. ISBN: 978-1-873769-19-5.
- Graue, E., Rauscher, E., & Sherfinski, M. (2009). The synergy of class size reduction and classroom quality. *Elementary School Journal*, 110(2), 178-201. doi:10.1086/605772
- Holmquist, M., Jansson, P., & Fäldt, A. (2002). Large-class teaching/learning. A C-Selt Project at Chalmers University

of Technology, Sweden, 2001/2002.

- Hoxby, C. M. (2000). The effects of class size on student achievement: New evidence from population variation. *The Quarterly Journal of Economics*, 1239-1285.
- Kerr, A. (2011). Teaching and learning in large classes at Ontario universities: An exploratory study. Toronto: Higher Education Quality Council of Ontario.
- Kokkelenberg, E. C., Dillon, M., & Christy, S. M. (2008). The Effects of Class Size on Student Grades at a Public University. *Economics of Education Review*, 27(2), 221-33.
- Krueger, A. B. (2003). Economic considerations and class size. *The Economic Journal*, 113, F34-F63.
- Maloney, K. (2020). The effects of class size on student achievement: Culminating projects in teacher development. 48. https://repository.stcloudstate.edu/ed_etds/48
- McDonald, G. (2013). Does size matter? The impact of student–staff ratios. *Higher Education Research & Development*, 35(6), 652-667.
- Millea, M., Wills, R., Elder, A., & Molina, D. (2018). What matters in college student success? Determinants of college retention and graduation rates. Retrieved from <https://www.ingentaconnect.com/content/prin/ed/2018/00000138/00000004/art00003>
- Monks, J., & Schmidt, R. M. (2011). The impact of class size on outcomes in higher education. *The BE Journal of Economic Analysis & Policy*, 11(1).
- Mueller, S. (2011). Teacher experience and the class size effect – experimental evidence. *IWQW Discussion Paper Series. No. 07/2011*.
- Muhammad, A. M., Mohammed, K., & Fatihi, A. A. (2021). Relationship between class size and students' academic performance in English language. *Journal of CUDIMAC (J-CUDIMAC)*, 9(1), 10-18. <http://cudimac.unn.edu.ng/volume-9/>
- Mukhtar, Z. (2019). The effects of class size on students' achievement in English language class: Teachers' perspective. *Unpublished Master of Education submitted to Institute of Business Management, Pakistan*
- National Universities Commission (NUC, 2007). Benchmark minimum academic standards for undergraduate programmes in Nigerian universities – Education. *Abuja, NUC*.
- O'Hanlon, D., Duffy, S., Fannon, L., Harding, N., & Ryan, S. (2019). Team Based Learning for enhanced engagement in larger class settings: Experiences of business school staff and students. In A. M. Farrell, & A. Logan (Eds.), *Pedagogy for Higher Education Large Classes (PHELC)*. Proceedings of the first PHELC symposium, Universitat Politècnica de València. Dublin City University. DOI: 10.5281/zenodo.3565233. ISBN: 978-1-873769-19-5.
- Obiakor, M. I., & Oguejiofor, C. N. (2020). Impact of classroom size on academic performance of secondary school students in Enugu North local government area of Enugu State, Nigeria. *African Journal of Educational Management, Teaching and Entrepreneurship Studies*, 1(1), 51-59.
- Parks-Stamm, E. J., Zafonte, M., & Palenque, S. M. (2017). The effects of instructor participation and class size on student participation in an online class discussion forum.
- Phillips, A., & Ahrenhoerster, G. (2018). Class size and first-year writing: Exploring the effects on pedagogy and student perception of the writing process.

- Qiu, M., Hewitt, J., & Brett, C. (2012). Online class size, note reading, note writing, and collaborative discourse.
- Sapelli, C., & Illanes, G. (2016). Class size and teacher effects in higher education.
- Singer-Freeman, K., & Bastone, L. (2016). Pedagogical Choices Make Large Classes Feel Small (NILOA Occasional Paper No. 27). Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment.
- Susilowati, N. (2013). Teacher's strategies in managing a large class in teaching English at the eleventh grade of SMA Muhammadiyah 1 Karanganyar in 2012/2013 academic year. Research paper Submitted as a Partial Fulfillment of the Requirements for Getting a Bachelor's Degree in Education in the English Department. School of Teacher Training and Education Muhammadiyah University of Surakarta.
- Todd, R. W. (2012). The effects of class size on English learning at a Thai university. *International Association of Research in Foreign Language Education and Applied Linguistics*.
- Vandenberg, K. C. (2012). Class size and academic achievement. *Electronic Theses and Dissertations*, 408. <https://digitalcommons.georgiasouthern.edu/etd/408>
- Weimer, M. (n.d). Book review: Large classes create special challenges. In R. Kelly (Ed), *Strategies for Teaching Large Classes. Online Classroom and The Teaching Professor*. Magna Publications, Inc. 2718 Dryden Drive. Madison, WI 53704 800.433.0499 or 608.246.3590. <http://www.magnapubs.com/teachingprofessor/>
- Wingert, D., & Molitor, T. (n. d). Actively Engaging Large Classes in the Sciences. In R. Kelly (Ed), *Strategies for Teaching Large Classes. Online Classroom and The Teaching Professor*. Magna Publications, Inc. 2718 Dryden Drive Madison, WI 53704 800.433.0499 or 608.246.3590. <http://www.magnapubs.com/teachingprofessor/>
- Yelkpieri, D., Namale, M., Esia-Donkoh, K., & Ofosu-Dwamena, E. (2012). Effects of Large Class Size on Effective Teaching and Learning at the Winneba Campus of the UEW (University of Education, Winneba), Ghana. *US-China Education Review*, A(3), 319-332.
- Yusuf, T. A., Onifade, C. A., & Bello, O. S. (2016). Impact of class size on learning, behavioural and general attitudes of students in secondary schools in Abeokuta, Ogun state Nigeria. *Journal of Research Initiatives*, 2(1), 2-16.