

Student-Teacher Ratio and Infrastructural Development in Nigerian Universities: Issues, Challenges and the Way Forward

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Abstract: *The article discussed the students – teacher ratio and infrastructural development in Nigerian universities: issues, challenges and the way forward. Secondary data were used to support the points raised in the article. The secondary data were sourced from print media and online publication by recognized institutions and individual authors. There are many issues with student – teacher ratio in Nigerian universities, such as class overcrowding, teacher stress, etc. And, there many challenges facing student – teacher ratio, which include inadequate funding, inadequate infrastructural facilities, lack of political will, inadequate qualified teaching staff, weak quality assurance agencies, among others. To solve these numerous challenges, this article recommends that the government should increase the funding of universities, the government should embark on massive construction of classrooms/lecture halls, our political leaders and all office holders should develop a strong political will, employment of more qualified teachers/lecturers, among others.*

Keywords: student – teacher ratio, infrastructural development, issues, challenges

INTRODUCTION

A university has been described as institution of higher education and research, which grants academic degrees (Bachelor, Masters and Doctoral) in various courses. The importance of university education in the areas of development and nation building cannot be underestimated., mostly in the areas of knowledge creation and dissemination. In corroborating this view, Olojuola (2019) asserted that the entire development apparatus of the socio-economic structure revolves around a good university education. In the same vein, Taskforce on Higher Education and Society (2000) as cited in Olojuola (2019) submitted that university

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 education allows people to enjoy an enhanced rest of mind, offering the wider society both cultural and political benefits. The goals of university education in Nigeria as enshrined in the National Policy on Education (2004) are as follows:

- i. Developing and inculcating proper value for the survival of the society.
- ii. Contributing to national development through high level relevant manpower training
- ii. Acquiring both physical and intellectual skills that will enable individuals to be self-relevant and useful members of the society
- iv. Developing the intellectual capacity of individuals to understand and appreciate their immediate and external environments
- v. Forging and cementing national unity
- vi. promoting and encouraging scholarship and community services
- vii. Promoting national and international understanding and interaction.

Considering the relevance of university education, Ajayi, Togunloju and Ajadi (2019) submitted that the funds allocated to higher education should not be merely considered as an expense, but long term investment of benefit to society as a whole. The student – teacher ratio in Nigerian universities is challenged by a number of factors, including inadequate funding and infrastructure, which can lead to a number of issues:

1. Overcrowding: High student – teacher ratio can lead to overcrowding which can cause teachers to focus on high – performing students
2. Classroom management challenges: It can be difficult to maintain discipline, ensure a conducive learning environment, and provide adequate supervision. This can lead to disruptions, decreased focus, and a less productive classroom.
3. Teacher stress: The greater issue with high student – teacher ratio is that teachers may feel stressed and the quality of teaching may be affected
4. Poorer classroom emotional climate: Students report a poorer classroom emotional climate when discipline problems are present.

To this end, many experts consider an 18:1 student – teacher ratio to be ideal. Classrooms with a lower ratio are often more task – focused, disciplined, and engaged. Meanwhile, the National Universities Commission (NUC) in Nigeria recommends different student – teacher ratios for different university faculties:

NUC Student – Teacher Ratio Recommendations in Nigerian Universities

S/N	FACULTIES	STUDENT – TEACHER RATIO
1.	Agriculture and Engineering Technology	9 : 1
2.	Human and Veterinary Medicine	6 : 1
3.	Science and Pharmacy	10 : 1
4.	Law, Social Science and Arts	20 : 1
5.	Applied Sciences	15 : 1
6.	Education	30 : 1
7.	Environmental Sciences	15 : 1

Source: National Universities Commission (2024)

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The NUC regularly assesses university faculties and courses to ensure they meet its standards. The student – teacher ratio is considered a factor that can affect the quality of graduates in Nigeria. Infrastructural development involves improvement of quality of the various components of infrastructure such as roads, power, ICT, water and sanitation. Higher institutions are expected to contribute to economic development processes. Availability and accessibility of infrastructural facilities are determinant factors in achieving this goal. Benneworth and Fitjar (2019) affirmed that higher institutions contribute to worker market up skilling. While Anderson (2016) opine that higher institutions could assist in creating collective innovation assets via highly skilled graduates if necessary facilities are there.

Gbadegesin and Aluko (2014) and Enefola (2016) found inadequate infrastructure in Nigeria's educational sector because of poor funding. The authors discovered that from 1999 to 2004, the budgetary allocations were far below the recommended 26% benchmark by UNESCO. According to Subair, Okotomi and Adebakin (2012), infrastructure is the operational inputs of every instructional programme and constitutes elements that are necessary for teaching and learning such include buildings, laboratories, machinery, furniture, and electrical fixtures. These must be functional in relation to other aspects of the community such as health centres, libraries, and good roads and must be large enough to allow for expansion as students' enrolment expands. In the same vein, Osagie (2003) opines that infrastructure represents the aesthetic picture of the school conveyed by the position structures in relation to one another. It also represents empirical relevance of the totality of the school environment for the realization of the school business (teaching/learning).

Student-teacher ratio or student-faculty ratio is the number of students who attend a school or university divided by the number of teachers in the institution. For example, student-teacher ratio of 30-1 indicates that there are 30 students for every one teacher. In other words, the student-teacher ratio is a simple measurement of the number of students enrolled in a school compared to how many full-time equivalent teachers are employed there. This is a very high-level method to evaluate educational systems to determine teacher workload and get a general idea of the level of individual attention available to students.

The definition of staff-student ratio in the dictionary is the ratio of teachers to pupils or students in a school, college or university. Bamiro (2021) asserted that the ratio of lecturers in Nigerian universities were over populated by students and they had few academic staff, hence the main reason why many lecturers do not know all their students.

Theoretical Framework

The study was based on system theory. A general system concept is a functional analysis of all the sub-units interacting and interrelating to function as a whole. It is a functional analyses of sub-systems which seeks to explain the character of the system as a whole. Synergy is one of the aspects of system concept, it is a collective effort that is more than a single effort. The expression of synergistic function connotes a derive demand function where its sub-units of the system is dependent on one another to function. A system is any ordered interrelated set of things and their attributes, linked by flow of energy and matter, as distinct from the surroundings environment outside the system. The element within a system may be arranged

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in a series or interwoven with one another. According to Yoon and Kuchinke, Magaji, Lawan and Yunusa (2021), a system comprised any number of subsystem.

Specifically, the systematic approach to school as a formal organization sees the organization as a purposeful system composed of interactive parts, rather than dealing separately, the approach gives the administration the opportunities to look at the various components of the organization in a large external environment working together towards pre-defined objectives therefore, system theory could be the best to describe the school as a formal organization via student-teacher relationship. Student-teacher ratio or student-faculty ratio is the number of students who attend a school or university divided by the number of teachers in the institution. For example, a student-teacher ratio of 10:1 indicates that there are 10 students for every one teacher.

Class factors are very important in the teaching learning activities, particularly when students' academic performance is being considered. Kezar (2006) described student-teacher ratio as a tool that can be used to measure performance of the education system. According to Oluyinka, Magaji, Lawan and Yunusa (2021), the teacher-student's ratio should be 1:30. In emphasizing the importance of class size to the learning/teaching process, the All Nigeria Conference of Principal of Secondary Schools (ANCOPSS) in Oluyinka, Magaji, Lawan and Yunusa (2021) recommended a maximum of forty students per class for effective management and better control.

In Nigeria, the National policy on education is a general statement containing principles, regulations and rules that govern many of the decisions on how to educate children, where to get them educated, where to get them employed, who to teach them, how to achieve the objectives and even the philosophy. The national policy on education is formulated and designed for regulating and controlling quality in the educational system in Nigeria. One of the issues that the national policy on education addresses and stated clearly is the students-teachers' ratio in the classroom. The policy states and prescribes that a lower student-teacher ratio is meant to achieve effective teaching and learning is the key to achieving quality education in the country because student will learn well and understand what the teacher has taught them.

For the universities, Alechene (2012) reported that the National Universities Commission Benchmark Minimum Academic Standards (BMAS) of 2007 stipulated the following teachers/students ratio; 1:10 in Medicine, Veterinary Medicine and Pharmacy; 1:15 in Agricultural and Environmental Sciences, Law and Arts. Ogunode and Alaolu (2020) asserted that even though these teaching staff/students' ratio are provided by the benchmark based on carrying capacity, some universities admit students above the carrying capacity, thereby increasing the teacher/student ratio. This has a negative effect on the quality of university education in Nigeria.

Challenges of the Student-Teacher Ratio and Infrastructural Development in Nigerian Universities

There are many challenges facing the implementation of teacher-students' ratio policy in Nigerian educational system and these challenges include: inadequate funding, inadequate infrastructural facilities, lack of political will, inadequate professional teaching staff, weak quality assurance agencies, increased student enrolment, poor education policy implementation and corruption.

Inadequate Funding: For the past decades after attainment of independence, Nigerian educational sector has been underfunded, the annual budgetary allocation into the sector has been below the 26% recommended by the UNESCO for education development. The low budgeting provision also affects other agencies under the ministry of education that were established for particular functions. Inadequate funding is responsible for many challenges in the educational sector in Nigeria. The inadequate infrastructural provision, shortage of qualified teaching staff, deficiency in research work, ineffective quality assurance and quality control can be linked to poor funding of the educational institution, preventing them from being proactive and efficient in their duties. The inadequate provision of the needed infrastructural facilities and employment of required academic staff that will enhance the achievement of the prescribed students-teacher ratio in the Nigeria universities.

Inadequate Infrastructural Facilities: Inadequate provision of infrastructural facilities in the schools is another challenge bedeviling the implementation of the teacher-student ratio policy in Nigerian universities. To be able to implement the policy of moderate student-teacher ratio, there is need for adequate infrastructural facilities in all the educational institutions. Studies have revealed that infrastructural resources required for production of effective education process is in short supply in Nigeria universities (Ogunode & Ashaolu, 2020). Lecture halls, laboratories, students' hostels, library spaces are inadequate. The available few are fast in a bad condition. It is also on a note that the necessary equipment for research, teaching and learning are lacking or the available ones are in a bad shape or mal-functioning to permit the universities the possibilities of embarking on the effective functions of academics. There is lack of scientific equipment for effective practical learning for the students in major science courses in the universities across the country, which require a lot of intensive training in terms of students' usage of high technology equipment.

Lack of Political Will: The problem of lack of political is another challenge facing the implementation of the teacher-students' ratio policy in Nigeria universities. Since independence, the successive governments do not see it necessary to support and implement the policy with strong passion. The government and its agencies poor implementation goes a long way in affecting the development of university education in the country.

Inadequate Teaching Staff: Most universities in Nigeria do not have required adequate professional academic staff that will be developed to ensure maximum compliance to the national policy of teacher-students' ratio. The problem of inadequate teachers affects the entire educational system in Nigeria (Gbemisola & Vusy, 2016). The needs assessment survey report presented by Gbemisola and Vusy to the Federal Government in 2012 identified manpower

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shortage as one of which compete favourably with universities in other parts of the world. According to the report, a combination of infrastructural and manpower challenges is responsible in Nigerian universities (Ogunode & Ashaolu, 2020).

Weak Quality Assurance Agencies: The weakness of the various agencies established by the government to ensure that both private and public schools comply with the educational policies in the country is another challenge confronting the implementation of teacher – students’ ratio in Nigerian universities. The ineffectiveness of these agencies and departments is responsible for the poor implementation of the policy in the country. According to Moja (2000), who opined that the development of human resources capacity for the delivery of an effective education is critical. There are human resource needs for administration, management, research and teaching as well as for support and technical staff. Lack of well – trained human resources is a problem in almost every area of education (Ogunode & Vusy, 2020). They therefore recommended that there is an urgent need for capacity building in the various Commissions charged with the responsibility for governing and managing different aspects of education.

Increased Student Enrolment: The enrolment rate of students in the Nigerian universities is among the numerous challenges facing the implementation of the teacher – students’ ratio policy in Nigerian universities. The geometric growth of population in Nigeria is on alarming rate, while the infrastructural facilities remain inadequate to go round the growing rate of the population. The learning environment is therefore becoming unconducive for learning, due to the physical condition of most schools and lack of teaching and learning materials.

Poor Education Policy Implementation: Poor planning of the educational sector is highly responsible for the inability to implement the teacher – students’ ratio policy in Nigerian universities. There is no gain – saying that ‘who fails to plan, plans to fail’. When the planning is faulty, there will be problem of implementation. The lack of effective planning in Nigeria educational sector has always been the bane of the advancement of education across the country. Planning of both human and material resources has evolved to guide the allocation and judicious utilization of educational resources in the school system. Olulobe in Ogunode and Vusy (2020) submitted that for any educational system to truly develop, effective planning is indispensable as education and planning are essential characteristics for effective education.

Corruption: Institutional corruption among public office holders in the education ministry and agencies is one of the major factors responsible for poor and inappropriate implementation of the teacher – students’ ratio policy in Nigerian educational institutions. Corruption in Nigeria education system is at its climax. According to Nwaokugha and Ezeugwu (2017), ministries and government agencies entrusted with overseeing the day – to – day affairs of the education industry in the form of procuring necessary equipment and teaching materials, construction of buildings, supply of teaching aid, etc. easily inflate vouchers and in most cases claim monies when nothing has been supplied or provided.

Conceptual Framework

Teacher – Students’ Ratio and Infrastructural Development in Nigeria

The quality of education of a nation depends on the quality of her teachers. Teachers are said to be the basic instrument for development for all nations. According to Yauta (2022), adequate teachers in schools develop the educational system to have a vibrant and critical role in the quality of education and how well teaching and learning take place.

Some studies show the influence of small class size on academic achievement of children and there are many other studies showing the positive impacts of class size on students. Nevertheless, Blatchford and Lai in Yauta (2022) concluded that the academic achievement could not solely be the result of the small class size. Meanwhile, Yauta (2022) concluded that in all the higher education institutions in Nigeria, teacher – student ratio is far above the benchmark stipulated by the National Universities Commission. He further concluded that the higher education institutions who have lower number of students per teacher tend to have a higher academic achievement and the higher education institutions who have higher number of students per teacher generally have low achievement.

According to Hamre, Piata, Mashburn and Docener in Sujan, Mohammed and Shahadat (2021), the student – teacher ratio is the number of students per teacher, or in other words, the total number of students in a school where a teacher instructs. For classroom with lower pupil – teacher ratio, teachers can devote more time with each pupil and track the success of each student they are responsible for, and can offer more individualized instruction that is more suitable for each student (OECD, 2012).

The role of school size factors (school enrolment, average class – size and student – teacher ratio) in the determination of recurrent unit cost in schools have raised and may continue to raise serious concern about school management plan and policy issues (Isuku, 2016). As government at all levels continue to bear the increasing financial burden education in the face of other pressing macroeconomic challenges, the need to ensure effective and efficient resource utilization in school service delivery becomes very germane. Isuku (2016) revealed that enrolment and student – teacher ratio factors had significant influence in the reduction of recurrent unit cost of public education. He therefore recommended that enrolment and teacher – student ratio could be increased to the optimum level as a cost reduction strategy in public schools.

According to Eragbai (2016), enrolment and student – teacher ratio factors could have significant influence in the reduction of recurrent cost of public education. As a tool for reducing cost reduction, increased enrolment and student – teacher in public schools could be an optimum level strategy. This could be achieved through merger of small – sized inefficient schools. While Ahmed (2022) concluded that in all the higher education institutions in Nigeria, teacher – student ratio is far above the benchmark stipulated by the National Universities Commission (NUC). The study also revealed that the higher education institutions who have lower number of students per teacher could have a higher academic achievement and the higher education institutions who have higher number of students per teacher could have low academic achievement.

Taft, Perkowski and Martin in Bello, Abdullahi, Ahmad and Muhammad (2021) found out that, there was a clear and strong relationship between class size, student – teacher ratio and students’ achievement. They also found that students learn more in small classes. They further revealed that the major benefit of reducing class size could occur where the number of students in the class was fewer than twenty (20). Again, they submitted that small classes were superior in terms of students’ reactions, teachers’ morale and quality of the instructional environment.

Implications of Student – Teacher Ratio

The poor funding of education in most third world countries does not enable the school system to have manageable class sizes, adequate student classroom space and appropriate class utilization rates. Previous research has shown that positive teacher – student relationships promote student academic achievement, such as better grades and test scores, but a new study at the University of Missouri found positive teacher – student relationships led to better teaching as well.

The student – teacher ratio has been found to be one of the strongest indicators of student success and engagement. The fewer students each teacher works with, the more closely they are able to adapt their teaching to the specific learning styles. Again, the smaller the student – teacher ratio, the better the quality of education of both high and low intelligent students. In a class with a higher teacher – student ratio, teachers cannot take care of the learning ability of each student due to vast numbers. In a class with fewer students, the teacher can personally attend to each student. The experience and expertise help teacher to gauge how much support a student need (Aina, 2013).

Other major implications of higher student – teacher ratio are:

i. Poor Academic Performance: Research suggests that small class size and lower student – teacher ratios benefit student achievement. Student – teacher ratios of less than 18:1 show greater academic achievement and vice – versa.

ii. Poor Teaching Method: Teachers with higher student – teacher ratio end up involving using poor method of teaching in classrooms, hence poor performance of the students. Instructional materials are not used properly in a large class size, because it is very hard for the teacher to show the students the instructional material (Obiakor & Oguejiofor, 2020).

iii. Poor Class Management: Over the years, perennial problem of class congestion, poverty level and low classroom utilization rates in Nigeria worsen the situation of education (Oluyinka, Magaji, Lawan & Yinusa, 2021). They further concluded that, education in the country is poorly funded, hence most of the public schools experience classroom congestion, low student – classroom space and low classroom utilization rates: hence these situations could likely affect students’ academic performance adversely.

iv. Poor Teacher Morale: According to Taft, Perkowski and Martin (2011), small classes were superior in terms of students, teachers’ morale and quality of the instructional environment.

CONCLUSION

To achieve the objectives of the educational goals in Nigeria as contained in the National Policy on Education, the government must ensure the full implementation of the policies in the country's National Policy on Education. The National policy on student – teachers' ratio is an example of educational policy that has not been fully implemented due to many challenges. Among the challenges are; inadequate funding, inadequate quality teachers, shortage of infrastructural facilities, weak quality assurance control, lack of political will, increased student enrolment, poor planning and corruption, to mention but a few.

To address these challenges, the following recommendations are suggested.

Recommendations

To in attain the desired goals of education of education in Nigeria, the government and every successive government should:

i. Provide Adequate Funding: Adequate funding of the educational sector is of paramount importance in the attainment teacher – student ratio policy. Consequently, the government should increase the funding of education (University education) in the country to give room for huge investment in infrastructural facilities (i.e. laboratories, laboratory equipment, library, lecture halls and staff offices).

ii. Adequate Infrastructural Facilities: One of the major factors responsible for high student – teacher ratio in the Nigerian educational institutions (universities) is inadequate classroom. To address this, the government should embark on massive construction of classrooms/lecture halls in our educational institutions across the country.

iii. Inculcation of Political Will: Our political leaders and all other office holders should develop a strong political will that will motivate them to give priority to our educational development in the country. With this, our leaders will see the educational sector as their project, thereby commit the budgetary resources to the provision of adequate facilities.

iv. Employment of More Professional Teaching Staff: To achieve the student – teachers' ratio policy in the Nigerian educational sector, the Nigerian government at all levels must employ more qualified and professional teachers and adequately deploy them to where required and necessary.

v. Reform the Quality Assurance Agencies: The government should put in place all necessary apparatuses to reform and strengthen all the quality assurance agencies in all the educational institutions across the country saddled with the responsibilities of ensuring quality control without fear or favour in order to achieve the students – teacher ratio policy in all the Nigerian educational institutions, especially universities.

vi. Population Control: The government should embark on vigorous population census in order to checkmate the outburst population explosion in the country in order to effectively reduce the unnecessary exhalative student enrolment in the educational institutions in the country.

vii. Adequate and Effective Education Planning: The government should ensure the entire educational system should be properly and adequately planned and more professional planners

Publication of the European Centre for Research Training and Development-UK should be employed in the ministry of education for efficient and effective educational policies to be put in place.

viii. Fight Institutional Corruption: It is a known fact that corruption is the bane of development. Corruption has eaten deep into the various ministries and agencies of both state and federal governments. Funds budgeted for planning sometimes end up in the personal pockets of the people at the helms of affairs. The government should use its various anti – corruption agencies in the country to monitor and track every financial expenditure in the educational institutions and all sectors of the country.

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