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A Paper on the Influence of Classroom Sizes on Biology Students' Educational Achievements

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Abstract:- (This study investigated the effect of class size on the academic performance of biology students in senior secondary school in Lagos state. The major purpose of the study was to find the impact of class size on the academic performance of biology students. The study was a causal comparative research design. The sample of the study comprise of two hundred and ninety-five (295) selected biology students and 4 biology teachers. The instruments of data collection used for this study are second term results of biology students from selected state-owned schools in Lagos state and open-ended questionnaires structured by the researchers. Face and content validity of the instrument was carried out by giving a copy of the instrument to 3 experts in the field of biology education. This study had five (5) research questions and three (3) research hypothesis. Descriptive statistics (the frequency count and percentages method, mean, standard deviations) was used to analyzed the research questions, while independent sample t-test was used to test the research hypothesis. From this study, it was discovered that large class size has a negative effect on biology students' academic performance, also findings from the study revealed that large class size has no influence on gender difference and that large class size has impact on the ability level of biology students. This study recommended that Lagos state government through her educational agencies should provide more classrooms, enough teaching and learning materials, educational facilities to ensure effective teaching and learning of biology and to improve the academic performance of biology students.)

Keywords:- *Biology, Learning Outcomes, Class size, Achievemnets, Science.*

I. INTRODUCTION

Global growth and freedom continue to be supported by high-quality education. To improve the quality of education at all levels of education, from elementary to tertiary, all hands must be on deck. Continuous and effective monitoring must also be well established to keep track of all factors that influence the level of education. Numerous factors have been blamed for the declining grade of education in Nigeria in an effort to provide effective education. The question of " class size" is one of these many factors.

The number of pupils in a certain subject or classroom, more especially the number of students in each of these two groups, is referred to as class size, according to the lexicon of educational reform.

The average number of students a teacher teaches in a school, district, or educational institution is another name for it. Class size was defined by Ajayi Christian (2017) as the total number of pupils enrolled in a certain class. Class size is defined by Imoke (2006) as the sensible coordination of educational infrastructures relevant to the number of students who are enrolled in order to achieve a high degree of productivity. According to Adeyemi (2008), class size refers to the typical number of pupils in each class at a certain school.

Class size is further defined as the number of pupils in a classroom who are assigned to receive instruction in regard to a certain subject or subjects from the aforementioned categories. The number of students a teacher is assigned to instruct in a classroom is known as the class size. It also refers to the number of students in a classroom receiving instruction from a teacher. The number of pupils in a particular classroom or course is referred to as the class size.

According to Okoro (2010), secondary school classes in Nigeria typically have 35 to 40 students. He argued that having a small student body is economically unsound because they don' t utilize classrooms, instructional supplies, or teachers. In contrast to Adeyemi (2008), who believed that the average class size is directly proportional to the cost of education, Nwadiani (2000) stated that class size is inversely proportional to the cost of education. In 2017, Ajayi (2017) argued in favor of Nwadiani' s viewpoint.

It is a method used to assess pupils' academic performance, according to Kedney (2009).

The degree to which a student has met either short- or long-term objectives can be characterized as academic performance. It is also known as the gradual, quantifiable grading of achievement as seen by the school grades attained. Exams or ongoing evaluation can be used to gauge academic performance. Academic performance relates to what pupils have learned or the abilities they have acquired, and it is typically evaluated through assessments like exams, performance reviews, and standardized tests (Santock, 2006).

According to the aforementioned definitions, academic performance can be defined as the learning experiences pupils have had over a certain amount of time, typically measured by examinations, quizzes, and other assignments.

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The assessment of students' academic progress reveals their strengths and weaknesses. It can also serve as a benchmark for assessing a student's proficiency in a particular subject area. Academic success also includes what pupils accomplish outside of the classroom. All disciplines are used to gauge students' academic achievement, but biology serves as the baseline for this study.

The study of life and living things is at the heart of the topic of biology. It can be categorized as a subject that examines the composition, operation, development, distribution, identification, and evolution of biological things. Biology is the study of living things, both large and small. It is also the study of living things, including their physical makeup, chemistry, molecular interactions, and evolutionary processes. One of the required subjects in secondary education is biology. The broad goals of biology education include raising awareness of all kinds of living things, promoting better harmony between people and the environment, and incorporating biological knowledge into a variety of management and technological practices, among other things.

There has been much debate on the effect of class size on students' academic achievement, with some highlighting it as the primary element accountable for students' academic performance. Studies have demonstrated that the physical environment, crowded classrooms, and instructional strategies all have an impact on students' academic achievement (Molnar, 2012). Gentry (2010) and Swift claim that School enrollment and class size are other variables that influence students' success. Despite the fact that studies have demonstrated that a number of factors affect the academic success of biology students, class size is a significant determinant with regard to student performance. It is crucial to examine how class size affects the academic performance of biology students in secondary schools in Lagos State because students' academic performance is heavily influenced by their surroundings. Doyle (2014) asserts that the needs, interests, and comfort of students are the main focuses of contemporary education. Therefore, good class size management enables students to learn effectively without interfering with one another (Garret, 2008) Ehrenberg, Brewer, and Gamoran claim Smaller class sizes will increase student academic performance for a variety of reasons, including improved teacher contact with parents and more intimate relationships between instructors and students, according to Ehrenberg, Brewer, Gamoran, and Wilms (2001). For instance, when there are fewer students present, they pay better attention. This is especially true for the attention-demanding subject of biology. In smaller classrooms, for instance in practical classes—and biology is a topic that calls for a great deal of practical work—teachers who frequently use group work may find that instruction is more effective. Additionally, there have been proposals that smaller class sizes or a reduction in the number of students will offer teachers more time.

There have also been arguments that smaller classes or a reduction in class size will allow teachers to spend more time with each student, which will boost student engagement and learning. Numerous studies have demonstrated that small class sizes promote effective instruction, creativity, a pleasant learning atmosphere during practical lessons, and regular classroom activities. Due to the opportunity for participation from all biology students in these activities, they will all result in biology students performing better academically. Even though we are aware of the significance of biology in our daily lives, it is distressing to see that biology students today perform less well academically. The rise in class size is one of the causes of the low academic performance of biology students. The unfortunate tendency in Lagos State's educational growth today is that there are more students than there are available seats in the classroom, or put another way, the classrooms that are available to students are smaller than the total number of pupils in the class (Ajayi, 2000). The academic achievement of biology students in secondary schools in Lagos State has consequently been significantly impacted by this. The size of the class inevitably increases as the world's population rises.

The size of the class inevitably increases as the world's population rises (Owoeye and Yara 2011). The number of students in each secondary school class is getting out of hand, just as it is in Lagos upstate right now. This prevents the biology teacher from giving the pupils the necessary attention, which is necessary because biology is one of the disciplines that calls for extensive student attention and demonstration. In Lagos State, public schools, notably teacher class control, have shrunk to the point where less motivated students are primarily seen at the rear of the class organizing a committee to participate in conversations unrelated to the subject being covered in class.

Accordingly, crammed classrooms or huge class sizes will cause biology students to lose interest in the subject and raise the chances of widespread failure in biology, which would affect pupils' academic achievement. Due to the poor student involvement in the biology class, it will also be difficult to teach and understand biology properly. Students studying biology will perform poorly academically at the conclusion of the term as a result of their limited involvement. Assessment and evaluation of students are crucial components of the teaching and learning process, according to Amadahe (2016). Because of this, large classes necessitate extensive marking of assessments, practical, classwork, and assignments as well as providing feedback to the students. In Nigeria's educational system, particularly in public secondary schools, this is a serious issue. When classrooms are large and as a result of their frustration with the workload, teachers start implementing conventional techniques of instruction and evaluation, including (quiz, exam). Due to these huge class sizes, teachers are unable to complete the marking of assignments, exercises, and exams on time, which causes a delay in the delivery of feedback to students.

II. STATEMENT OF THE PROBLEM

Free and equal access to education has led to a significant increase in the number of pupils enrolled per classroom since the advent of free education in the middle of the 19th century. The national policy on education (F.M.E. 2013) states that, considering the size of the classrooms, the teacher-to-student ratio should be 1:30 or no more than 1:40. However, the majority of state secondary school classrooms currently follow

a 1:100 to 1:150 ratios. It has been noted that secondary schools in Lagos State are overcrowded and densely populated. This results in a teacher being unable to give each student their individual attention and results in poor class management, which has affected students' academic performance, particularly in biology in WAEC and NECO. This requires immediate care. The average academic achievement for biology WAEC scores from 2015 to the year before, which was 2018, was as follows: 2015 saw an average performance of 41%; 2016 saw an average performance of 45%; 2017 saw an average performance of 44%; and 2018 saw an average performance of 47%. (head of national office WAEC Nigeria, Adenipekun Director of WAEC). One of the main causes of poor academic performance has been linked to an increase in class size. Observation showed a sharp rise in the number of kids being admitted to secondary schools in Lagos state. Contrary to the federal government's advised student teacher ratio, some schools have 100, 200, or more students in a class. There are now so many students in the classes.

As a result of the secondary schools in Lagos State rapidly expanding their class sizes, biology students' mental development has suffered, which has a significant or disastrous impact on their academic performance. Additionally, biology teachers find it challenging or impossible to manage high class sizes, which contributes to the detrimental impacts of large class sizes. Large class sizes discourage effective teaching and learning environments, which explains why this is the case. All of them could fall apart or hurt secondary school biology students' academic achievement. As a result, this study uses biology as a baseline to examine the effect of class size on students' academic performance.

III. PURPOSE OF THE STUDY

The goal of the study is to ascertain how biology students' academic performance is impacted by class size. The study specifically aimed:

- To examine the effect of class size on biology students' academic performance.
- To determine whether gender differences are impacted by large class sizes.
- To consider how the number of students in a class affects their level of biology proficiency.
- To describe the difficulties biology instructors and large classes of students face.
- To discover the mechanism that can be used to enhance biology academic performance.

IV. REVIEW OF RELATED LITERATURE

Biology The following sub categories were used to organize the review of related literature:

- Academic performance and class size concepts.
- Effects of class size on biology students' academic performance
- The impact of a sizable class size on gender disparity.
- How a big class size affects students' academic levels?
- Difficulties biology instructors and students in big classrooms confront
- Techniques for raising biology students' academic performance
- Summary

➢ *Biology Class Size Concepts And Academic Performance*

The number of students a teacher instructs in a certain amount of time is referred to as the class size. The phrase " class size" may also refer to the number of students taking part in educational activities that might not be held in a typical classroom. Additionally, it could be used to describe the overall number of students in a school' s various grades, levels, or classes (Opara & Waswa, 2013). Many studies on class size reduction have shown that it improves student performance, but fewer studies have challenged the link between class size and student learning, according to Hoffman (2009). Class size reduction programs are extensively used because parents, teachers, and everyone else agree that smaller classes are a desirable quality in a successful educational system. Class size and whether simply lowering the student-teacher ratio will increase students' learning and academic performance have been hotly debated in recent decades, especially on a big scale, like in the state public education system (Okoro,2005). Additionally, researchers are divided on whether or not smaller classes genuinely improve student results due to the abundance of data accessible (Averett & McLennan, 2011). In his town study, Oguntoye (2011) discovered that class size had a detrimental effect on students' academic performance in exams.

According to Earthman (2002), a comfortable classroom environment and smaller class sizes improve teachers' effectiveness and give students the chance to receive individualized instruction, ask more questions, participate fully in discussions, and have fewer behavioral issues than students in schools with larger classes. According to Fafunwa (2010), there is a gap in the quality of students in overcrowded classrooms with subpar and outdated equipment and disgruntled teachers. The student' s success in school may have been impacted by these combined inadequacies. Large class sizes, according to Adeyela (2000), are unsuitable for serious academic work. Egede (2005) also noted that a worrisome class size of 100 pupils or more in secondary schools results in the instructor being overworked and unable to exercise patience and a good attitude.

They are also hesitant to grant extra time to students who are intellectually disabled in order to develop and support them. In one of his key findings, Ojoawo (2008) demonstrated that class size was inversely correlated with academic achievement in schools.

According to Coleman (2002), " If classrooms are very large, it is crucial that, as much as is reasonably practicable, the learners should be constantly engaged and the tasks should work continuously without frequent teacher intervention." According to Broozer and Rouse (2001), factors that can enhance students' academic performance include money, class size, the caliber of the teachers, the duration of the school year, and technology. They argued that funding public schools is essential and that smaller class sizes result in higher results. Yara (2010) discovered that pupils in large courses performed

significantly poorly (by 23 percent) compared to those in smaller classes in his study on class size and academic achievement of students (64 percent). It is a method used to assess pupils' academic performance, according to Kedney (2009).

Academic performance is defined as what pupils have learned or the abilities they have acquired, and it is typically assessed using tools like standardized tests, performance evaluations, and exams, among others [Santock, 2006]. There is no widespread consensus on the most effective method of evaluation or measurement, though it is typically measured through exams or continuous assessment [Ziedner, 2008]. A school with academically successful pupils would receive more funding than a school with academically unsuccessful children (Von, Hell and Chamorro-Premuzie,2011)

According to Aremu (2003), a poor academic performance is one that is determined to be below an expected standard by the examiner/testee and some other key parties. Poor academic achievement in school subjects has been noted, particularly among secondary school pupils (Adesemowo, 2005). Poor academic performance, according to Aremu (2002), not only frustrates students and parents but also has serious societal repercussions due to a lack of labor in all sectors of the economy and politics. The evaluator' s or assessor' s ongoing cognitive ability allows them to interpret this expected or desired standard in a variety of ways depending on a number of different variables. The subjective yard might range from 40 to 100 for the excellence criteria.According to Adeyemo (2001), the school' s main objective is to help pupils achieve academic success. He claims that while the school may have other ancillary goals, achieving sound scholarship is always prioritized. Additionally, almost everyone involved in education places a high value on academic accomplishment; parents frequently expect their children to attain good academic results (Osiki, 2001). Students learn differently at the beginning of an activity depending on their prior knowledge, character traits, and social networks. The latter involves how much their parents and teachers support their desire to study, make it easier for them to access learning resources, and impart knowledge of techniques that speed up skill development. Parents' ambitions for their kids' academic success have a direct and indirect impact on those results (Bandura, Barbaranelli, Caprara, and Pastorelli, 2001).

The study of life and living things is at the heart of the topic of biology. It can be categorized as the study of the composition, operation, development, growth, distribution, identification, and evolution of biological things. It is a science course that focuses on the investigation of living organisms and their essential functions (Britannica, 2015). Biology is the study of living things, from microscopic to macroscopic, their relationships and interactions with other living things and the environment, as well as the metabolic processes they engage in. Additionally, it is a study of life. In the secondary education system in Lagos, biology is one of the required subjects. According to the National Policy on Education (2013), among the general objectives of biology education are to increase knowledge of all kinds of organisms, to promote improved benevolence between people and their natural surroundings, and to integrate biological skills into a variety of techniques and management. According to Tekkaya et al. (2001), biology is another subject with an overloaded curriculum because it comprises many subfields, including botany, zoology, ecology, evolution, molecular biology, and genetics. To succeed in biology, one needs to pay close attention and have the appropriate attitude and curiosity. Even though the course is required, pupils' academic achievement has been far from stellar. The reason for these bad biology grades is that learning biology can be challenging for a variety of reasons. One of these many aspects is the size of the classes.

- *The Effect Of Class Size On Biology Students' Academic Performance*

For educators, the correlation between biology students' class size and academic success has been a surprise. Overcrowding in classes, the physical environment, and teaching strategies have all been found to have an impact on students' academic performance (Molnar, et al., 2009). Class size is one of the key elements that influences biology students' academic success (Gentry, 2009; and Swift, 2009). Everyone has been quite concerned about the issue of biology students in Nigeria performing poorly academically. Examining the effects of class size and student population on the academic performance of biology students in secondary school is crucial since the academic achievement of students is greatly influenced by the educational environment. Smaller class sizes will increase student academic performance for a variety of reasons, including improved teacher contact with parents and more intimate relationships between instructors and students, according to Ehrenberg, Brewer, Gamoran, and Wilms (2001).

According to Dror (2001), the topic of class size is now frequently discussed in the educational literature as having an impact on students' attitudes and academic performance, as well as on administration, quality, and school budgets. According to him, choosing a class size is essentially an administrative choice over which teachers have little or no influence. The majority of researches begin with the premise that student progress would be significantly influenced by the size of the class. In fact, most studies have found that, in the best case scenario, class size in and of itself appears to be a significant effect. In his research on the impact of class size on the standard of output in secondary schools, Adeyemi (2008) found that classes with an average size of 35 students or less performed better than classes with more than 35 pupils in the secondary school certificate examination (SSCE). (20In his own study, Oguntoye (2011) discovered a negative correlation between class size and students' academic performance on tests. According to Earthman (2002), a comfortable classroom environment and smaller class sizes improve teachers' effectiveness and give students the chance to receive individualized attention, ask more questions, engage fully in discussions, and generally behave better than students in schools with larger class sizes. According to Fafunwa (2010), there is a gap in the quality of students in overcrowded classrooms with subpar and outdated equipment and disgruntled teachers. The student's success in school may have been impacted by these combined inadequacies. Adeyela (2000) agreed that having a big class size hinders doing serious

academic work. Egede (2005) similarly noted that an alarming class size of 100 pupils or more Oguntoye (2011) In his own study, discovered a negative correlation between class size and students' academic performance on tests. According to Earthman (2002), a comfortable classroom environment and smaller class sizes improve teachers' effectiveness and give students the chance to receive individualized attention, ask more questions, engage fully in discussions, and generally behave better than students in schools with larger class sizes. According to Fafunwa (2010), there is a gap in the quality of students in overcrowded classrooms with subpar and outdated equipment and disgruntled teachers. The student's success in school may have been impacted by these combined inadequacies. Adeyela (2000) agreed that having a big class size hinders doing serious academic work. Egede (2005) similarly noted that an alarming class size of 100 pupils or more in secondary schools, additional kids leave the teacher fatigued and unable to practice patience and a pleasant attitude. They are also hesitant to grant extra time to students who are intellectually disabled in order to develop and support them. In one of his key findings, Ojoawo (2008) demonstrated that class size was inversely correlated with academic achievement in schools. In a related development, Glass and Smith's (2009) thorough investigation into the correlation between class size and achievement gathered 80 studies, reviewed and dissected their findings using meta-analysis techniques. Based on his findings, he came to the conclusion that smaller classes and higher student accomplishment go hand in hand. In fact, it has been shown that when classrooms exceed this crucial size, learning outcomes are typically poor regardless of how the students are grouped. The quality and quantity of pupils' academic performance are seriously impacted by large class sizes. According to several academics, the majority of students who sit at the back engage in fights and gossip instead of participating or paying attention to what is going on (Yelkpieri et al.,2012). Olatunde (2010) discovered that pupils in large courses performed far worse than those in smaller classes. He said that as compared to pupils in smaller classes, the performance of students in larger classes was significantly worse (23 percent) (64 percent). Afolabi (2002) did not discover a connection between student learning outcomes and the size of the class, nevertheless.

Yara (2010) discovered that pupils in large courses performed significantly poorly (by 23 percent) compared to those in smaller classes in his study on class size and academic achievement of students (64 percent). The effectiveness of the learning environment was frequently closely related to students' achievement (Carron &Chau, 2006). It has been demonstrated that two characteristics of school climate—commitment to study and teachers' encouragement—have an impact on students' academic progress (Hoge, Asimeng, Boahene, 2000). Mothers' reports of their school-age children's alcohol usage and mental issues are predicted by the social emotional atmosphere of schools (Kasen, Johnson & Cohen, 2000). According to some researchers and academics, class size itself does not affect students' outcomes; rather, smaller classrooms may open up opportunity for other types of educational interventions. Normore and Ilon (2006) highlighted that reducing class sizes had a good effect in a number of areas, including giving teachers more time to cover the curriculum, increasing student-student and student-teacher engagement, and making schools safer with fewer behavioral issues.

- *Large Class Influence On Gender Difference*

Boys are more likely to prefer large groups. Boys seem to prefer interacting with each other in large groups, whether inside or outside of the classroom. (2002) McCoby Girls, on the other hand, are more likely to make and keep a close buddy or two. Boys will typically perform better than girls in large classes because of this. When boys are socially unwinding, they tend to gravitate toward large groups. Boys' social groupings tend to literally take up a lot of space, whether on the playground, in a school hallway, or on the street, and frequently involve substantial levels of roughhousing as well as structured and " semi-organized" competitive activities or sports (Maccoby, 2002). For their part, girls are more likely to seek out and keep one or two close friends with whom they may discuss more private thoughts and feelings. Even in the classroom, different social interaction styles exist. In general, boys are more inclined to speak during class discussions—sometimes even when not called upon or even if they are less knowledgeable about the subject than other students (Sadker, 2002). However, studies have shown that they occasionally—and probably unknowingly—respond to boys and girls in large classrooms in different ways. Paying attention is one significant difference. Boys' stronger assertiveness, which itself in their propensity to speak up more often than girls in talks or other situations, is one potential explanation for the discrepancy.

Another option is that some teachers contact with males more frequently to keep them focused on the subject at hand because they believe that boys are particularly prone to misbehavior in large classes (Erden & Wolfgang, 2004). Another idea is that because boys and girls interact in a larger range of ways and contexts than do females, there are more opportunities to interact with them.

- *Effects Of Large Class Sizes On Students' Ability Levels*

The technique of classifying pupils into distinct groups of high, medium, and lower achievers on ability grouping based on their academic performance is known as ability leveling (Bolaji, 2008). Slavin (2003) came to the conclusion that the best way for schools to handle student differences in ability is to divide them into smaller groups within a diverse class, which supported the usage of within-class ability grouping. He also took note of and entertained concerns about putting gifted children together, believing that doing so might undermine teachers' morale, lead to variations in the caliber of education, and affect pupils' enthusiasm to master particular subjects.

He also took note of and entertained concerns about putting gifted children together, believing that doing so might undermine teachers' morale, lead to variations in the caliber of education, and affect pupils' enthusiasm to master particular subjects. The strongest (high ability) students are not overly pushed, and the weakest (low ability) pupils will benefit by sharing with their high ability classmates in the class, according to the theory behind heterogeneous classes. The study will also use a heterogeneous within-class strategy, in

which gifted or high-achieving individuals are taught using the same methodology in the same class. He came to the same conclusion as Slavin (2003), who found that students with high, average, and low accomplishment levels reported the same level of success on an assignment for an ability-grouped class. Nwagbo (2002) has also looked for a more suitable and efficient class size to support teaching and learning in senior secondary schools. The majority of research concluded that if an adequate class size is determined and used for teaching and learning, it will be more engaging and effective, which will also improve teaching and learning.

The established or available sufficient explanation of how class size enhances students' comprehension of teaching/learning of students of various abilities. In light of this, the researcher is concerned and believes that a study of the consequences of class is necessary.

- *Problems Biology Instructors And Students In Large Classes Face*

The following are some of the difficulties biology teachers and students may encounter in large classes, according to the international journal on education and evaluation: Teachers may find it challenging to use a variety of teaching methodologies in their instruction; Students may find it challenging to concentrate in class;

Teachers may find it challenging to maintain control of the class; and there may not be enough teaching and learning resources. As a result, student evaluations, teaching standards, and learning standards may all be impacted. Basically, biology was previously one of the topics in Nigerian public senior secondary schools that demanded demonstrations and a lot of student focus. The assessment and evaluation of pupils is one of the most crucial steps in the teaching and learning process, according to Amadahe (2016). Large classrooms necessitate a significant amount of marking and student input. This is a significant obstacle, particularly in Nigeria' s public senior secondary institutions. When faced with huge class sizes, teachers become overwhelmed by the workload and turn to conventional teaching and evaluation techniques. Teachers are unable to complete marking assignments, exercises, and exams in a timely manner, which causes a delay in providing feedback to students. Additionally, the biology teacher' s job is difficult due to the growing amount of marking to be done, managing large classes for efficient instruction, and the variety of students' requirements, both academic and non-academic.

- *Techniques For Raising Biology Students' Academic Performance*

Over the past 30 years, peer tutoring has been utilized to improve academic performance and, occasionally, social/behavioral performance in both tutors and tutees. Different styles of peer tutoring have been used, including class-wide peer tutoring, cross-age and cross-grade peer tutoring, and reciprocal peer tutoring. Peer-mediated reading and math therapies for secondary problematic learners were found to be a moderately to highly successful intervention for struggling learners at the secondary level, according to a 2015 research review by Wexler, Reed, Pyle, Mitchell, and Barton. Peer tutoring's effectiveness is probably due to the inclusion of instructional elements such frequent opportunities for response, increased time spent on task, and regular and prompt feedback (Bowman-Perrott et al., 2013). Students with a fixed mindset and low self-esteem as learners can be specifically chosen and trained to serve as tutors, working with either younger students who lack the necessary skills or with peers their own age. Tutors will verbally praise tutees who are on task and making progress toward successfully completing assignments. In other words, students do not necessarily need to coach academic information; they might be taught to tutor on-task behaviors instead.

One type of metacognitive activity that might improve social and academic performance is self-evaluation training, often known as self-management or self-monitoring (Ardoin & Martens, 2004). Teachers can help students monitor certain academic or social behaviours that hinder academic achievement by giving them feedback on the frequency, precision, appropriateness, and completion of assignments given to them, as well as how the activities were graded by the teacher. Amato-Zech, Hoff, and Doepke (2006) used a self-monitoring approach that included cueing and reinforcers to successfully enhance student on-task time by more than 50%. Self-monitoring interventions have been widely found to be effective in boosting pro-academic and pro-social behaviour.

Verbal self-instruction, a type of " self-talk," is another strategy teachers employ to teach their pupils how to manage their time on task and/or reduce their own self-defeating beliefs about academic performance (Graybill, Jamison, & Swerdlik; Kunzendorf, McGlone, & Hulihan, 2004). According to Margolis and McCabe (2006), a teacher needs to utilize verbal persuasion to persuade students that they are capable and can succeed if they follow a specific method in order to boost their sense of self-efficacy. Decide " ... what to say to boost struggling learners' views in their academic talents and how to increase their willingness to engage in academic assignments," to put it another way (p. 218). Key phrases and/or questions that can be trained through active practice can be given by teachers to their students.

V. SUMMARY

Class size is the number of students a teacher must instruct, according to the review of related material. It is sometimes referred to as the number of pupils engaged in educational activities.

Academic performance is the sum of a student' s learning experiences, and it is typically evaluated through tests, quizzes, examinations, and other similar assessments.

Biology can be summed up as a science discipline that examines living organisms and their essential functions. It takes a lot of attention, the appropriate attitude, and interest to succeed in biology because the course load is overloaded.

The literature also shows that big class sizes have an effect on students' academic performance in biology is affected by a variety of factors, including an uncomfortable learning environment, poorer teaching, a decline in concentration, biology teachers who are overworked and

therefore unable to exercise patience and extra time to develop and assist the intellectually ill students, and a decline in biology students' academic performance. According to the literature evaluation, no new research has been done on the effects of class size on gender differences, class sizes, student ability levels, or mechanisms that can be employed to boost biology students' academic performance.

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