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Impact of group discussion on student's performance in biology (A case study of Heyik secondary school in Kaduna south local government area of Kaduna Nigeria)

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Abstract - This study assessed the impact of group discussions on students' academic performance in biology at Heyik Secondary School, Kaduna. The main objective was to explore how group discussions influenced students' understanding of biology, identify factors affecting their effectiveness, and address challenges like time management. Grounded in Behaviourism, Constructivism, Connectivism, and Experiential Learning Theories, the study used a survey design with 150 randomly selected senior secondary students. Data were collected via questionnaires and analyzed using SPSS, with descriptive statistics and correlation analysis to examine the relationships between group discussions, communication, and student performance. The findings showed a positive and significant correlation between communication within group discussions and improved biology performance. Both learning and development were also positively correlated with better academic outcomes, suggesting that group discussions enhance comprehension and retention. However, time management emerged as a key challenge, with scheduling conflicts and inefficient use of time limiting the benefits. The study recommends that educators focus on enhancing communication strategies, incorporating modern tools, and promoting continuous learning through curriculum and extracurricular activities. Continuous monitoring and evaluation, with regular assessments, will help refine communication and time management strategies based on student feedback and performances.

Keywords: group discussion; student performance; communication; learning and development; time management

1. Introduction

Biology is an innate science that deals with the investigation of living life forms (plants and creatures). According to Molla and Muche (2018), it investigates the processes by which living things originated and how they interact with one another and their surroundings.

Biology, the science of life, is taught in all Senior Secondary Schools in Nigeria and has long been a core (required) subject for students who are interested in science or the arts. In view of its significance, more understudies are selected for life science in the senior optional school testament assessment (SSCE) than for physical science and other science (WAEC, 2018). Bunch conversation (group discussion) is a review propensity wherein the understudies coordinates or are made to sort out understanding pals (partners) which permits them to practice or code the learning materials for more viable stockpiling in the memory (Eisner & Rohde, 2001; Hebb, 2006, in Cooper, 2005). There are no talks, no pedantic talks, no straightforward spewing forth of others' decisions. All things being equal, thoughts are proposed, countered, and guarded, until through conversation and basic argumentation, the class perceives the significance of a given text and, more significant, its veracity or mistake. The conversation leads to the discovery of the truth.

Group discussions in science classrooms enhance student engagement and foster a deeper understanding of key concepts. By participating in group work, students are motivated to explore topics more thoroughly, challenge their peers, and gain new perspectives. This collaborative environment not only encourages critical thinking but also aids in knowledge retention and comprehension of complex scientific ideas. Group discussions also help students refine their communication skills, as they must articulate and justify their thoughts, which is beneficial both academically and in everyday life. Additionally, these discussions offer valuable feedback to teachers, allowing them to assess student understanding and address gaps in knowledge. Science teachers often emphasize group work throughout the year because it promotes active learning, increases focus, and improves academic performance, particularly during exam preparation. Through group discussions, students are more likely to retain and recall information, making this method an effective tool for enhancing scientific understanding.

The showing techniques embraced by educators at the senior auxiliary school level in Nigeria have been distinguished as one of the central point adding to the lack cluster showing of understudies in science (Ihejiamaizu & Ochui, 2016; Olarewaju, 2017; Enohuean, 2018; Musa, 2018). By simple perceptions, the customary showing technique which is typically utilized by science instructors gives an oral show of realities or standards to students and the class for the most part being liable for note-taking. Through the talk strategy the benefit of introducing a lot of data in a brief time frame. Be that as it may, it is instructor focused. Understudies advance by listening not doing science, understudies are supposed to pay attention to addresses and gain from them. The talk technique frequently supports repetition realizing, where understudies rely upon retention without having a total comprehension of the subject. The tireless utilization of the talk technique makes understudies detached as opposed to dynamic students and doesn't advance canny learning and a decent mentality in science. There are many instructing procedures that could be utilized to train science to empower the dynamic investment of understudies among which incorporate; conversation strategy.

The gathering conversation technique requests that understudies come to class completely ready. Convincing them to think out their contentions ahead of time and to address their companions' inquiries and counter contentions, it hones their powers of reason, examination, and enunciation. As a result, it equips them with the fundamental abilities necessary for success in any field or occupation. This gathering conversation as a review strategy empowers the understudy to introduce the thoughts advanced consecutively. It favours effective review or recovery particularly throughout quite a while. Learning is the process of acquiring dispositional and behavioural potential, which indicates the learner's capabilities. However execution is definitely not an outright proportion of learning, yet one of the variables which impact execution (Seading, 1996, see Kassin & Gudjonsson, 2004).). Bunch conversation makes road for aggregate critical thinking inside the gathering. Throughout the long term, educators, guides, and even guardians utilized encouraging understudies to participate in bunch concentrate as a method for working on their scholarly execution.

Teaching methodologies significantly impact student learning outcomes, with numerous studies emphasizing diverse approaches across various contexts. Abdulhamid (2016) explored how instructional methods affect knowledge retention in Agricultural Science, while Adeyemi (2018) examined discussion and questioning strategies in middle school social studies. Alafiatayo et al. (2018) linked teacher competence to students' academic performance in biology.

In the realm of collaborative learning, Aline et al. (2018) highlighted its positive impact on chemistry performance, aligning with Akpan et al. (2013), who found small group teaching methods improved biology outcomes. Bierman et al. (2013) supported blended methods in geology education, while Bonwell and Eison (1991) advocated for active learning to boost classroom engagement. Dewey (2015) championed experiential learning, and Castek et al. (2012) emphasized the role of peer collaboration in online settings.

Technological advancements also shape education, as seen in studies by Omar et al. (2012), who analysed online discussions on Facebook for enhancing communication skills, and Lee et al. (2011), who highlighted challenges in eLearning. Piaget (1957) laid the groundwork for understanding cognitive development, which is pivotal in educational psychology.

Additionally, cooperative learning strategies have shown to improve academic achievement and laboratory proficiency (Molla & Muche, 2018), while Springer et al. (1999) confirmed the efficacy of small-group learning, particularly in STEM education. Finally, traditional and modern methods, as discussed by Schwerdt and Wuppermann (2011), suggest that blending these approaches may optimize learning outcomes. These studies collectively underline the importance of context-specific and student-centered teaching methods to improve student performance and retention.

The determined unfortunate performance of secondary school students in both internally and major externally conducted certificate examinations organized by both the West Africa Examination Council (WAEC) and National Examination Council (NECO), leaves one in doubt about the efficiency of the teaching methods used by the Biology tutors for teaching the subjects. Certain factors have been attributed to this problem. Factors like lack of science equipment, inadequate qualified Biology teachers, overcrowded classes, poor instructional and infrastructural facilities and the use of in-appropriate teaching methods hired by the Biology teachers have been identified.

Although some science educators advocate the use of more innovative, result oriented, and student-centred strategies like cooperative learning, concept mapping, inquiry, Small group teaching, Peer tutoring and programmed instruction, it has been observed that the prevailing teaching methods still being used in secondary school Biology teaching is the Lecture Method. This method makes these science students passive and bored in the process of instruction.

Science is a functional subject that expects to be shown in a way that the understudies will be effectively participated in the educating and growing experiences. Notwithstanding the significance put on science, understudies' presentation in the subject at both terminal school assessment and outside (WASSCE and NECO) assessments has been over and over poor or less than ideal (Alafiatayo et al, 2018; Awodun et al, 2019; Purve et al, 2018). When looking at the records of the West African Examination Council (WAEC) results over time, it becomes more apparent that biology students perform poorly. Despite the fact that a large number of students enrol annually in the Senior School Certificate Examination, biology students consistently perform poorly.

The reliable poor or fluctuating exhibitions have turned into a main issue to science guardians, partners and scientists in science training. The West Africa Assessment Gathering (WAEC, 2018) recorded among others; the showing methodologies embraced by science educators as the variable for the low exhibitions in science. The lecture method of teaching biology concepts may have the advantage of covering the extensive syllabus in a short amount of time by presenting a lot of information. In any case, the talk technique then again, can hamper with the growing experiences of the understudies, since learning is a functioning cycle not simply standing by listening to the educator (Pool et al, 2016).

Despite the recognized importance of collaborative learning methods in educational settings, there exists a gap in understanding the specific impact of group discussions on students' performance in biology. While group discussions are widely advocated for fostering critical thinking and most times knowledge retention, there is a need to investigate the extent to which structured group discussions positively or negatively influence students' academic achievements, comprehension of biological concepts, and overall performance in biology. This research aims to address this gap by exploring the nuanced relationship between group discussion dynamics and students' outcomes in biology classes, providing insights that can inform educators, policymakers, and curriculum developers in enhancing the efficacy of collaborative learning strategies in the field of biology education.

1.1 Research Questions

(i) What is the impact of group-discussion via communication method on students'-performance in biology at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna?

(ii) What are some of learning factors that influence group discussion method and how it affects students' performance in biology at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna?

(iii) What are some of the possible challenges faced (with regard to time management) by students who engages in group discussion at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna?

(iv) What are the possible solution to the identified challenges face by students who engage in group discussion?

1.2 Statement of Hypotheses

To aid the conclusion of this study, the following research hypotheses were formulated by the researcher to guide the study:

H10: Group discussions through communication do not significantly impact students' performance in biology at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna.

H11: Group discussions through communication have a significant impact on students' performance in biology at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna.

H20: Learning as a factor has no significant influence on students' performance at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna.

H21: Learning as a factor positively influences students' performance at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna.

H30: Time management does not significantly influence students who engage in group discussions at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna.

H31: Time management is a major challenge and significantly influences students who engage in group discussions at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna.

Learning is commonly defined as acquiring knowledge, skills, or understanding through experience or study. It involves making connections between ideas and adapting to new situations. Thorndike (1928) described learning as a lasting change in behavior from experience, emphasizing that learning often results from trial and error.

Group discussions are collaborative exchanges of ideas used in recruitment and education to assess communication, teamwork, and problem-solving skills. Key aspects include: (a) Communication: Clear speaking and attentive listening. (b) Collaboration: Sharing insights enriches the discussion. (c) Structured Interaction: A focused agenda ensures relevance. (d) Information Exchange: Sharing ideas promotes learning and innovation. (e) Active Participation: Engagement from all members is crucial.
Facilitation: Moderators guide discussions and manage conflicts. (f) Critical Thinking: Evaluating ideas for deeper understanding. (g) Decision Making: Discussions lead to collective decisions. (h) Conflict (i) (j) (k) (l) Resolution: Addressing differences to find common ground. (m) Learning and Development: Exposure to diverse views enhances skills. (n) Time Management: Effective pacing ensures all topics are covered.

These elements make group discussions a powerful tool for learning, problem-solving, and decision-making. Alexander et al. (2021) investigated the effects of the discussion method on science performance and attitude among senior secondary students in Zonkwa, Kaduna State. Using a quasi-experimental design, 220 students were sampled from a population of 1,169. Tools included the Biology Performance Test (BPT) and Students' Attitude Questionnaire (SATQ), with reliability coefficients of 0.72 and 0.74. Results showed the discussion method significantly improved academic performance compared to the lecture method, attributed to its focus on active learning and participation. These findings align with Ugwu et al. (2020) and Iwuanyanwu (2017), emphasizing the discussion method's role in fostering critical thinking, self-expression, and tolerance. It was recommended to use this method to address gender disparities in science education.

Omovie et al. (2023) compared discussion and inquiry methods on students' science performance using a pre-test, post-test design with 380 students. The discussion method outperformed the inquiry method in maintaining focus and academic performance. However, gender differences emerged, with male students performing better under inquiry-based instruction. This supports Adeyemi (2018) but contrasts with findings from Okunade (2021) and Rahman et al. (2016), who reported no gender disparity. Recommendations include training teachers in discussion and inquiry-based strategies.

Juweto (2018) examined small group teaching and peer tutoring methods among 238 students in Delta State. The study revealed higher performance and retention in students taught via small group teaching compared to peer tutoring or lecture methods. Findings align with Nnorom (2015) and Igbanugo (2013), supporting cooperative learning's effectiveness. However, the lower performance in peer tutoring contradicts Azubuike and Azubuike (2014) and Hovarth et al. (2011). Recommendations emphasize activity-based and cooperative teaching strategies to enhance learning outcomes. The concentrate anyway concurs with the discoveries of Dill and Boykins (2000) who explored on the impact of common learning peer mentoring and individual learning on the text review of African American fifth grader and finished up from their outcomes that collective learning understudies acquired fundamentally more on review of or maintenance on text than peer coaching and individual learning members. The conceivable clarification for this pattern had been recently revealed by Solomon and Crowe (2001) who analysed a companion mentoring model according to the point of view of the understudy coach and detailed that most understudies battled with fundamental help abilities and experienced issues in isolating the job of understudy from that of guides.

Adepoju and Oluchukwu (2011) examined the academic performance of secondary school students in English and Science at the Senior School Certificate Examinations (SSCE) in Oyo State, Nigeria, from 2005 to 2007. The study found that urban schools performed significantly better than rural schools in both subjects, with urban schools achieving higher mean scores and lower failure rates. The research highlighted that the location of schools (urban vs. rural) influenced student performance, supporting previous studies by Adepoju (2002) and Owoeye and Yara (2011).

The benefits of group-based learning have been widely suggested, including improved student performance, attitudes, and engagement (Kalaian & Kasim, 2014). Research by Larson (1997) and Nerve (1985) suggests that structured discussions enhance critical thinking and student interaction. Studies also

show that small group learning improves student outcomes by fostering collaboration and deeper understanding (Veenman & Spaans, 2005). Additionally, research by Whicker, Edwards, and Jones (2003) found that students in small group settings generally preferred the approach and performed better than those studying independently. Furthermore, Herr and Anderson (2005) found that students engaged in group discussions scored higher on tests and reported greater satisfaction with their education.

Effective teaching methods, such as group discussions, promote student engagement, critical thinking, and collaboration, contributing to better learning outcomes (Chen et al., 2008; Slavin, 1990). These methods encourage students to take responsibility for their learning, leading to improved academic performance.

This section explores key learning theories relevant to the study: Behaviourism, Constructivism, Connectivism, and Experiential Learning. Behaviourism suggests that behaviour is shaped by environmental interactions, with external factors influencing actions. Key figures like Thorndike (1913) and Skinner (1938) emphasized observable behaviours and reinforcement to encourage desired actions. This theory aligns with methods such as "drill-and-practice" and systematic reinforcement.

Constructivism, proposed by Piaget (1932), Bruner (1960), and Dewey (2009), argues that learners actively build knowledge based on prior experiences, viewing learning as a personal process. Cognitive constructivism focuses on intellectual development, while social constructivism emphasizes peer collaboration in knowledge-building. In the 1970s and 1980s, this theory evolved to emphasize student engagement, collaboration, and critical thinking. Teachers become cognitive guides, promoting intellectual and social growth. In the Formal Functional Stage, understudies utilize complex abilities to lead conversations with their companions and work off each other (de Lemos et al., 1985). This assists understudies with contemplating thoughts and subjects according to an alternate point of view and helps with supporting their interactive abilities.

Educators can apply constructivism by acknowledging that each student brings unique experiences to the classroom. Teachers guide students in creating their learning processes based on these backgrounds, helping them integrate personal experiences into their education. Connectivism, introduced by Siemens and Downes in 2005, emphasizes learning through connections—whether with people, roles, or interests. It highlights the importance of technology in learning, promotes collaboration, and encourages students to take charge of their own learning through digital media, while teachers guide them in utilizing online platforms.

Experiential Learning Theory (ELT), developed by Kolb in 1984, follows a four-stage process: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Kolb emphasized that effective learning occurs when students engage in this cycle. ELT underscores how significant experiences shape knowledge and behaviours. Carl Rogers, a key proponent of this theory, described learning as self-initiated and highlighted that it is most effective in environments where students feel safe and in control, with new learning continuously shaping the learning process (Office of Learning and Educating, 2005).

2. Method

2.1 Research Design

This study employs a survey research design, which is ideal for examining individuals' perceptions and assessments of issues. The method involves collecting data from a sample and applying the results to the broader population. This approach is appropriate because it aids in gathering the necessary data for the research. The use of surveys provides rich data that can be analysed effectively, addressing the research questions. The survey design is particularly suitable for describing situations as they naturally occur, without manipulating variables. This design was chosen to explore the impact of group discussions on students' performance in biology.

2.2 Area and Population of Study

The study is conducted at Heyik Secondary School in Kakuri, Kaduna South Local Government, Kaduna State, Nigeria. The school was chosen for its diverse environment and strategic location within the city. The target population comprises approximately 200 senior secondary school students, including both science and arts students, from the school's senior secondary section. The geographical coordinates of the school are 10.4677° N latitude and 7.4084° E longitude.

2.3 Sample Size and Sampling Techniques

Given the nature of the study population, a random sampling technique was used to select participants. The students were categorized into strata based on their class grade (SS 1, SS 2, and SS 3). Since not all senior secondary students at Heyik School study biology, the sample consisted of 150 students, including all science students and those enrolled in biology across the three grade levels. According to Mugenda and

Mugenda (2003), a sample size of at least 10% of the target population is sufficient for statistical analysis. The sampling method ensures broad representation of relevant subgroups.

2.4 Validity of the Instruments

The instrument used for data collection was a questionnaire assessing students' views on group discussions and student performance, considering factors such as communication, learning/development, and time management. The questionnaire contained 20 multiple-choice questions focused on these three factors. It was administered during the pre-test and post-test to measure students' performance in biology when taught using the discussion method. The questionnaire was developed using a five-point Likert scale (Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree). A copy of the questionnaire, along with a letter explaining the study's purpose, was submitted to the supervisor for validation. Feedback from the supervisor and others was used to refine the questionnaire.

2.5 Reliability of the Instrument

To test the reliability of the instrument, a test-retest method was used. This involves administering the same test to the sample group at least twice. If the results are consistent each time, it indicates that the research method is reliable and not influenced by external factors such as the sample's mood or the day of the week. This approach also allowed for a preliminary assessment of the questionnaire, identifying unclear or ambiguous questions.

2.6 Data Collection

Primary data was used for this research, collected through self-administered, structured questionnaires. This method ensures that all respondents answer the same set of questions in a consistent manner. The questionnaire was divided into two parts: Part A, which gathered general information about the students, and other sections focused on factors such as time management and communication, which influence the effectiveness of group discussions on students' performance in biology. The researcher explained the questions to the students, ensuring clarity and encouraging honest, unbiased responses. This approach was intended to help respondents understand the questions and provide their independent opinions.

2.7 Method of Data Analysis

For data analysis, descriptive statistics were used to analyse the data collected from the structured questionnaires. The Statistical Package for Social Sciences (SPSS) was employed to facilitate the analysis. Additionally, multiple correlation analysis was used to test the hypotheses and draw logical conclusions from the data.

3. Results and Discussion

This chapter presents the analysis of data-collected from selected students who offer biology as a subject. First, this research gives an overview of the process of data generation and analysis, the results of the analysis, the result of testing the hypothesis and the findings interpreted and discussed. A total of one hundred and fifty (150) questionnaires were administered, out of which one hundred and twenty-one (121) copies were retrieved which were used for the analysis.

3.1 Data Presentation and Analysis

This chapter is concerned with the presentation and analysis of the data obtained from the questionnaire. For this analysis, the researcher used of the number of all returned questionnaires which is 121.

3.2 Socio Demographic Characteristic of Respondents

This section presents the socio-demographic data of respondents. This includes age distribution, class, religion. The information gathered from the respondents are presented.

Table 1 Socio Demographic Characteristics of Respondents

Variable	Frequency	Percentage (%)
Age		
12-15	35	28.9
15-18	67	55.4
19 and above	19	15.7
Total	**121**	**100**
Class Grade		
SS 1	51	42.1
SS 2	40	33.1
SS 3	30	24.8
Total	**121**	**100**
Gender		
Male	51	42.1

Female	70	57.9
Total	**121**	**100**
Religion		
Christianity	72	59.5
Islam	49	40.5
Others	0	0
Total	**121**	**100**

Source: Field Survey, 2023

In Table 1, the findings indicated that 67 students representing 55.4% are between the ages of 15-18 years, while 35 students representing 28.9% were between the ages of 12 to 15 years. The age distribution also indicates that 19 students representing 15.7% of the respondents were among the age of 19 years and above. Responses on the class grade status of the respondents indicates that 51 students representing 43.1% are in SS 1, 40 students representing 33.1% are in SS 2, while 30 students representing 24.8% are in SS3.Based on gender distribution, the research found out that 70 respondents representing 57.9% students are female while 51 respondents representing 42.1% are male. Table 4.2.1 also examined data on religious status of respondents. The result shows that 72 students represent 59.5%practices the Christian faith, 49 students representing 40.5% are of the Islamic faith while non were of any other religious faith.

Research Question One: Impact of group discussion via communication method on students' performance in biology.

Table 2 Respondents Views on if they believe that there is effective communication between teachers and students in Biology classes

Response	**Frequency**	**Percent (%)**
Strongly-Agree	34	28.1
Agree	47	38.8
Undecided	18	14.9
Disagree	17	14.1
Strongly Disagree	5	4.1
Total	**121**	**100**

Source: Field Survey, 2023

Table 2 shows respondents' views on if they believe that there is effective communication between teachers and students in Biology classes. It reveals that out of the 121 respondents, 34res-pondentsrepresenting 28.1% of the sample-size Strongly-Agreed, 47 respondents represented by 38.8% of the sample-size Agreed and 18 respondents representing 14.9% were Undecided. 17 respondents representing 14.1% disagreed and 5 respondents representing 4.1% strongly disagreed. Analysis in this table depicts respondents' Agreement on the notion that there is effective communication between teachers and students in Biology classes.

Table 3 Respondents Views on the use of communication tools and platforms enhances my understanding of biological concepts

Response	**Frequency**	**Percent (%)**
Strongly-Agree	43	35.5
Agree	55	45.5
Undecided	12	9.9
Disagree	8	6.6
Strongly Disagree	3	2.5
Total	**121**	**100**

Source: Field Survey, 2023

Table 3 shows respondents' views on the use of communication tools and platforms enhance my understanding of biological concepts. It reveals that out of the 121 respondents, 43res-pondentsrepresenting 35.5% of the sample-size Strongly-Agreed, 55 respondents represented by 45.5% of the sample-size agreed and 12 respondents representing 9.9% were Undecided. While 8 respondents representing 6.6% disagreed and 3 respondents representing 2.5% strongly Disagreed. This indicates that the use of communication tools and platforms enhances students' understanding of biological concepts.

Table 4 Respondents Views on if they feel comfortable asking questions and seeking clarification during Biology discussions

Response	Frequency	Percent (%)
Strongly-Agree	30	24.8
Agree	53	43.8
Undecided	20	16.5
Disagree	12	9.9
Strongly Disagree	6	5
Total	121	100

Source: Field Survey, 2023

The table shows respondents 'views on whether they feel comfortable asking questions and seeking clarification during Biology discussions. It was revealed that out of the 121 respondents, 30respondentsrepresenting 24.8% of the sample-size Strongly-Agreed, 53 respondents represented by 43.8% of the sample-size Agreed and 20 respondents representing 16.5% were Undecided. Also, 12 respondents representing 9.9% Disagreed and 6 respondents representing 5% strongly disagreed. Analysis in this table depicts respondents' agreement on the notion that students feel comfortable asking questions and seeking clarification during Biology discussions.

Table 5 Respondents Views on feedback provided by teachers on my academic performance is clear and helpful

Response	Frequency	Percent (%)
Strongly-Agree	45	37.2
Agree	57	47.1
Undecided	11	9.1
Disagree	6	4.9
Strongly Disagree	2	1.7
Total	121	100

Source: Field Survey, 2023

The shows respondents 'views on if feedback provided by teachers on my academic performance is clear and helpful. It reveals that out of the 121 respondents, 45 respondents representing 37.2% of the sample-size Strongly-Agreed, 57 respondents represented by 47.1% of the sample-size Agreed and 11 respondents representing 9.1% were Undecided. 6 respondents representing 4.9% Disagreedwhile2 respondents representing 1.7% strongly Disagreed. Analysis in this table depicts a positive notion that feedback provided by teachers on my academic performance is clear and helpful.

Table 6 Respondents Views on Overall believe that communication plays a significant role in my success in Biology

Response	**Frequency**	**Percent (%)**
Strongly-Agree	44	36.4
Agree	58	47.9
Undecided	10	8.3
Disagree	7	5.8
Strongly Disagree	2	1.7
Total	**121**	**100**

Source: Field Survey, 2023

Table 6 shows respondents 'views on overall believe that communication plays a significant role in my success in Biology. It reveals that out of the 121 respondents, 44 respondents representing 36.4% of the sample-size Strongly-Agreed, 58 respondents represented by 47.9% of the sample-size Agreed and 10 respondents representing 8.3% were Undecided. 7 respondents representing 5.8% Disagreedwhile2 respondents representing 1.7% strongly disagreed. Analysis in this table indicates a positive response and believes that communication plays a significant role in my success in Biology.

Research Question Two: Learning factors that influence group discussion method and how it affects students' performance in biology.

Table 7 Respondents Views on Participation in extracurricular activities has positively contributed to my overall learning and development

Response	Frequency	Percent (%)
Strongly-Agree	34	28.1
Agree	58	47.9
Undecided	15	12.4
Disagree	12	9.9
Strongly Disagree	2	1.7
Total	**121**	**100**

Source: Field Survey, 2023

Table 7 shows respondents 'views on participation in extracurricular activities has positively contributed to my overall learning and development. It reveals that out of the 121 respondents, 34 respondents representing 28.1% of the sample size Strongly-Agreed, 58 respondents represented by 47.9% of the sample-size Agreed and 15respondents representing 12.4% were Undecided. 12respondents representing 9.9% Disagreed while 2 respondents representing 1.7% strongly Disagreed. Analysis in this table depicts a positive response and notion that participation in extracurricular activities has positively contributed to my overall learning and development.

Table 8 Respondents Views on students' opinion whether the school's curriculum adequately addresses both academic knowledge and practical life skills

Response	Frequency	Percent (%)
Strongly-Agree	30	24.8
Agree	51	42.1
Undecided	25	20.7
Disagree	12	9.9
Strongly Disagree	3	2.5
Total	**121**	**100**

Source: Field Survey, 2023

Table 8 shows respondents 'views on whether the school's curriculum adequately addresses both academic knowledge and practical life skills. It reveals that out of the 121 respondents, 30respondents representing 24.8% of the sample-size. Strongly-Agreed, 51 respondents represented by 42.1% of the sample-size Agreed and 25 respondents representing 20.7were Undecided. 12 respondents representing 9.9% Disagreed while 3 respondent representing 2.5% strongly. Disagreed. Analysis in this table indicates a positive response and notion that the school's curriculum adequately addresses both academic knowledge and practical life skills.

Table 9 Respondents Views on Continuous learning opportunities, such as workshops and seminars, are beneficial for my academic growth

Response	Frequency	Percent (%)
Strongly-Agree	36	29.8
Agree	59	48.8
Undecided	13	10.7
Disagree	9	7.4
Strongly Disagree	4	3.3
Total	**121**	**100**

Source: Field Survey, 2023

This table shows respondents 'views on whether continuous learning opportunities, such as workshops and seminars, are beneficial for my academic growth. It reveals that out of the 121 respondents, 36res-pondentsrepresenting 29.8% of the sample-size Strongly-Agreed, 59 respondents represented by 48.8% of the sample-size Agreed and 13 respondents representing 10.7% were Undecided. While 9 respondents representing 7.4% Disagreed and 4 respondents representing 3.3% strongly Disagreed. This indicates that the continuous learning opportunities, such as workshops and seminars, are beneficial for my academic growth among students.

Table 10 Respondents Views on the believe that the school encourages a holistic approach to education beyond just academic achievements

Response	**Frequency**	**Percent (%)**
Strongly-Agree	33	27.3
Agree	59	48.8
Undecided	14	11.6
Disagree	11	9.1
Strongly Disagree	4	3.3
Total	**121**	**100**

Source: Field Survey, 2023

This table shows respondents 'views on believe that the school encourages a holistic approach to education beyond just academic achievements. It reveals that out of the 121 respondents, 33respondents representing 27.3% of the sample size Strongly-Agreed, 59 respondents represented by 48.8% of the sample-size Agreed and 14respondents representing 11.6% were Undecided. 11respondents representing 9.1% Disagreed while 4 respondents representing 3.3% strongly Disagreed. Analysis in this table indicates a positive response and believes that the school encourages a holistic approach to education beyond just academic achievements.

Table 11 Respondents Views on various learning experiences provided at the school contribute to my overall development as an individual

Response	**Frequency**	**Percent (%)**
Strongly-Agree	37	30.6
Agree	59	48.8
Undecided	13	10.7
Disagree	8	6.6
Strongly Disagree	4	3.3
Total	**121**	**100**

Source: Field Survey, 2023

The table shows respondents 'views on various learning experiences provided at the school contribute to my overall development as an individual. It reveals that out of the 121 respondents, 37respondents representing 30.6% of the sample size Strongly-Agreed, 59 respondents represented by 48.8% of the sample-size Agreed and 13respondents representing 10.7% were Undecided. 8respondents representing 6.6% Disagreed while 4 respondents representing 3.3% strongly Disagreed. Analysis in this table indicates a positive response that various learning experiences provided at the school contribute to my overall development as an individual.

Research Question Three: Possible challenges faced (with regard to time management) by students who engages in group discussion.

Table 12 Respondents Views on students' confident in their ability to effectively manage my time for Biology studies

Response	Frequency	Percent (%)
Strongly-Agree	11	9.1
Agree	20	16.5
Undecided	16	13.2
Disagree	47	38.8
Strongly Disagree	27	22.3
Total	121	100

Source: Field Survey, 2023

Table 13. shows respondents 'views on students' confident in their ability to effectively manage their time for Biology studies. It reveals that out of the 121 respondents, 11respondents representing 9.1% of the sample size Strongly-Agreed, 20respondents represented by 16.5% of the sample size Agreed and 16respondents representing 13.2% were Undecided. 47respondents representing 38.8% Disagreed while

27respondents representing 22.3% strongly Disagreed. Analysis in this table negates the notion that there is confident in students' ability to effectively manage their time for Biology studies.

Table 14 Respondents Views on students establishing priorities and setting goals helps them manage their time efficiently for academic tasks

Response	Frequency	Percent (%)
Strongly-Agree	31	25.6
Agree	47	38.8
Undecided	21	17.4
Disagree	13	10.7
Strongly Disagree	9	7.4
Total	**121**	**100**

Source: Field Survey, 2023

Table 15. shows respondents 'views on whether students establishing priorities and setting goals helps them manage their time efficiently for academic tasks. It reveals that out of the 121 respondents, 31respondents representing 25.6% of the sample-size Strongly-Agreed, 47 respondents represented by 38.8% of the sample size Agreed and 21respondents representing 17.4% were Undecided. Also, 13respondents representing 10.7% Disagreed while 9 respondents representing 7.4% strongly Disagreed. Analysis in this table depicts a positive response that ability of students to establish priorities and set goals helps them manage their time efficiently for academic tasks.

Table 16 Respondents Views on whether they find it challenging to allocate sufficient time for Biology studies due to other commitments

Response	Frequency	Percent (%)
Strongly-Agree	37	30.6
Agree	59	48.8
Undecided	13	10.7
Disagree	8	6.6
Strongly Disagree	4	3.3
Total	**121**	**100**

Source: Field Survey, 2023

Table 16 shows respondents 'views on whether they find it challenging to allocate sufficient time for Biology studies due to other commitments. It reveals that out of the 121 respondents, 37respondents representing 30.6% of the sample size Strongly-Agreed, 59 respondents represented by 48.8% of the sample-size Agreed and 13respondents representing 10.7% were Undecided. 8respondents representing 6.6% Disagreed while 4 respondents representing 3.3% strongly Disagreed. Analysis in this table indicates that majority of students find it challenging in allocating sufficient time for Biology studies due to other commitments.

Table 17 Respondents Views on whether the school provides adequate support and resources to help me improve their time management skills

Response	Frequency	Percent (%)
Strongly-Agree	9	7.4
Agree	20	16.5
Undecided	16	13.2
Disagree	49	40.5
Strongly Disagree	27	22.3
Total	**121**	**100**

Source: Field Survey, 2023

Table 17 shows respondents views on whether the school provides adequate support and resources to help me improve their time management skills. It reveals that out of the 121 respondents, 9respondents representing 7.4% of the sample-size Strongly-Agreed, 20respondents represented by 16.5% of the sample size Agreed and 16respondents representing 13.2% were Undecided. 49respondents representing 40.5sd% Disagreed while 27respondents representing 22.3% strongly Disagreed. Analysis in this table indicates a

negative response and notion that the school provides students adequate support and resources to help me improve their time management skills.

Table 18 Respondents Views on overall believe that good time management positively influences their performance in Biology

Response	Frequency	Percent (%)
Strongly-Agree	37	30.6
Agree	59	48.8
Undecided	13	10.7
Disagree	8	6.6
Strongly Disagree	4	3.3
Total	121	100

Source: Field Survey, 2023

Table 18 above shows respondents' views on overall believe that good time management positively influences their performance in Biology. It reveals that out of the 121 respondents, 37respondents representing 30.6% of the sample size Strongly-Agreed, 59 respondents represented by 48.8% of the sample-size Agreed and 13respondents representing 10.7% were Undecided. 8respondents representing 6.6% Disagreed while 4 respondents representing 3.3% strongly Disagreed. Analysis in this table indicates a positive response that overall believe that good time management positively influences their performance in Biology.

Descriptive Statistics: The descriptive statistics of the data collected for the study is presented and discussed in this section. The summary of the descriptive statistics of the data collected is presented in the table as follows.

Table 19 Descriptive Statistics of the Variables

Variables	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**	**Skewness**	**Kurtosis**
SP (Student Performance)	121	1.00	5.00	2.7536	0.50959	0.309	0.320
CM (Communication)	121	1.00	5.00	2.6604	0.52774	0.110	-0.050
LD (Learning & Development)	121	1.00	5.00	2.6253	0.50265	0.218	0.563
TM (Time Management)	121	1.00	5.00	2.6493	0.46010	0.347	1.495
Valid N (listwise)	121						

Source: Field Survey, 2023

Explanation:

- **N**: Number of observations (121 in this case)
- **Minimum** and **Maximum**: The range of values for each variable
- **Mean**: The average score for each variable
- **Std. Deviation**: The spread of data from the mean
- **Skewness**: Indicates the asymmetry of the distribution of data
- **Kurtosis**: Measures the "tailedness" of the distribution

Table 19 Descriptive Statistics of the Variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SP	121	1.00	5.00	2.7536	.50959	.309	.127	.320	.253
CM	121	1.00	5.00	2.6604	.52774	.110	.127	-.050	.253
LD	121	1.00	5.00	2.6253	.50265	.218	.127	.563	.253
TM	121	1.00	5.00	2.6493	.46010	.347	.127	1.495	.253
Valid N (listwise)	121								

Source: Field Survey, 2023

Table 19 shows that our proportion of understudy execution (SP) has a base worth of 1 and 5 as the greatest worth, this demonstrates that 1 is the most minimal worth in the informational index while 5 is the most noteworthy worth in the informational collection which means that there is no exception issues in

the informational index. The typical worth of the SP is 2.7536 with standard deviation of .500959, implies that the information go amiss from both side of the mean worth around. This infers that there is a piece scattering of the information from the mean, due to the worth of standard deviation which is near the mean. The values for SP's skewness and kurtosis are.320 and.309, respectively.

The outcomes from the table additionally show that the base and most extreme upsides of correspondence (CM) are 1 and 5 separately; this shows non-presence of anomalies' issues from the informational index. The mean worth of 2.6604 and standard deviation of .52774 in the information suggests that there is scattering from the mean worth roughly. The skewness and Kurtosis of CM shows the worth - .050 and .110 individually.

The outcomes from the table additionally demonstrate that the base and greatest benefits of learning and advancement (LD) are 1 and 5 individually; this demonstrates non-presence of exceptions' issues from the informational collection. The mean worth of 2.6253 and standard deviation of .50265 in the information suggests that there is scattering from the mean worth. The skewness and Kurtosis of LD shows the worth .563 and .218 individually. The outcomes from the table likewise show that the base and most extreme upsides of using time effectively (TM) are 1 and 5 separately; This indicates that there are no issues with outliers in the data set. The mean worth of 2.6493 and standard deviation of .46010 in the information suggests that there is scattering from the mean worth. The skewness and Kurtosis of TM shows the value .347 and 1.495 respectively.

Correlation Matrix: In this section, the result of the Pearson-correlation Coefficients of the variables of the study is presented in Table 4.2 as follows.

Table 21 Correlation Matrix of the Dependent and Independent Variable of the First Model

Variables	SP (Student Performance)	CM (Communication)	LD (Learning & Development)	TM (Time Management)
SP (Student Performance)	1	0.760**	0.733**	0.692**
Sig. (2-tailed)	-	0.000	0.000	0.000
N	121	121	121	121
CM (Communication)	0.760**	1	0.756**	0.683**
Sig. (2-tailed)	0.000	-	0.000	0.000
N	121	121	121	121
LD (Learning & Development)	0.733**	0.756**	1	0.691**
Sig. (2-tailed)	0.000	0.000	-	0.000
N	121	121	121	121
TM (Time Management)	0.692**	0.683**	0.691**	1
Sig. (2-tailed)	0.000	0.000	0.000	-
N	121	121	121	121

Field survey, 2023

Note:

- **Pearson Correlation** values are displayed in the body of the table.
- **Sig. (2-tailed)** indicates the significance level of the correlation (p-value).
- **N** represents the sample size.

The double asterisks (**) denote a statistically significant correlation at the 5% significance level.

The relationship lattice is utilized to decide the level of relationship between autonomous factors and the reliant variable. It is likewise utilized distinguish whether there is a connection between free factors themselves, to recognize the chance of multicolinearity among the illustrative factors. This is fundamental so a more extensive picture than we might have when relapsed independently against execution would be gotten.

Understudy execution (SP) has serious areas of strength for a relationship with correspondence (CM) as indicated by the worth 0.760. As indicated by the value 0.733, student performance (SP) has a strong positive relationship with learning and development (LD). Additionally, the value 0.692 indicates a strong positive relationship between student performance (SP) and time management (TM).

While correspondence (CM) has areas of strength for a positive relationship with learning and improvement (LD) with the worth of 0.756. Using time effectively (TM) has serious areas of strength for a positive relationship with (CM) with worth of 0.683, (TM) has areas of strength for a relationship with (LD) with worth of 0.691.

The study's models' regression results are discussed and explained in this section. The speculations figured out for the review are additionally tried from the outcomes as introduced in Table 4.5 underneath.

Table 22 Summary of Regression Result

Variables	Co-efficient	t-values	p-values
Coefficient	0.328	3.455	0.001
CM	0.380	7.981	0.000
LD	0.278	5.501	0.000
TM	0.259	5.230	0.000
R^2	0.662		
Adjusted R^2	0.659		
F-stat			239.212
F-sig			0.000

Source: Field Survey, 2023

Group Discussion and Student Performance

The outcome shows that three logical factors fundamentally affect understudies' presentation at 1% and 5% degrees of importance. Aggregately the R2 (0.662) which is the consolidated coefficient of assurance demonstrates the degree to which the autonomous factors make sense of the all out variety in the reliant variable and the excess 34% is made sense of by different elements not caught by the model of this review. Consequently, it connotes that 66% of the complete variety in understudies' presentation is by CM, LD and TM. This shows that the illustrative factors are very much chosen and consolidated in light of the fact that the R2 is positive and fulfils the base guideline.

The study's model is fit, as evidenced by the F-statistics of 239.212, which are significant at the 1% level of significance. The worth of F-insights which is measurably critical at one percent level of importance (0.000) truly intends that there is a 99 percent likelihood of certainty that the relationship among the factors of the review isn't simply by some coincidence.

Testing of Hypothesis: This segment shows the examination did with the end goal of testing the speculations figured out in part one.

Communication and Student Performance

Hypothesis One: Group discussion through communication does not significantly impact students' performance in biology at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna. However, correspondence was found to have a positive and statistically significant influence on students' performance at the 5% significance level. As shown in Table 4.3, the t-value for correspondence (CM) is 7.981, with a coefficient value of 0.380 and a p-value of 0.000 (at the 5% significance level). This indicates that effective communication has a substantial positive impact on students' performance in biology. Consequently, improving the quality of communication can enhance students' academic performance in biology at Heyik Secondary School. Based on these findings, the null hypothesis is rejected, and the alternate hypothesis is accepted.

Learning and Development on Student Performance

Hypothesis Two: Group discussion focused on learning and development does not significantly impact students' performance in biology at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna. However, the analysis reveals that learning and development positively and significantly influence students' performance. As shown in Table 4.3, the regression results indicate a coefficient value of 0.278, a t-value of 5.501, and a significance level of 0.000. This finding highlights a meaningful relationship between learning and development and students' academic performance in biology, contrary to initial expectations and some previous studies.

Time Management and Student Performance

Hypothesis Three: Group discussion through time management does not have a significant impact on students' performance in biology at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna. However, time management is statistically significant and negatively associated with students' performance. As shown in Table 4.3, the analysis reports a t-value of 5.230, a coefficient of 0.259, and a significance level of 0.000. These findings indicate that time management positively and significantly influences students' performance in biology. Based on this evidence, the null hypothesis is rejected, and the alternate hypothesis is accepted.

Discussion of Major Findings

Communication positively and significantly impacts students' performance in biology at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna. Similarly, learning and development have a positive and significant influence on students' performance. However, time management shows a statistically significant but negative association with students' performance. These findings highlight the importance of effective communication and learning strategies in improving academic outcomes while indicating a complex relationship with time management.

Discussion, Conclusion And Recommendation

The conversation strategy involves interactive discussions between teachers and students or among students to enhance critical thinking, learning, problem-solving, and academic understanding. Donche (2016) describes group discussion as a democratic teaching method where all students have equal opportunities to engage and share ideas.

This study examined the impact of the group discussion method on students' performance in biology. Independent variables included communication, learning and development, and time management, while the dependent variable was students' academic performance. Results showed that communication positively and significantly influenced students' biology performance at Heyik Secondary School, Kaduna. Improving communication quality can enhance academic outcomes, aligning with findings by Alexander et al. (2021) on the impact of discussion methods in science education. Discussions foster interest, encourage a positive attitude toward science, and promote logical thinking through active participation (Olarewaju, 2017; Ugwu et al., 2020).

Learning and development also showed a positive and significant impact, with a coefficient of 0.278, t-value of 5.501, and a significance level of 0.000, suggesting a strong relationship between these factors and students' biology performance. These findings are consistent with Juweto (2018), who found that students taught using Small Group Teaching outperformed those taught through Peer Tutoring, with better retention in the former group.

The study highlights the importance of effective communication and structured learning in enhancing biology performance. However, time management was found to negatively impact students who use group discussions as a learning method. This may be due to students' inability to create a well-organized and focused timeline for managing their daily routines and completing academic tasks. Effective time management is crucial for students to stay organized and complete coursework on time, leading to better success. Learning to manage time effectively requires students to adjust their routines and prioritize tasks. The study is divided into five chapters, with Chapter 1 providing a background to the research, addressing the problem, outlining research objectives, questions, and hypotheses, and defining the scope and significance of the study. In the second chapter, a thorough review of relevant literature is conducted to provide a theoretical framework for the study. This includes an examination of existing studies, theories, and models related to group discussion methods, biology education, and student performance. The literature review aims to build a foundation for the research and identify gaps that this study seeks to address.

This chapter outlines the research methodology, including the research design, population, and sampling techniques. It details the data collection methods, such as surveys or interviews, and the analysis tools used. Ethical considerations and study limitations are also discussed. The fourth chapter presents the research findings, analysed using appropriate statistical methods, and addresses the research questions and hypotheses. The final chapter draws conclusions, linking them to the study's objectives, and offers recommendations for educators, policymakers, and future research. It concludes with reflections on the broader implications for biology education.

4. Conclusion

This study explored the impact of Communication, Learning and Development, and Time Management on students' performance in Biology at Heyik Secondary School, Kakuri, Kaduna. The findings revealed:
Communication has a significant positive influence on students' understanding and engagement, contributing to better academic outcomes. Learning and Development fosters continuous growth and holistic improvement, positively affecting performance. Time Management significantly enhances students' academic success, emphasizing the value of effective study habits. These insights highlight the interplay of these factors in shaping a supportive learning environment and underscore their importance in educational strategies.

Recommendations

- Communication: Develop effective strategies, such as open communication channels and modern tools, to improve understanding.
- Learning and Development: Implement programs like curriculum enhancements and life-skill workshops to foster growth.
- Time Management: Provide workshops and guidance to help students prioritize and manage their time efficiently.
- Teacher Training: Conduct professional development to equip educators with skills in communication, learning facilitation, and time management.
- Monitoring and Evaluation: Regularly assess and refine implemented strategies for continuous improvement.
- Parental Involvement: Engage parents to support these initiatives at home and school.

Suggestions for Further Research

Future studies should explore: (a) Applying these strategies to other science subjects. (b) Designing group discussions focused on complex concepts. (c) Using larger sample sizes for broader insights. (d) Comparing group discussions with other collaborative teaching methods.

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APPENDIX

Introductory Letter

Dear Sir/Ma,

This questionnaire is designed for a research project titled "Impact of Group Discussion on Students Performance in Biology at Heyik Secondary School, Kakuri, Kaduna South Local Government, Kaduna." I am a student running a Postgraduate Diploma (PGD) Programme. You have been selected to fill this questionnaire and your honest opinion will be appreciated. Your names will not be mentioned and your responses will be used for research purpose only.
Thank you.

Researcher

Section A: Views on Group Discussion and Student Performance.
Kindly give an agreement level between **1 (Strongly Agree) and 5 (Strongly Disagree)**

Communication

1. I believe that there is effective communication between teachers and students in Biology classes.
   Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
2. The use of communication tools and platforms enhances my understanding of biological concepts.
   Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
3. I feel comfortable asking questions and seeking clarification during Biology discussions.
   Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
4. The feedback provided by teachers on my academic performance is clear and helpful.
   Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
5. Overall, I believe that communication plays a significant role in my success in Biology.
   Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]

Learning and Development

6. Participation in extracurricular activities has positively contributed to my overall learning and development.
   Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
7. I feel that the school's curriculum adequately addresses both academic knowledge and practical life skills.
   Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
8. Continuous learning opportunities, such as workshops and seminars, are beneficial for my academic growth.
   Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
9. I believe that the school encourages a holistic approach to education beyond just academic achievements.
   Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
10. The various learning experiences provided at the school contribute to my overall development as an individual.
    Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]

Time Management

11. I am confident in my ability to effectively manage my time for Biology studies.
    Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
12. Establishing priorities and setting goals helps me manage my time efficiently for academic tasks.
    Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
13. I find it challenging to allocate sufficient time for Biology studies due to other commitments.
    Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
14. The school provides adequate support and resources to help me improve my time management skills.
    Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
15. Overall, I believe that good time management positively influences my performance in Biology.
    Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]

Student Performance

16. I am satisfied with my current academic performance in Biology.
    Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
17. The grades I receive in Biology are reflective of my effort and understanding of the subject.
    Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
18. I believe that my performance in Biology has improved over the course of the academic year.
    Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
19. I feel adequately prepared for assessments and exams in the Biology curriculum.
    Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]
20. Overall, I am confident that my academic performance in Biology aligns with my personal goals and expectations.
    Strongly Agree [ ] Agree [ ] Undecided [ ] Disagree [ ] Strongly Disagree [ ]