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Research Article

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Perceptions of Students regarding Instructional Methods Used for Biology at Secondary School Level in Swabi

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Abstract

The current study was designed to explore the perceptions of students regrading methods of instruction for biology at secondary school level and describe the impact of instructional methods on students learning in biology at secondary school level. The study was descriptive in nature in which the current status of the subject was studied. A survey method has been used in this study. All the students of class 9th in public sector schools for girls constituted the population of the research study. Out of the total population 100 students of class 9th were randomly selected from the 10-government girl high schools of district Swabi. The main tool used in the study for data gathering was a questionnaire. For the purpose of gathering information about the student's opinions of the teaching methods, a questionnaire was created. The respondents, or participants, were given the questionnaire directly, and it was then collected once they finished it. The gathered data were collated, examined, and explained. Percentage was calculated by using statistical technique for analysis. Findings conclude that the majority of respondents said they enjoy studying biology. The majority of responders said biology was useful. Students believed that their teacher used the lecture approach.

Key Words

Students, Biology, Secondary School Level, Swabi, KP, Pakistan

Introduction

To properly impart knowledge to pupils and pass it on to the following generation, teaching is a complex process that calls for the use of effective teaching approaches. Secondary education is in a transitional period; thus it is important to adopt an effective teaching style that takes into account the needs of the students in order to provide the right kind of advice.

Teaching is both an art and a science, claims Vijayalakshmi (2004). Effective teachers are constantly looking for ways to enhance their teaching methods. As the times change, teachers are expected to use more modern techniques to teach their students more successfully so that they can meet the demands of the present. Modern teaching methods are required right now.

The person who instructs, mentors, and empowers kids to read and write is referred to as a "teacher." "Education and training of persons enabling them to become professional teachers" is how the Encyclopedia of Education describes teacher education. Rabbi (2020) have highlighted

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the significance of making teacher preparation dynamic. They recommended that teacher education programmes at all levels in the nation be designed so that the teachers they produce are broadly educated, scientifically minded, unwavering in their commitment to quality, innovative, but sympathetic toward students, in order to keep up with the changes in technology that society is undergoing.

Aggarwal (2010) came to the conclusion that teacher education involves the acquisition of knowledge, skills, and talents that are pertinent to a teacher's career. It's crucial to give teachers ongoing training so they can use effective teaching techniques. Education for teachers does not involve training them how to instruct. The objective is to maintain it, to lessen the negative effects of the "hit and miss" method, and to spare both the teacher and the student time, energy, money, and trouble. The need for the teacher to understand how the teacher education course would reduce his problems and how it would spare the kids from many of the difficult experiences he has personally gone through. Teacher education is necessary for the establishment of a purpose and a positive attitude towards the profession. Teacher education refers to the policies and practises created to give teachers the knowledge, attitudes, behaviours, and skills they need to carry out their duties successfully in the classroom and at the school.

The two stages of secondary education are secondary and higher secondary, according to Shami and Hussain (2005). Grades IX through X are included in the two-year secondary education. At the conclusion of the tenth grade, the Boards of Intermediate and Secondary Education across the nation administer the Secondary Schools Certificate (SSC) test. The majority of schools use Urdu as their primary language of teaching, with the exception of some that only teach in English. Grades XI and XII of higher education are taught in both intermediate colleges and higher secondary schools. The higher secondary students complete a two-year programme of study to earn a Higher Secondary School Certificate (HSSC). English is typically used as the instruction language for science topics. The examination for the higher secondary school certificate is given at the conclusion of the 12th grade by the Boards of Intermediate and Secondary Education. The calibre of a nation's instructors determines how far it will advance. The irony of fate, however, is that teaching is the least desirable job and teachers no longer hold a respectable status in society, according to Rao (2004), who made this observation on teacher education. If our nation's teacher preparation programmes are of higher caliber, teaching may restore its former noble standing.

Problem Statement

The goal of the current study was to discover how Swabi secondary school students perceived the teaching strategies used in biology.

Objectives Of the Study

The objectives of the study were to:

1. Explore the perceptions of students regrading methods of instruction for biology at secondary school level.
2. Describe the impact of instructional methods on students learning in biology at secondary school level

Research Questions

1. What are the perceptions of students regrading methods of instruction for biology at secondary school level.
2. What is the impact of instructional methods on students learning in biology at secondary school level

Significance of the Study

This study is very important for secondary school teaching faculty and for all teachers since it has gathered a lot of data on teaching strategies, their efficacy, and their suitability for various secondary-level courses. Additionally, research will direct head teachers as they investigate appropriate teaching approaches. The planners and education managers who are responsible for developing or revising the country's secondary teacher education programmes will also benefit from the study's relevance. Additionally, it will assist in-service teacher education institutions in awarding or providing pertinent in-service training programmes.

Delimitation of the Study

The study was delimited to the female public sector secondary school in district Swabi.

Review of Related Literature

Education is a crucial component of human development, environmental management, and the refinement and preservation of the shared ideals ingrained in a society's culture (Eno, 2022). For successful citizenship and the benefit of society as a whole, a network of priceless knowledge, abilities, and habits are passed down through education from one generation to the next.According to Nja, Cornelius-Ukpepi, Edoho, and Orim (2019), Nja, Idiege, and Obi (2017), and Nja and Idiege (2019), education is a systematic, intellectual, and moral training and development that is geared toward acquiring knowledge, developing character, and also mental development that will ensure human survival. Edoho, Nja, Cornelius, Ukpepi (2020). Effective teaching and learning make this a reality. When it comes to preparing students for meaningful lives and contributions to a better society, education is frequently seen as a systematic action of transmitting knowledge, skills, and habits that are relevant to their circumstances (Oloyede, 2006.) However, the typical method of delivering this activity is through skillful exposure to several academic subjects. Science education is a component of education that helps a person become rational, fosters the development of his independent thought, and aids in the elimination of superstitions that are pervasive in society in many forms (Nja, Kalu, & Neji) (2015). Science education and a scientific approach have gained importance in light of current advancements in biology and its significance to the modern world. According to Nja, Cornelius-Ukpepi, Edoho, and Orim (2019), Nja, Idiege, and Obi (2017), and Nja and Idiege (2019), biology, chemistry, physics, and mathematics are the four subjects that make up science education the most frequently. Edoho, Nja, Cornelius-Ukpepi (2020).

According to the researcher, all forms of education, including science education, must foster in students a sense of the issues facing society as well as the ability to contribute to finding solutions. A significant and essential component of organised society is now science. Science and the societal economic, social, political, and educational systems are closely connected. Society has never been as reliant on scientific knowledge as it is today in the history of the human race. Students' worldly curiosity is fostered and their capacity for scientific thought is expanded through science education. Students will gain scientific knowledge and biology process skills through the inquiry process, which will help them analyse the effects of scientific and technological advancements. They will also be able to recognise the nature of biology with the use of biological research. The goal of biology education is to increase students' scientific literacy through investigative tasks that require planning, measuring, observing, analysing data, developing and evaluating processes, and looking at evidence.The study of life and living things, including its physical makeup, chemical composition, molecular interactions, physiological mechanisms, development, and evolution, is known as biology. The depths of biological sciences hold the key to our own existence and origin on earth. There are countless different species in

biology. Understanding complicated forms of life involving people, animals, and plants is greatly aided by biology. People can better comprehend how humans and the rest of the world interact through biology. In an effort to conserve them, it also fosters interest in the lives of living things. Understanding biology is the basis for understanding all aspects of earthly life. It not only provides answers to the problems that many living things encounter, but it also prepares the way for innovations and discoveries that enhance the standard of existence. The advancements made in the eradication of hereditary disorders and the improvement of food supply are further examples of how biology is appreciated. Since biology is a science-focused topic, it has advanced in the areas of forensic science, genetic engineering, and technology. Despite its significance, pupils' performance at higher levels of secondary schools has deteriorated.

Student's Perception of Teacher's Method of Teaching and Academic Performance in Biology

In secondary schools, there are primarily two ways that science is taught: in the lower secondary, it is taught as Basic Science, and in the upper secondary, it is taught as individual science courses like Chemistry, Physics, and Biology. The fact that studies and discoveries have revealed low academic performance in secondary school science is troubling (Onwuakpa and Nweke, 2000).All Senior Secondary Schools in Nigeria teach biology as the science of life, which draws the most interest from those interested in both science and the arts (Nwosu, 2006). According to Urevbu (1990), biology instruction is crucial because it gives pupils the knowledge and skills they need to create a progressive society as well as the ability to understand the world around them. Similar to this, Nwosu (2005) found that biology gives students a platform to learn how to apply science concepts and principles to situations they encounter in daily life. The Internet has caused an information explosion that has affected biological knowledge as well. The topic has emerged as a key concern in the majority of human endeavours, encompassing concerns about biotechnology, ethics, population growth, pollution, disease, health, and cleanliness, as well as managing and conserving natural resources. It is known that developments have occurred in the domains of biochemistry, physiology, ecology, genetics, and molecular biology.

Research Methodology

Nature of the Study

The study was descriptive in nature and examined the subject's current state. A survey method has been used in this study.

Population

All the students of class 9th in public sector schools for girls constituted the population of the research study

Sample

Out of the total population 100 students of class 9th were randomly selected from the 10-government girl high schools of district Swabi

Research Instrument

The main tool used in the study for data gathering was a questionnaire. For the purpose of gathering information about the student's opinions of the teaching methods, a questionnaire was created.

Data Collection and Analysis

The respondents, or participants, were given the questionnaire directly, and it was then collected once they finished it. The gathered data were collated, examined, and explained. Statistical analysis was used to calculate the percentage.

Analysis of Data

Table 2

Do you like biology subject?	SA	A	U	DA	SDA
Frequency	50	20	5	15	10
Percentage	70%		5%	25%	

Table 1 shows that 70% respondents were of the opinion that they like biology subject.

Table 2

Do you feel that biology subject is a practical one?	SA	A	U	DA	SDA
Frequency	80	10	0	7	3
Percentage	90%		0%	10%	

Table 2 shows that 90% respondents were of the opinion that biology is practical.

Table 3

Do your teachers use lecture method for teaching biology?	SA	A	U	DA	SDA
Frequency	70	10	5	15	0
Percentage	80%		5%	15%	

Table 3 shows that 80% respondents were of the opinion that they their teacher use lecture method.

Table 4

Do you understand the lecture of teacher easily?	SA	A	U	DA	SDA
Frequency	20	10	10	50	10
Percentage	30%		10%	60%	

Table 4 shows that 60% respondents were of the opinion that did not understand the lecture easily.

Table 5

Do you understand the concept of human blood circulation easily through lecture demonstration?	SA	A	U	DA	SDA
Frequency	50	30	1	10	9
Percentage	80%		1%	19%	

Table 5 shows that 80% respondents learned the human blood circulatory system easily through lecture demonstration.

Table 6

Practical activity is better than lecture	SA	A	U	DA	SDA
Frequency	40	48	1	10	1
Percentage	88%		1%	11%	

Table 6 shows that 88% respondents were of the opinion that they practical activity is better than lecture.

Table 7

Lecture method is passive one	SA	A	U	DA	SDA
Frequency	40	45	5	10	0
Percentage	85%		5%	10%	

Table 7 shows that 85% respondents were of the opinion that lecture method is passive one.

Table 8

Do your teachers dissect a frog in laboratory?	SA	A	U	DA	SDA
Frequency	20	20	10	40	10
Percentage	40%		10%	50%	

Table 8 shows that 50% respondents were of the opinion that their teacher did not dissect a frog in the lab.

Table 9

Teacher present and clear examples to clarify abstract and difficult ideas.	SA	A	U	DA	SDA
Frequency	22	50	10	10	8
Percentage	72%		10%	18%	

Table 9 shows that 72% respondents were of the opinion that teacher present and clear examples to clarify abstract and difficult ideas.

Table 10

Lecture demonstration method in class for teaching biology is better method	SA	A	U	DA	SDA
Frequency	30	58	0	8	4
Percentage	88%		0%	12%	

Table 10 shows that 88% respondents used lecture demonstration method in class to teach biology.

Table 11

Practical activity for explaining structure of an organism or plant is more helpful in clearing students concept.	SA	A	U	DA	SDA
Frequency	30	40	10	10	10
Percentage	70%		10%	20%	

Table 11 shows 70% respondents were agreed to the item

Table 12. Out of 10 Schools Eight Government Girls High School Students Marks in those where Teacher only use Lecture Method and did not Perform Practical Work in Lab

.Marks	85%	70%	60%	50%	40%
Frequency	5	10	10	15	40

Table 12 shows that only five students were only in the group of 85% marks, 10 were in 70% and 10 were 60% out of 80 students

Table 13. Out of 10 schools Two Government girls high school Students Marks in those where teacher only use lecture demonstration method and clear the concept though practical work in lab.

Marks	85%	70%	60%	50%	40%
Frequency	10	9	1	0	0

Table 13 shows that out of 20 students 10 were stood in 85% and 9 were in 70% and there is no one student fall in 50% or 40%

Findings

1. According to Table 4.1, 70% of respondents said they enjoy the topic of biology.
2. 90% of respondents, as shown in Table 4.2, thought biology was practical.
3. Table 4.3 shows that 80% respondents believed they their teacher use lecture method.
4. Table 4.4 shows that 60% respondents were of the opinion that did not understand the lecture easily.
5. Table 4.5 shows that 80% respondents learned the human blood circulatory system easily through lecture demonstration.
6. Table 4.2 shows that 88% respondents were of the opinion that the practical activity is better than lecture.
7. Table 4.7 shows that 85% respondents were of the opinion that lecture method is passive one.
8. Table 4.8 suggests, 50% of respondents believed that their teacher did not dissect a frog in the lab.
9. Table 4.9 shows that 72% respondents were of the opinion that teacher present and clear examples to clarify abstract and difficult ideas.
10. Table 4.10 shows that 88% respondents used lecture demonstration method in class to teach biology.
11. Table 4.10 shows that only five students were only in the group of 85% marks, 10 were in 70% and 10 were 60% out of 80 students
12. Table 4.11 shows that out of 20 students 10 were stood in 85% and 9 were in 70% and there is no one student fall in 50% or 40%

Conclusions

The majority of respondents said they enjoy studying biology. The majority of responders said biology was useful. Students believed that their teacher used the lecture approach. Many respondents felt that the lecture was difficult to grasp. The human blood circulation system was simply taught to pupils through lecture demonstration. Many respondents felt that practical involvement was preferable to lecture. The majority of respondents believed that the lecture approach is a passive one. The vast majority of participants believed that their teacher did not dissect a frog in the lab. The majority of respondents felt that teachers should use concrete examples to help students understand abstract and challenging concepts. The lecture demonstration approach was utilized by the teacher to teach biology in class. Out of 80 pupils, only five had academic performance scores of 85%, ten had scores of 70%, and ten had scores of 60%. Out of 20 students, 10 were ranked in the top 85%, while 9 were in the top 70%. No student scored a 50% or 40%. Considering these findings

Recommendations

1. Regardless of the teaching strategies employed, teachers may use motivating techniques to engage students in the learning process.
2. Depending on the topic, the needs of the students, and their level, teachers may choose the manner of instruction.
3. Teachers may employ audio-visual aids more frequently to improve the effectiveness of their instruction.
4. In order to help pupils learn more effectively, teachers may pay attention to removing indicators of confusion, boredom, and curiosity.

References

- Aggarwal, J. C. (2010). *Essentials of educational psychology*. Vikas Publishing House.
- Eno, F. (2022). Teacher's Variables and Biology Students Academic Achievement in Secondary Schools. *SSRN Electronic Journal*. 1-32. https://doi.org/10.2139/ssrn.4013039
- Nja, C. O., Idiege, K. J., & Obi, J. J. (2017). Effect of the use of ICT on Chemistry Performance. *Education for Today. 13*(1), 148 -153. https://www.researchgate.net/publication/349699568
- Nja, C. O., Cornelius-Ukpepi, B. U., & Orim, R. E. (2019). Effect of Simulation instructional method on undergraduate Chemistry Education students academic performance in Sodium reactions. *European Journal of Scientific Research 155*(1), 6-12.
- Cecilia, O. N., Bernedette, C. U., Emmanuel, A. E., & Hope, A. N. (2020, January 31). Enhancing students academic performance in Chemistry by using kitchen resources in Ikom, Calabar. *Educational Research and Reviews*, *15*(1), 19–26. https://doi.org/10.5897/err2019.3810
- Nja, C. O., & Kalu, I. (2015). Kitchen Resources Classroom Interaction and Academics Performance and Retention in Thermochemistry in Cross River State, *Nigeria Journal of Education and Practice (IISTE) 4*(8), 169-172.
- Nwosu, A. A. (2005). *Teacher characteristics preferred by students': Implication for professional development practices*. Proceeding of 46th Annual Conference of STAN, 35-39.
- Oloyede, D.O. (2006). Teachers' qualification and experience as predictors of their job performance. *Journal of Educational Focus*, 7, 1–75.
- Onwuakpa, F. I., & Nweke, A. O. (2000). *Enriching science technology and mathematics education in secondary schools through effective utilization of resources in the classroom*. 41st Annual Conference Proceedings of STAN, 34-37.
- Rao, R. R. (2004). *Methods of teacher training*. Discovery Publishing House.
- Urevbu, A. O. (1990). *Methodology of science teaching*. Benin-city: Juland Educational Publishers.
- Vijayalakshmi, K. S. (2004). *Teaching strategies: Present practices and future directions*. Teaching strategies. APH Publishing.