
PERCEIVED ATTITUDES AND COMMUNICATION PATTERN OF BIOLOGY TEACHERS BY STUDENTS IN FEDERAL COLLEGE OF
EDUCATION IN KADUNA STATE

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ABSTRACT

The purpose of this study was to determine the perceived attitude and communication pattern of biology teachers by students in biology department of Federal College of Education, Zaria, Kaduna State. The population of the study is 2575 biology students in the college, from which 200 were selected using stratified random sampling technique. A 5-Likert type questionnaire, with Cronbach's alpha reliability of 0.86, was constructed consisting of 25 items categorized into three sub-sections. The data collected was analysed using mean score and simple percentage frequency distribution. Results indicated that attitude and communication styles of the biology teachers in are ranges from normal to acceptable limits. Also, a discussion frame of communication related problems in order to improve the subject knowledge and teacher training programs was provided. The study concludes that teacher's attitude is pivotal to student perceptions of learning, inhibiting or facilitating student learning. Recommendations made includes that the biology teacher needs to develop more friendly ways of attracting the attention of students in the class, bearing in mind the tilt of today's teaching methods to be more student-centered and activity oriented.

Keywords: Attitude, Behaviour, Biology teachers, Communication, Student perceptions

INTRODUCTION

Biology is a natural science subject consisting of contents from microscopic organisms to the biosphere in general, encompassing the earth's surface and all living things (Okwo & Tartiyus, 2004). Biology according to Osuafor & Okonkwo, (2013) defined biology as the study of living organisms, divided into many specialized fields that cover the morphology, physiology, anatomy, behavior, origin and distribution. Biology as a science subject in the school curriculum is designed ultimately to produce educated individuals some of whom may take biological studies in their professional pursuits. Akindele, (2009) and Osuafor & Okonkwo (2013) described biology as a science of life, which plays a very important role in the life of every living thing. Considering its fundamental characteristics and importance, biology is today a

standard subject of instruction at all levels of our educational systems, from pre-primary to tertiary

Attitude plays a vital role in students' learning. Situ (2008) sees attitude is a major factor in learning science because students thinking or behaviour towards it determines the levels of their diligence and performance. Attitudes are developed in several ways. Some individual develops their attitudes by imitating other people consciously or unconsciously Osborne; Simon & Collins (2003). Usually people acquire the attitudes of those with whom they associated. Ahmad (2011) notes that, people develop attitudes from emotional experiences usually resulting in unfavorable attitudes. Similarly, a person's attitude towards another person and an object are as a result of information gathered on the subject and on the person. Attitude, once established, help to shape the

experiences the individual has with object, subject or person. Although attitude changes generally, people constantly form attitudes and modify old ones when they are exposed to new information and new experiences. Okebukola (2009), Observe that, the teachers have the opportunity of structuring lessons co-operatively, competitively or individualistically and the decisions teachers make in structuring lessons can influence student's interactions with others, knowledge and attitudes.

For most teachers, the interaction with other people is a major part of the school day. In the classroom, interaction with the students is an essential part of the learning process (Fisher & Cresswell, 1999; Coyle, Yanez and Verdu, 2010). Classroom interactions between teachers and students occur rapidly in a classroom. It is indicated that teachers in colleges of education may interact with not less than 150 different students daily. However, teachers are usually not aware or are not able to describe or remember what happens in these interactions with their students. Instances from interviewing teachers confirmed that teachers usually were not aware of how many questions they asked students and what kind of feedback they provided (Aderinoye, Ojokheta & Olojede, 2007).

Communication is a key ingredient in the recipe for effective teaching. The way a teacher communicates, or is perceived to communicate, is widely considered to be an important determinant of students' attitudes toward a class and a teacher (Nussbaum, 1992). When communication is effective, both the student and the teacher benefit. Communication makes learning easier, helps students achieve goals, increases opportunities for expanded learning, strengthens the connection between student and teacher, and creates an overall positive experience. Researchers have identified several types of communication that are associated with perceptions of effective teaching (Nussbaum, 1992; Pascarella & Terenzini, 1991). The way teachers behave, interact with students, their expectations of

the students' outcome and achievement have an impact on the child and the way the child will learn. Hyde and Jaffee (1998) believe that the school environment in general and teachers' characteristics in particular make significant contribution to academic performance of the student. Teachers play a very important role on a child's development from kindergarten onwards. Their contribution to the academic performance of the students too is influential. Teacher-related issues that influence academic performance include attitude, qualification, experience, availability and accessibility of the teachers.

Classroom management is one of the important variables of the learning and teaching process. Beside issues on discipline, the teaching process involves variables such as planning the learning activities, organizing physical order of the classroom, preparing learning materials, using time, keeping general order, among others (Chou, Block & Jesness, 2012). Learning environments have been studied with a view to identifying characteristics of the environment that are associated with enhancing students' academic performance. Classroom environment refers to the relationship between teachers and their students or among students, school environment pertains to a teacher's relationship with other teachers, members of staff and the college administration (Lee, Fraser and Fisher, 2003; Digregorio & Sobel-lojeski, 2009).

Studies on learning environment have shown that interpersonal behaviour is one of the characteristics related to student learning outcomes (Glover, Miller, Alveris and Door, 2007). This paper assessed the perceived Attitudes and Communication Pattern of Biology Teachers in Federal College of Education, Zaria, Kaduna State, from the View Point of the Students.

Theoretical Framework Theoretical Framework

The study was based on Vygotsky's theory of social constructivism development. The theory states

that the social interaction precedes development and that consciousness and cognition is the end product of socialization and social behaviour. The theory focuses on connections between people and social cultural context in which they act and interact in shared experience.

Statement of the Problem

In the last two decades, studies about science students' outcomes focused primarily on educational objectives in the cognitive domain. However, in recent times, attention has been shifted to outcomes in the affective domain. She and Fisher (2002) reported that affective outcomes of the education are at as important as cognitive outcomes and acknowledgement of the importance of affective outcomes is reflected in their increasing emphasis in curricula.

Associations between student cognitive and affective outcomes and the learning environment have been found when classroom environment perceptions have been used as predictor variables.

The Teacher education system in Nigeria has long been characterized as extremely examination oriented. The aim of education is not seen as expanding the learner's mind and developing the learner's intellectual potential. Rather, it is seen as achieving high marks, passing examinations, gaining a tertiary education, and obtaining a professional position with the highest possible salary. Although past studies have examined associations between student's outcomes and student perceptions of the learning environment in science class (Fraser, 1994), the present study is distinctive in that, it assessed student perceptions of two distinct aspects of learning environments (namely, interpersonal teacher behavior and the communication pattern). Also, it examined student outcomes in two distinct areas—student attitudes towards biology lessons and examination system of the teacher.

Objectives of the Study

The objectives of the study are to:

- i. Determine the attitude of biology teachers in relation to their students
- ii. Examine the communication pattern of biology teachers to their students.

Research Questions

- i. What is the attitude of biology teachers when relating to their students?
- ii. What communication pattern exists between biology teachers and their students?

MATERIALS AND METHODS

The research design was a descriptive survey design. The population of the study consisted of all biology students who registered for 2015/2016 session in the Department of Biology, Federal College of Education, Zaria. The total number of 2575 students formed the population of the study. Out of this number, 200 biology students were sampled, according to Tuckman 1975.

The instrument was a self-structured Students Perceptions of Teacher Attitude Scale (SPTAS). It is a five-point Likert Attitude Scale designed to determine biology students' perceptions of their biology teacher, biology lessons and examination system. It is divided into three segments comprising 33 items. The first segment contains 24 questions about the biology teacher, 6 questions about the examination system of their biology teachers in the second segment, while the third segment contains 3 questions about their biology lessons. The responses to the statements ranged from Strongly Disagree to Strongly Agree.

The Researcher constructed the survey instrument. The expert opinion of two educational evaluators from the Department of Science Education, Ahmadu Bello University, Zaria, were used to validate the instrument. The Cronbach's alpha reliability for the

instrument was 0.867. The survey instrument was administered to the student sample.

Data collected was analysed using percentage frequency distribution table and the mean scores of the students.

RESULTS AND DISCUSSION

The results are presented in Tables 1, 2 and 3.

Table 1: Student Perceptions of Biology Teachers’ Attitudes and Communication Pattern in Federal College of Education, Zaria.

| S/N | STATEMENTS | SD | D | U | A | SA |
|-----|---|------|------|--------------|------|------|
| | About Biology Teachers: | | | | | |
| 1 | Has a great knowledge of Biology | 8.5 | 6.7 | 10.2 | 24.4 | 50.2 |
| 2 | Teaches clearly and comprehensively. | 7.8 | 7.6 | 11.4 | 24.7 | 48.5 |
| 3 | Encourages students to participate in the lesson | 12.1 | 9.5 | 13.8 | 25.3 | 39.3 |
| 4 | Allows us to criticize him/her | 10.0 | 7.7 | 14.1 | 26.3 | 41.9 |
| 5 | Knows how to attract our attention in the class | 16.2 | 11.7 | 19.9 | 19.1 | 33.1 |
| 6 | Encourages us to research and study notes | 10.6 | 10.7 | 16.8 | 30.9 | 30.9 |
| 7 | Keeps his/her words about the lesson | 6.3 | 7.3 | 12.2 | 26.0 | 48.1 |
| 8 | Loves teaching us | 6.1 | 5.3 | 12.4 | 20.1 | 56.0 |
| 9 | Inform us on innovations in learning | 7.2 | 8.1 | 16.4 | 32.5 | 35.7 |
| 10 | Wants us to be active during the lesson | 3.9 | 4.1 | 10.2 | 21.5 | 60.3 |
| 11 | Encourages us to study for exams | 22.4 | 13.5 | 20.4 | 21.2 | 22.5 |
| 12 | I don’t like his/her teaching methods | 41.6 | 16.4 | 13.2 | 11.9 | 17.0 |
| 13 | Warns against unruly behaviours in class | 5.0 | 6.4 | 5.4 | 20.4 | 62.8 |
| 14 | Never warns the student. | 64.3 | 12.5 | 11.1 | 5.4 | 6.7 |
| 15 | Wants us to keep silence during the lesson | 3.3 | 3.1 | 7.8 | 23.3 | 62.5 |
| 16 | Controls what and how we learn | 12.7 | 8.7 | 16.6 | 26.3 | 35.7 |
| 17 | Doesn’t mind if assignments come in late | 47.8 | 17.4 | 18.1 | 5.0 | 11.7 |
| 18 | Doesn’t rebuke students in order not to hurt their feelings | 30.1 | 11.2 | 14.8 | 15.1 | 28.8 |
| | Doesn’t make preparation for lessons | | | | | |
| 19 | Makes an effort to explain causes of his decisions and | 60.1 | 10.3 | 10.8 | 6.5 | 12.3 |
| 20 | rules | 9.1 | 6.2 | 20.2 | 24.7 | 39.9 |
| | Doesn’t accept apologies for student’s lateness. | | | | | |
| 21 | To him/her it is better students’ to be emotionally good | 44.9 | 16.3 | 13.8 | 7.6 | 17.4 |
| 22 | than the classroom control. | 18.7 | 10.9 | 32.0 | 17.1 | 21.4 |
| | Students know that if they’ve an important problem they | | | | | |
| 23 | can stop the lesson. | 19.9 | 9.6 | 19.7 | 20.0 | 30.8 |
| 24 | Approves whenever students want the class stopped | 35.6 | 13.6 | 14.7 | 16.0 | 20.0 |
| | Aggregate mean score | | | 29.82 | | |

According to 74.6 % of the respondents, they think that their biology teachers have great biology knowledge. 73.2% of the respondents think that their teacher teaches clearly and comprehensively. 74.1% of

the students informed that teachers keep their words about the lesson. 76.1% of the respondents felt that teachers love to teach biology. 81.8% of the respondents felt that teacher wants them to be active

during the lesson. 83.2% of the students indicated that teachers prefer to warn the students acting unruly during lessons. 85.8% of the students felt that teachers want them to keep silence during the lesson. 70.4% of the respondents felt that their teacher prepares for lessons. 68.2 % of the students felt that their teacher encourages them to deal with the lesson. 64.6 % of the students thinks that their teachers know how to attract students' attention.

According to the survey, 61.8 % of the respondents felt that teacher encourages them to research and study more about biology. In the area of

honesty, In the area of innovations in biology, 68.2% of the students indicated that biology teachers try to inform them about the innovations in biology. But only 62% of the students felt that teachers control what and how they learned. 65.2% of the respondents pointed that teacher minds if one of the students did his/her homework late. 64.6% of the students thinks that teacher makes an effort for explaining reasons of his decisions and rules. 61.2% of the respondents indicated that their teacher accepts apologize of the student who is late.

Table 2: Students' Perceptions of Biology Teachers' Attitudes and Communication Pattern in Examination System in Federal College of Education, Zaria

| S/N | STATEMENTS | SD | D | U | A | SA |
|-----|--|--------------|------|------|------|------|
| | About Examination system: | | | | | |
| 25 | His/her exam questions are a part of the course | 7.5 | 5.5 | 10.4 | 19.6 | 57.4 |
| 26 | His/her exam questions have been prepared carefully. | 7.6 | 7.5 | 13.7 | 25.6 | 45.6 |
| 27 | Scores of the exam can be guessed before the results come out. Exam questions have been prepared carefully. | 23.1 | 10.7 | 17.8 | 25.7 | 22.8 |
| 28 | His/her exams are good means of evaluating knowledge | 25.7 | 14.4 | 20.8 | 22.1 | 17.0 |
| 29 | I approve his/her examination style | 10.0 | 10.3 | 16.5 | 24.9 | 38.3 |
| | | 28.7 | 12.3 | 12.9 | 18.4 | 27.7 |
| | Aggregate mean score | 25.75 | | | | |

About the examination system of the teachers, 77% of the respondents stated that examination questions are a part of their education. 71.1% of the students thinks that their exam questions

have been prepared carefully. 63.2% of the respondents think that their exams are good means in order to evaluate their knowledge level.

Table 3: Student Perceptions of Biology Teachers Attitudes and Communication Pattern in Biology Lessons in Federal College of Education, Zaria

| S/N | STATEMENTS | SD | D | U | A | SA |
|-----|---|--------------|-----|------|------|------|
| | About Biology Lessons: | | | | | |
| 31 | Biology lessons hold important knowledge that I may have need of in future. | 11.8 | 7.6 | 17.6 | 21.4 | 41.6 |
| 32 | I take lessons important and study enough | 7.9 | 7.6 | 15.5 | 31.5 | 37.7 |
| 33 | I enjoy the contents of biology lessons | 14.1 | 8.5 | 14.2 | 24.7 | 38.5 |
| | Aggregate mean score | 23.67 | | | | |

In the area of the lesson as analysed in Table 3; 63.0% of the students thinks that their biology lesson holds important knowledge that they may have need in the future. 79.2% of the respondents stated that they took the lessons important and studied enough. In addition, 63.2% of the students stated that they enjoyed the contents of biology lesson.

DISCUSSION OF FINDINGS

The main purpose of this study was to determine the perceived attitude and communication pattern of biology teachers of FCE Zaria. This research is significant in view of the unprecedented calls for new ways biology teaching and learning which promotes student's active participation in the teaching and learning process (Boaler 2009; Willis 2010). In addition to this, the research is significant in the sense that very little is known about students' perceptions of their teachers' teaching. This study doesn't aim to criticize teachers for making mistakes, but rather provide a discussion frame of communication related problems in order to improve the subject knowledge and teacher training programs.

Students' responses indicate that attitudes, communication pattern and examination styles of the biology teachers in FCE, Zaria are generally between normal and acceptable limits, it has seen that more than 81% of the respondents' state that teacher wants them to be active and to maintain silence during the lesson. This indicates nearly all of the teachers have a student-control ideology and inviting students to involve in learning activities and also 74.6-84% of the students agreed that their teacher; has a great biology knowledge, teaches clearly and comprehensively, keeps his/her word about the lesson, loves teaching them, wants them to be active during the lesson, warns them if necessary, wants them to keep silence during the lesson, makes preparation for the lesson

The results established that the kind of perception that students' hold varies. That is as much as the role of the teacher in the teaching-learning

process can not be underestimated; the study revealed that most of the respondents perceive their teacher as the custodian of knowledge. For example, the study revealed that the students' learning is highly influenced by the actions and inactions of the teacher as the teacher controls the students learning experiences by telling them what to do and which method to use. However, the study also revealed that in some cases the teacher employs a student-centred approach where students are given the chance to explore and develop new knowledge. This was consistent with students' perceptions of their learning as their learning experiences were characterized by both active and passive learning experiences. The recognized benefits of combining active and passive learning strategies is that they help students to structure their learning by following the teacher's instructions and also take responsibility for their own learning by actively participating in the teaching-learning process (Lim 2007). These learning skills agree with those described by Mathews (1997) as necessary to promote students' learning, as there are still some concepts that students cannot learn alone and which require the help of a knowledgeable adult. In general, students' perceptions of their learning go beyond the principle of constructivism, as they see the teacher's role as more than a facilitator and guidance from the teacher cannot be underestimated or ignored completely. The result was in line with Ahmed and Aziz (2009) who opined that most students have a positive attitude toward their teachers' teaching and that their teachers' teaching methods have a direct impact on their learning experiences.

It is reported, by the 50-70% of the students, that the teacher encourages them to contribute lesson and research and study biology, knows how to attract their attention to the lesson, tries to inform them about the latest improvements of biology; observes what and how they learned, minds if one did homework late, accepts the apologize of one who is late. They also think that they like their teacher's teaching methods and they can break the

lesson if they have an important problem. It can thus be deduced that teachers want their student to know that they can easily succeed in biology if they study enough, know the appropriate ways of how to attract students' attention to the lesson without using negative ways such as fear and sarcasm, are interested innovations in biology and make effort to inform their students. In addition, the teachers get feedback and control how and what students learns, have some rules and want students to obey their lesson rule such as doing homework on time, accepting apologizes of one who is late indicates teachers are not always prescriptive and behaves respectfully to their students. Students approve their teachers' teaching methods and think that they have an understanding and friendly teacher so they could stop the lesson if they have valid problems.

But less than 50% of the students feel that teacher; encourages them about the exams, doesn't rebukes students in order not to hurt their feelings, doesn't approve whenever students want to stop the lesson. These indicate that some of the teachers: may use exams as a threat means, rebukes students in order to keep the general order of lesson, do not think that it's better students to be emotionally good than classroom control. These indicate that some of the teachers: don't encourage their students towards exams enough or may use exams as a threat, use sarcasm and humiliation and doesn't mind if he or she could hurt student's feelings.

When student perceptions about biology examination system reviewed, it was seen more than 70% of the students think that exam questions are a part of their education besides having been prepared carefully. In addition, student perception about the examination system is generally approved.

When student answers about the biology lesson reviewed, more than 64% of the respondents think that biology lesson holds important knowledge that they may have need in the future, and nearly 70% of the students' state that they took the lesson important and studied enough and more than 63% of

the respondents' state that they enjoy the contents of biology lesson.

Now, one may ask; what are the causes of different percent of the answer given to each statement? This may be because the answer of this question for each statement is multidimensional and different research subjects. Here, it is imperative to mention some of the possible reasons of deviation differences. Unfortunately, studying the characteristic of effective teachers will not give us all the elements necessary to understand teacher misbehavior. As an analogy, it is not enough to study the characteristics of non-abused children when dealing with the abused ones (Sava, 2002). It is also difficult to distinguish if a teacher's attitude towards punishment reflects cultural norms or if it is a personal attribute. The communication that occurs within schools is crucial in shaping the social reality that teachers' experience.

In addition, perceptions about their schools heavily influences their attitudes and, in turn, their behaviors. Because school excellence is directly related to what teachers think and do, effective communication is that the heart of creating and maintaining the effective school, (Rafferty, 2003). As expected, teachers' work conditions, assessed by their level of job satisfaction, affect teacher-student interaction. Hence higher level of job satisfaction leads to a better teacher morale, an aspect that is positively perceived by students. Also, the school climate indirectly affects the student teacher interaction due to teachers' level of burnout (Sava, 2002).

On the other hand, we should consider that teachers, stay longer with their students in a school day, are not only interested if students learned the subject but also interested all personal characteristics of their students. For this reason, they observe their students' house conditions, body, mental health and outside activities. However, teachers teaching a certain lesson interest if students learned the subject more than students' personalities.

We should highlight the fact that teacher-student interaction is not only dimension of teacher

effectiveness. This concept is multidimensional and involves organization, workload/difficulty, expected/fairness of grading, instructor knowledge, and perceiving learning. However, the quality of teacher-student interaction (teacher liking) has a very strong influence on the overall score when students evaluate their teachers (Marks, 2000).

Teacher effectiveness can be obtained both positive and negative control. The latter will negatively affect the student and will lead to school inactivity, apathy, lack of interest towards school matters, and behavior disorders. The use of fear as a motivator promotes either defensive behaviors or danger control process. Both force students to become motivated to learn in order to control their fear. Neither way represents the best approach when compared to positive control and co-operative attitudes towards children (Witte, 1998; Sava, 2002). The findings also provide some useful information for biology teachers' and challenges them to be proactive in promoting a classroom environment free from intimidation and fear to motivate more students to be actively involved in teaching-learning process.

CONCLUSION

Teachers are pivotal to student perceptions of learning, inhibiting or facilitating student learning. It is seen that some of the qualities that lead to effective relationships are positive affection, warm attitude, tact of teaching, teacher immediacy and teacher prowess, assertiveness and responsiveness, and low differential treatment. Lack of any of these traits may negatively influence teacher-student interactions. Teachers also need good communication skills to further their careers in education. Without good communication skills, teachers disable the learning process as well as their own career mobility.

It is probably unrealistic to think that negative control can be totally avoided. In fact, everybody engages in these kinds of behaviors occasionally. However, we should limit such control since its use often teaches aggression, causes more

physical responses, produces only temporary effects, and determines negative emotional conditioning Beauchamp, Kennewell, Tanner, and Jones (2010)

RECOMMENDATIONS

The following recommendations were made for the study:

1. The biology teacher needs to develop more friendly ways of attracting the attention of students in the class, bearing in mind the tilt of today's teaching methods to be more student-centered.
2. Students' evaluation of their teachers teaching should be considered as one of the main tools for evaluating teachers teaching and effectiveness.
3. Students' should be enlightened on how best to rate and evaluate their teachers' teaching practices and effectiveness.
4. Teachers' should conduct regular evaluation of their teaching by asking their students to rate and evaluate their teaching practices

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