

# JUNIOR SECONDARY SCHOOL STUDENTS' EVALUATION OF THEIR BASIC SCIENCE TEACHERS' INSTRUCTIONAL EFFECTIVENESS IN AWKA SOUTH

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## **Abstract**

*The study investigated junior secondary school students' evaluation of their Basic Science teachers' instructional effectiveness. Three research questions guided the study. The study made use of the survey research design. The research was done in Awka South Local Government Area of Anambra State. The sample of the study constituted of 300 J.S.S. 2 students. The instrument titled Teachers Instructional Effectiveness Evaluation Questionnaire (TIEEQ), adapted from the NUC rubric for students' evaluation of teachers in the tertiary institutions was used for data collection. A reliability coefficient of 0.85 using Cronbach alpha was obtained for the instrument. The Mean was used in answering the research questions. The major findings from the study showed that students were in agreement that their Basic Science teachers were effective in the areas of lesson organization and planning, teacher-student interaction and the use of instructional materials which were covered by the study. It was recommended among other things that school authorities should use students' evaluation of teaching for evaluating teachers' teaching effectiveness.*

**Keywords:** Basic Science, teachers' effectiveness, students' evaluation,

## **Introduction**

Formal education in Nigeria was introduced by the foreign missionaries in 1842 (Omiko, 2016). The curriculum at this period emphasized majorly on three things; arithmetic, writing and reading. This system of formal education proceeded further into pre-primary, primary, post-primary and the tertiary levels. High quality teaching at each of these levels has been widely acknowledged to be the most important factor influencing sustainable education. The post-primary level, also known as the secondary level is the one in which students choose subjects that would help build their career path. The secondary education is considered the pivot around which the development of a nation's economy revolves; it is the engine room that provides input resources into the nation's economy and tertiary education system (Omoniyi, 2014). A focus on standards in secondary schools is timing and a wise attempt in identifying the direction at which the nation is heading, and determining whether a nation is on course towards realizing her dreams in running secondary schools, or whether she needs to return to the drawing board. When one gets it right at the secondary education level, they are likely to get it right at the tertiary level; and part

of the team that will not proceed to the tertiary level can become useful and productive members of the society (Joshua, 2004). The secondary level of education is basically divided into the junior secondary school (J.S.S) level and the senior secondary school (S.S.S) level, and it is at the J.S.S level that Basic Science is taught as a subject.

Basic Science according to the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2001) is defined as an approach to the teaching of science which involves the expression and the presentation of science concepts and principles as a fundamental unit of scientific thought, in order to avoid undue stress in the distinction between the various scientific fields. Omiko (2015) defined Basic Science as the study which involves the study of elementary biology, anatomy, earth/solar system, ecology, genetics, chemistry and physics as a single science subject in the Junior Secondary School. It offers the basic training in scientific skills required for human survival, sustainable development and societal transformation (FRN, 2008). Basic science studies also involve bringing together traditionally separate science subjects so that students grasp a more authentic understanding of science.

The change from the 6-3-3-4 system of education introduced in Nigeria in 1980 by the Federal Government to the 9-3-4 system introduced in the year 2008 and the review of the 9-3-4 system of education done in the year 2012 by the Federal Government saw the change in the name and scope of Integrated Science to Basic Science and then to Basic Science and Technology. According to the Nigerian Educational Research and Development Council (NERDC, 2012), the objectives of Basic Science and Technology should be directed at enabling students who are exposed in it, to acquire the following:

1. Develop interest in science and technology
2. Acquire basic knowledge and skills in science and technology
3. Apply scientific and technological knowledge and skills to contemporary societal needs
4. Take advantage of the numerous career opportunities provided by Science and technology
5. Become prepared for further studies in science and technology
6. Avoid drug abuse and related vices and
7. Be safety and security conscious.

To achieve these objectives, effectiveness in the instructional delivery of Basic Science lessons is very crucial. To ensure effective teaching in general and particularly in Basic Science, teachers' instructional delivery are often reviewed through a process of evaluation. Ifamuyiwa (2006) sees evaluation as the process of gathering valuable information on attainment of educational objectives, analyzing and fashioning those information to aid judgement on the effectiveness of teaching

or an educational programme. The process of evaluation involves two dimensions; gathering of data and using the gathered data to make judgements or take decisions according to specific standards. Evaluation according to Moyinoluwa (2014) can be both formative (occurring during the process of teaching) and summative (occurring at the end of the implementation of an instructional programme). Evaluation of teaching can be done by the teachers themselves, and it is called self-evaluation, or by their colleagues, which is called peer evaluation or by their superiors, which is called hierarchical evaluation or better still, it can be done by their subordinates which in this case are the students and this is called students' evaluation. Literature according to Vevere and Kozlins (2011) have shown the importance of students' evaluation of their teachers' instructional practices, as an important factor that causes the teachers to improve on their teaching.

Students' evaluation of their teachers' instructional effectiveness, is one among the approaches of teacher evaluation. This approach implies that students are taught by a teacher and are made to express their opinions and feelings concerning the effectiveness of the teacher's instructional processes and behaviours over a period of time, and the extent to which they have benefitted from those processes/behaviours. The use of students' ratings in teacher evaluation is predicated according to Joshua (2004) on the following assumptions;

1. the student knows when they have been motivated to learn
2. it is the student whose behaviour(s) is to be changed
3. student ratings constitute feedback to the teacher
4. student recognition may promote or motivate good teaching

Paulsene (2002) opined that students' evaluation of a teacher's teaching plays dominant role in the operational definition of what constitute effective teaching as the students themselves are seen as being in a better position than any significant others to say how they have been affected by any teaching process. Research done by Socha (2009) has also proven that students' evaluation of their teachers' instructional effectiveness is a valid and a reliable source of data for teacher evaluation. It is important for students to regularly evaluate their teachers' instructional practices as it is a form of feedback to the school authority to know how to promote or to judge which teacher is in need of requisite training and whether they should be retrained.

The rubric for students' evaluation of teachers developed by the Nigerian University Commission (NUC) to be used in Nigerian universities covered the following aspects: good organization and planning, teacher-student interaction, clarity, effective communication, grading, flexibility of approaches towards teaching, rating of supplementary/instructional materials, teachers' supportive attitude, and overall ratings. This study will however concentrate on teachers' lesson organization and planning, teacher-student interaction and the use of instructional materials since

according to Cashin (2003) students are in a better position to evaluate their teachers in these aspects. Though students' evaluation of teaching effectiveness is being used as an important source of data for teacher evaluation by many nations of the world, Nigeria is only introducing its usage in her institutions of higher learning, leaving out the foundational education levels of which the secondary school level is part of. The study sought to determine junior secondary school students' evaluation of their Basic Science teachers' instructional effectiveness in Awka South Local Government Area of Anambra State. The study specifically sought to determine:

1. the junior secondary school students' mean evaluation scores of their Basic Science teachers' lesson organization and planning.
2. the junior secondary school students' mean evaluation scores of their Basic Science teacher-student interaction.
3. the junior secondary school students' mean evaluation scores of their Basic Science teachers' use of instructional materials.

### **Research Questions**

Three research questions guided the study:

1. What are the Junior Secondary School students' mean evaluation scores of their Basic Science teachers' lesson organization and planning?
2. What are the Junior Secondary School students' mean evaluation scores of their Basic Science teacher-student interaction?
3. What are the Junior Secondary School students' mean evaluation score of their Basic Science teachers' use of instructional materials?

### **Methodology**

The study adopted the survey research design. This type of design (Anikweze, 2013) involves a detailed and critical examination of a topic or situation with a view of finding out what is and how it is. The target population of the study comprised of all the 2615 J.S.S. 2 students in the 15 government owned co-educational secondary schools in Awka South LGA of Anambra State. The choice of J.S.S. 2 was based on the fact that the students have been exposed to learning Basic Science at least for 1 year. They are expected to have attained certain level of intellectual ability to be able to answer raised questions on teachers' instructional effectiveness. Simple random sampling technique was used in constituting a sample of 300 J.S.S. 2 students.

The instrument titled "Teachers' Instructional Effectiveness Evaluation Questionnaire (TIEEQ)" adapted from the NUC rubric for students' evaluation of teachers was used for collecting data. The TIEEQ was developed with a four-point rating scale of strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD). The instrument was validated and found reliable at a reliability index of 0.85 using Cronbach alpha technique. Copies of the instrument were administered to the

respondents with the help of three research assistants. In answering the research questions, any mean with cut-off point of 2.50 and above was taken to be agreed while any mean less than 2.50 were taken as disagreed.

### Results and Discussion

The results of the research based on the research questions are summarized thus.

**Research Question One:** What are the junior secondary school students' mean evaluation scores of their Basic Science teachers' lesson organization and planning?

**Table 1: Mean evaluation scores of junior secondary school students on their Basic Science teachers' lesson organization and planning.**

| S/N | ITEMS                                                                       | N   | MEAN | REMARK |
|-----|-----------------------------------------------------------------------------|-----|------|--------|
|     | My Basic Science teacher;                                                   |     |      |        |
| 1   | Plans each class carefully                                                  | 300 | 3.60 | Agree  |
| 2   | Organizes each lesson well enough to ensure maximum learning                | 300 | 3.59 | Agree  |
| 3   | Is time conscious and does not waste teaching time on less important things | 300 | 3.40 | Agree  |
| 4   | Delivers instruction in a way as to carry slow learners along               | 300 | 3.34 | Agree  |
| 5   | Provides enough time for students to take notes                             | 300 | 3.30 | Agree  |

N= Number of respondents

The results of research question one as presented in table 1 indicates that the students agreed that their Basic Science teacher plans each class carefully, organizes each lesson well enough to ensure maximum learning, is time conscious and does not waste teaching time on less important things, delivers instruction in a way as to carry slow learners along and provides enough time for students to take notes. In other words, these students agreed that their Basic Science teacher's lesson organization and planning was good and it encouraged them to do better in class.

**Research Question Two:** What are the junior secondary school students' mean evaluation scores of their Basic Science teacher-student interaction?

**Table 2: Mean evaluation scores of junior secondary school students on their Basic Science teacher-student interaction.**

| S/N | ITEMS                                       | N   | MEAN | REMARK |
|-----|---------------------------------------------|-----|------|--------|
|     | My Basic Science teacher;                   |     |      |        |
| 1   | Encourages the students to ask questions    | 300 | 3.67 | Agree  |
| 2   | Treats students with respect and regard for | 300 | 3.21 | Agree  |

|   |                                                               |     |      |       |
|---|---------------------------------------------------------------|-----|------|-------|
| 3 | dignity<br>Seems willing to offer individual help to students | 300 | 3.05 | Agree |
| 4 | Motivates us to work hard and achieve                         | 300 | 3.58 | Agree |
| 5 | Encourages the students to contribute in the class            | 300 | 3.13 | Agree |

N= Number of respondents

The result of research question two as shown in table 2 shows that there was an agreement by the students on their Basic Science teacher-student interaction in the area of encouraging them to ask questions, treating them with respect and regard for dignity, willingness in offering individual help to students, motivating them to work hard and achieve and encouraging them to contribute in classroom discussion and all these in overall help increase their interest in the subject.

**Research Question Three:** What are the junior secondary school students' mean evaluation score of their Basic Science teachers' use of instructional materials?

**Table 3: Mean evaluation scores of junior secondary school students on their Basic Science teachers' use of instructional materials.**

| S/N | ITEMS                                                                        | N   | MEAN | REMARK   |
|-----|------------------------------------------------------------------------------|-----|------|----------|
|     | My Basic Science teacher;                                                    |     |      |          |
| 1   | Uses recommended textbooks for teaching                                      | 300 | 2.89 | Agree    |
| 2   | Uses charts and diagrams to explain topics to us                             | 300 | 3.14 | Agree    |
| 3   | Uses models in explaining concepts to us                                     | 300 | 2.56 | Agree    |
| 4   | Uses real life objects such as oranges, pawpaw to teach life-oriented topics | 300 | 2.22 | Disagree |
| 5   | Uses durable instructional materials that are re-useable                     | 300 | 2.65 | Agree    |

N= Number of respondents

The result obtained from research question three as seen in table 5 indicates that the students used for the study, agreed that their Basic Science teachers use recommended textbooks, improvised and durable instructional materials that guarantees effective learning but disagreed on their Basic Science teachers' use of real life objects in teaching life-oriented concepts.

### Conclusion

The study thus concludes that the Basic Science teachers' instructional delivery is effective, commendable and positive as far as the students are concerned especially in the aspect of the Basic Science teachers' lesson organization and planning, teacher-student interaction and the use of instructional materials.

### **Recommendations**

The following recommendations were made based on the findings from the study;

1. Teachers should keep up the good work as the study has shown that their teaching methods and classroom behaviours influence the students positively.
2. Lessons should be made more fascinating since the students were of the opinion that the stimuli provided by the teachers prompt positive responses from the students.
3. Teachers should use life objects in teaching the students life-oriented concepts for better and easier comprehension.
4. Secondary school authorities should be serious in the use of students' evaluation in evaluating teachers' teaching.
5. Interpretations of scores from students' evaluation of teaching should serve as one of the criteria to guide employers of labour in the secondary schools in deciding whether or not a person's employment would be confirmed.
6. In order to avoid abuse of and cruelty associated with students' evaluation of teaching, the feedback obtained would be better used initially for formative purposes which would benefit both the students and their teachers especially in the area of knowledge transfer.

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