

# COMPETENCIES REQUIRED BY THE TEACHERS FOR EFFECTIVE TEACHING OF BASIC SCIENCES IN OHAUKWU LOCAL GOVERNMENT AREA, EBONYI STATE OF NIGERIA

Enekwe Chukwudi Benedict<sup>1</sup> and Onwe Chukwuemeka Eze<sup>2</sup>.

<sup>1, 2</sup> Department of Integrated Science Ebonyi State College of Education, Ikwo, Ebonyi state, Nigeria. Email: : [enekwebenedict@yahoo.com](mailto:enekwebenedict@yahoo.com).

## ABSTRACT

The purpose of this study was to evaluate the competency of teachers required for effective teaching of basic science in Ohaukwu local Government area of Ebonyi State. A descriptive survey design was used. Out of the total population of two hundred and twenty (220) Basic Science teachers in the state, stratified and proportionate sampling technique was adopted to select. This constitutes about 60% of the total population in the state. The sample was drawn on gender basis to involve 60 females and 160 male Basic Science teachers. The validity of the instrument was established through face validation by three experts from relevant fields. The data that was collected from the respondents and analyzed using mean and standard deviation to answer the research questions while T-test statistics was used to test the null hypothesis at  $P < 0.05$  level of response options of the questionnaire items. Any competency items with a mean of 2.50 or above was considered as required while anyone with a mean below 2.50 was considered as not required by Basic Science teachers in effective teaching of students in junior secondary schools in Ebonyi State. Findings showed that the respondents agreed that all the ten competency items in the use of instructional methods and techniques are required by Basic Science teachers for effective instructional delivery in Basic Science. Based on the findings that emanated from this study, recommendations and suggestions are made for further research study.

## Introduction:

### BACKGROUND OF THE STUDY

Science is the study of the nature, the living and non-living things, their Forces of interactions, constitution and their behavior in our different environment (Blurfit, 2007). Application of the study of science makes life easier, gives us new discovery. When applied Science results to technology its enables the society to live in comfort and advance in technology. The successful study of science at all levels is based on the background of the learner especially basic science at junior secondary school level.

Basic science according to Ugwu and Ugwu (2006) is the study of living and non-living things that will be able the junior secondary school students well-grounded to study the core Science subjects (Biology, Physics and chemistry) at the senior secondary school level. Considering the relevance of the study of basic science, it is being classified among the core subjects to be taught to students in junior secondary schools by federal ministry of education (FME, 2004). This has further resulted in the call by West African Examination Council (WAEC 2010) for government to setup a

committee to look into the study and teaching of basic science by teachers at Junior Secondary School. The effectiveness of teaching the subjects at this level is one of the major concerns of the committee and the progress of the effort to improve the teaching of the subject depends on the quality of the teacher.

A teacher is a person who impact knowledge, skills, and attitudes to students in school. Unachukwu (2004) defined a teacher as a person who attempts to help someone acquire or change some knowledge, skills, attitudes, ideas or appreciation. Obnewa (2002) stated that a teacher is someone who has undergone the necessary and recommended training in a teacher preparatory programs and is charged with the full responsibility of managing the classroom in such a way as to enhance the learning behavior of the students. Wikipedia (2010) described a teacher as a confident, a motivator, a coach, an actor a leader and most importantly an individual that sparks intellect and encourages students or learner to pursue knowledge. Irrespective of the gender (male or female), Obnewa stated further that the following human qualities would make a teacher stands among other professionals; that the teacher must be: Physically fit, A democratic leader, Learner to take right decisions at all times, Preserved at all times, Committed to his or her job, An innovator, always exercise self-control, Sincere at all times, A master of the subject matter irrespective of gender (male or female).

In the context of this study, the teacher of basic science is an individual male or female person who is professionally trained in a teacher preparatory program with bias in basic science to impact knowledge, skills and right attitudes to the students in relation to the subject. Moreover, teacher conceptions of basic science ( Oladipe and Oladipe, 2009) together with gender influences often times play important roles on classroom instruction.

Gender according to International Communication Union (ITU, 2010) refers to the social attributes and opportunities associated with male or female and the relationship between women and men as well as boys and girls. Department for International Development (DFID,,2010) defined gender as socially constructed roles of and relations between males and females. Gender determines what is expected, allowed and valued in a man or woman in a given context (ITU, 2010), in relations to skills and competencies required in in a profession or careers. Therefore, for teacher of basic science irrespective of the gender, to effectively teach the subject to students with expected qualities as stated by Obnewa (2002), certain competencies are required by the teacher in teaching.

Competency in the view of Spencer and Spencer (2003) is a standardized requirement for an individual to properly perform a specific job. Encarta (2009) defined competency as ability to do something well, measured against standard especially ability acquired through experience or training. In the view of International Labour Organization (I'll, 2003) competency refers to the knowledge, capabilities, skills and behavior which someone exhibits in doing his job and which are factors in achieving the results pertinent of the teaching strategies. In the view of Olaitan (2003) to be competent means the individual has achieved the knowledge, skills, attitudes and judgment which he or she requires in order to perform successfully at a specified proficiency level in any given work. In the context of this study therefore, competency is the professional ability required by teachers of basic science for effective teaching of the subject to junior secondary school students.

According to Gbamanja (2002) having mastered the subject matter very well, the teacher must possess certain qualities, which are largely physical, psychological, emotional and intellectually competencies in order for the teacher to be effective. These qualities include: Good personality, professionalism, Ability to understand child psychology, Resource fullness and skills to improvise, Ability to observe and evaluate.

The truth that some of basic science teachers in Ebonyi State lack some competencies possessed in teaching basic science in secondary schools. In his view presidential address at the 24th Annual Conference of the Science Teachers Association of Nigeria (STAN, 2004), in Jos, Dr. S.T.Bajah gave a contextual appraisal of basic science in Nigeria and referred to the situation as a crisis in our classroom. According to him, the Science teacher who in the first lesson on basic science wrote boldly on the chalkboard "Basic science" began the crisis in the classroom. Superficially, one would think that this is crisis of words. The question is why many teachers would call the course basic science instead of basic science? The fact of the matter is that most teacher do not just know what exactly this basic science? Is all about, I would like to add that most of the problems arise as a result of the inappropriate training background of our Science teachers which is not quite adequate for teaching of basic science. A Curriculum program may have the right objectives and appropriate suggestions for practical work. But if the teacher does not apply the required methods to teach the course, then such malpractice soon defeats the objectives and skills, innovation, open ended experiment and individual ingenuity of students. Basic science is Science come alive, it is meant to unite all of us who have specialized disciplines in science. These means that any method applied in teaching basic science must strive to instill in the students' the practical utility and application of the knowledge in everyday life.

Admittedly, any child centered activity oriented Curriculum requires adequate financial expenditure in terms of purchases of working material and provision of adequate trained personnel. Obviously, one of the problems of teaching basic science in our schools stems from the inadequate of laboratory facilities. There is no doubt, that there would be some devoted basic science teachers in some schools, but in the midst of inadequate working material, they would have been frustrated in their efforts to do it. Basic science teaching in Nigeria is entrusted into the hands of those teachers majority of who are not qualified to teach the course. In this vein, the need for many professional people to be knowledgeable in several areas, the occurrence of problems that can be solved only be coordination of research in several specialties' and the demands of students, particularly non-science students for an understanding of the roles of science in modern society, have provided strong pressure for less specialization and the presentation of wider views of science which basic science can provide.

Several research findings confirming the continuous poor performance of students in basic science examination in the country Oludipe & Oludipe 2009; Areola, 2010). The situation in Ebonyi State is not an exemption. The reported cases of poor performance of students in basic science maybe due to perceived low competency of the teachers teaching the subject to the students (Areola,2010). If the competencies required by the teacher for effective teaching of basic science to students are identified, it will help to reveal areas of weakness of the teachers for possible retraining for improved teacher quality.

Therefore, this study aims at identifying the competencies required by teachers for effective teaching of basic science in junior secondary school students in Ebonyi State.

## STATEMENT OF THE PROBLEM

There has been growing concerns through the country about the discouraged state of the teaching and learning of basic science in junior secondary schools. Reports showed that in Nigeria, students' performance in basic science is generally poor in all the nine states used for a study with average performance of not up to 50% while it was below 40% for most schools selected for the study.

This situation arose mainly as a result of a failure within teaching. Learning context due to low competencies of the teachers to effectively manage and coordinate classroom instruction in impacting the required knowledge, skills and attitudes to students in basic science across the country.

Unfortunately, the case of Ebonyi State is not different as competencies of teaching basic science in junior secondary schools in the state is perceived to be low, hence this has serious negative implications for academic achievement of the students in basic science. The continuous poor achievement of students in basic science as witnessed in Ebonyi State has discouraged most of the students in choosing Science based career. Students confirmed that the poor performance of students in basic science among others has resulted into reduced enrollment of students in sciences.

Therefore, if the competency required by the teacher of basic science is investigated, it will reveal areas where the teachers are deficient in effective teaching. This will also help to make necessary efforts towards capacity building and retraining of the teachers for improved quality in teaching basic science to students in junior secondary school in Ebonyi State.

## AIM AND OBJECTIVES OF THE STUDY

The aim of this study is to examine the competencies required by teachers for teaching basic science in junior secondary schools in Ebonyi State.

Specific Objectives;

1. Determines the competencies required by basic science teachers in the knowledge of the subject matter
2. Investigate the competencies required by basic science teachers on instructional methods and techniques.
3. Determines the competencies required for effective classroom and laboratory management.

## SIGNIFICANCE OF THE STUDY

The significance of the study area is that currently Ebonyi state is one of the educationally disadvantaged state within the South East region of Nigeria.

Therefore, there is no gain saying the fact that the teacher of basic science in Ebonyi state are grossly inadequate equipped with instructional materials needed for effective teaching and learning

experience. This makes it possible to get the respondents that are actually experience the problem and they are the best people to obtain information concerning the problem.

The findings of this study will be beneficial to basic science teachers, students, Curriculum planners, educational administrations and Ebonyi state government. The findings of the study when implemented will be of benefit to basic science teachers because they will have the knowledge of some professional attitudes or competencies they are expected to possess to be able to teach effectively thereby improving their performance and facilitate teaching and learning abilities to enable the students excel in the subject.

The findings of the study will benefit the students in that if the attitudes or competencies required by teachers are identified and retraining given in such direction, it will help the students to gain more scientific skills from their teachers. Curriculum planner will greatly benefit from the findings of this study in the sense that identified areas where improvement in competency of basic science teachers are required will be used to Improve the curriculum at the teachers preparation level for improving competency of the teachers on graduation.

The findings of this study will benefit the ministry of education in the state by providing necessary information to inspectors and supervisors (educational administrators) about the competencies required by teachers of basic science to function well in their teaching profession. The government of Ebonyi state will benefit from the findings of the study in several ways. Socially, if the findings are implemented and teachers' competency improved while quality teaching is given to the students in basic science, it will help to increase the environment of students for science in senior secondary school class and high institution in the state.

This will in turn reduce crimes rates of youths, drug abuse, idleness and diligence among school age children in the state.

#### SCOPE OF THE STUDY

The study is delimited to determine the attitudes needed by teachers for effective teaching of basic science to junior secondary school students in Ebonyi State of Nigeria.

#### RESEARCH QUESTIONS

The following research questions guided the study:

1. What are the attitudes required by basic science teachers in the knowledge of the subject?
2. What are the attitudes required by basic science teachers on instructional methods and techniques?
3. What are the attitudes required for effective classroom and laboratory management?

## RESEARCH METHOD

This research method presents the procedure for carrying out the study under the following sub-headings design of the study, area of the study, population of the study, sample and sampling technique, instruction for data collection, reliability of the instrument, method of data collection and method of data analysis.

### DESIGN OF THE STUDY

The design of the study is descriptive method. According to Ali (2006) descriptive research design uses sample of an investigation to document, describe and explain what is in existence or none existence on the present status of phenomena being investigated. Survey research design is a very valuable tools for assessing opinions and information from representative group. Information gathered as reported by Eboh (2007) must be generalized to the whole population and thus a sample survey is useful for development and planning purposes.

### AREA OF THE STUDY

The study was carried out in Ebonyi State. The state is located in the South-East geopolitical zone of Nigeria with thirteen (13) administrative local government and three (3) Educational zones namely; Ebonyi North, Ebonyi Central, Ebonyi South Educational zones.

### POPULATION OF THE STUDY

The population of the study comprised two hundred and twenty (220) Basic Science teachers in the state. From available records, there are fifteen (15) Principals and five hundred and eleven (511) classroom Teachers in the education zone. Source: PPSMB, Ebonyi 200/2011

### SAMPLE AND SAMPLING TECHNIQUE

Out of the total population of two hundred and twenty (220) Basic Science teachers in the state, stratified and proportionate sampling technique will be adopted to select. One hundred (100) Teachers (male and female). This constitutes about 60% of the total population in the state. The sample was drawn on gender basis to involve 60 females and 160 male Basic Science teachers.

### INSTRUMENT FOR DATA COLLECTION

The instrument that will be used for data collection is competencies required by Teachers for effective teaching of Basic Science questionnaire. The questionnaire was divided into two sections; section one was made to seek for personal data of Basic Science teachers while section two was used to elicit information from teachers on their required competencies for effective teaching of the subject in junior secondary schools in Ebonyi State. Section two was divided into five sections. Section one- competencies required by Teachers in knowledge of subject matter, Section two: Competencies in the use of instructional methods/techniques, Section three: Competencies in

laboratory and classroom management, Section four: Competencies in effective teaching and Communication, Section five: Competencies in Students evaluation and records.

The questionnaire items for part two have a four- points response scale of:

Very highly required (VHR) = 4 Points

Highly Required (HR) = 3 Points

Seldom Required (SD) = 2 Points

Not Required (NR) = 1 Point

## VALIDATION OF THE INSTRUMENT

The instrument for this study was faced validated by three experts from the department of Science Education of the Faculty of Education, Ebonyi State College of education Ikwo in affiliation to Ebonyi State University Abakaliki. A copy of the instrument was given to each of the experts and was requested to read the items and help to correct any ambiguous or confusing statement or items. They were also requested to remove or add any missing items and help to arrange the items logically where such error is observed. The corrections or suggestions of the experts were incorporate to develop the final copy of the questionnaire for data collection.

## METHOD OF DATA COLLECTION

Data for the study was collected with the help of two research assistant that were hired and trained by the researchers making three enumerators with one covering two of the six randomly selected Educational zones in the state.

## METHOD OF DATA ANALYSIS

The data that were collected from the respondents and analyzed using mean and standard deviation to answer the research questions while T-test statistics will be used to test the null hypothesis at  $P < 0.05$  level of response options of the questionnaire items are as follows:

Highly Required HR=4

Averagely Required AR=3

Slightly Required SR =2

Not Required =1

The mean for the values was calculated thus  $4+3+2+1/4=10/4=2.50$

Any competency items with a mean of 2.50 or above was considered as required while anyone with a mean below 2.50 was considered as not required by Basic Science teachers in effective teaching of students in junior secondary schools in Ebonyi State.

## DATA PRESENTATION AND ANALYSIS

The data collected for this study was analyzed and presented in this chapter in line with the research questions.

RESEARCH QUESTION ONE: What are the competencies required by Basic Science teachers in knowledge of subject matter?

TABLE 1: Mean rating of the responses of Basic Science teachers on the competency required in knowledge of subject matter.

| S/N | ITEM STATEMENTS                                                                                                      | X    | SD    | REMARKS  |
|-----|----------------------------------------------------------------------------------------------------------------------|------|-------|----------|
| 1   | Ability to teach general aspects of basic science such as meaning, importance and different aspects of basic science | 3.40 | 0.696 | Required |
| 2   | Planning instruction in basic science                                                                                | 3.38 | 0.52  | Required |
| 3   | Organize instruction in basic science                                                                                | 3.34 | 0.655 | Required |
| 4   | Implement instruction in basic science                                                                               | 3.43 | 0.844 | Required |
| 5   | Evaluate instruction in basic science                                                                                | 3.46 | 0.673 | Required |
| 6   | Carryout simple experiment in basic science                                                                          | 3.45 | 0.672 | Required |
| 7   | Drawing conclusion from observation made in experiment                                                               | 3.52 | 0.674 | Required |
| 8   | Use appropriate teaching methods for instruction delivery                                                            | 3.66 | 0.619 | Required |
| 9   | Ability to invite resource persons to teach the students some important concepts in basic science                    | 3.46 | 0.731 | Required |
| 10  | Conduct an effective group discussion among the students                                                             | 3.45 | 0.672 | Required |

Data presented in table 1 above showed that the ten competency item had their mean values ranged from 3.34 to 3.62. These mean values were all above the cutoff points of 2.50. This indicated that

the respondents (basic science) agreed that all the ten items in the table are competencies required by the basic science Teachers in knowledge of the subject matter.

RESEARCH QUESTION TWO: What are the competency required by Basic Science teachers on competency required in the use of instructional methods and techniques?

TABLE 2:

Mean rating of the responses of Basic Science teachers on the competency required in the use of instructional methods and techniques

| S/N | ITEM STATEMENTS                                                          | X    | SD    | REMARKS  |
|-----|--------------------------------------------------------------------------|------|-------|----------|
| 1   | Actively involved students during classroom or laboratory instruction    | 3.36 | 0.644 | Required |
| 2   | Demonstrate problem solving which develops Students creativity           | 3.41 | 0.668 | Required |
| 3   | Ability to effectively improvise instructional material                  | 3.40 | 0.725 | Required |
| 4   | Praise Students for brilliant performance during instruction             | 3.06 | 0.932 | Required |
| 5   | Direct individual Students progress and performance consistently         | 3.43 | 0.685 | Required |
| 6   | Provide special instructions for the slow learners among the students    | 3.35 | 0.712 | Required |
| 7   | Arrange classroom or laboratory to accommodate instructional activities  | 3.51 | 0.732 | Required |
| 8   | Make effective use of classroom and laboratory for teaching and learning | 3.31 | 0.543 | Required |
| 9   | Allocate time effectively and realistically during instruction           | 3.39 | 0.638 | Required |
| 10  | Ensure adequate security of materials in the classroom or laboratory     | 3.07 | 0.832 | Required |

The data presented in table 2 above showed that all the ten competency items on the use of instructional methods and techniques had their mean values ranged from 3.06 to 3.66. These mean values were all above the cutoff points of 2.50. This indicated that the respondents ( basic science teacher) agreed that all the ten identified items in the table are competencies required by the basic science teacher in the use of instructional methods and techniques for effective teaching of basic science to junior secondary school students in Ebonyi State.

RESEARCH QUESTION THREE: What are the competencies required by Basic Science teachers in effective classroom and laboratory management?

TABLE 3: Mean rating of the responses of Basic Science teachers on competency required in effective classroom and laboratory management.

| S/N | ITEM STATEMENTS                                                                               | X    | SD    | REMARKS  |
|-----|-----------------------------------------------------------------------------------------------|------|-------|----------|
| 1   | Make good eyes contact with students when teaching                                            | 2.84 | 0.977 | Required |
| 2   | Teachers ability to communicate their knowledge and expertise during teaching and instruction | 3.01 | 0.734 | Required |
| 3   | Ability to ensure sense of humor when teaching is going on                                    | 3.34 | 0.670 | Required |
| 4   | Avoid the use of ambiguous language during teaching                                           | 3.17 | 0.753 | Required |
| 5   | Given answers to students questions politely                                                  | 3.55 | 0.557 | Required |
| 6   | Assess student's cognitive and affective performance periodically                             | 3.72 | 0.516 | Required |
| 7   | Assess the effectiveness of different teaching methods                                        | 3.35 | 0.716 | Required |
| 8   | Test students learning process periodically                                                   | 3.32 | 0.694 | Required |
| 9   | Employ varieties of evaluation methods and procedures e.g handwork, test, mock exam etc       | 3.57 | 0.670 | Required |
| 10  | Keep accurate records of students' academic performance                                       | 3.43 | 0.640 | Required |

Data presented in table 3 above revealed that all the ten competency items on classroom and laboratory management had their mean values ranged from 2.99 to 3.71. These mean values were all above the cutoff points of 2.50. This indicated that the respondents (basic science teacher) agreed that all the ten identified competency item is effective classroom and laboratory management are required by Basic Science teachers for effective teaching of junior secondary school students in Ebonyi State.

## SUMMARY OF FINDINGS

1. The Teachers of Basic Science required competencies in the knowledge of subject matter for effective teaching in junior secondary schools in Ebonyi State.
2. Basic Science teachers required competencies in the use of instructional methods and techniques for effective teaching of Basic Science.
3. Competencies in classroom and laboratory management are required by Basic Science teachers for effective teaching in the area.
4. The teacher of Basic Science required competencies for effective teaching and Communication
5. Basic Science teachers required competencies for effective Students evaluation and records in junior secondary Schools in Ebonyi State.

Data presented in table 3 above revealed that all the ten competency items on classroom and laboratory management had their mean values ranged from 2.99 to 3.71. These mean values were all above the cutoff points of 2.50. This indicated that the respondents (basic science teacher) agreed that all the ten identified competency item is effective classroom and laboratory management are required by Basic Science teachers for effective teaching of junior secondary school students in Ebonyi State.

## DISCUSSION

The research questions one deals with the competencies required by Basic Science teachers in knowledge of the subject matter. A teacher must be well grounded in the subject matter he/she is going to teach or impart to the Learners. Without good background knowledge of the subject matter, Students will lose confidence in the teacher and the teacher may lose his/her credibility if the employer knows the weaknesses.

Findings of the study indicated that the respondents agreed that all the ten competencies are required by Basic Science teachers in knowledge of subject matter for effective teaching of the subject in the junior secondary school in Ebonyi State. The findings of this study is confirmed by Fato (2010) who stated that teachers must possess an in-depth understanding of major concepts, assumptions, debates, processes of inquiry and ways of knowing that which are knowing the central to the disciplines they teach to the students.

Therefore, a Basic Science teacher needs to be very sound in the knowledge of subject matter so that effective teaching and learning of Basic Science can take place at junior secondary school level.

This research questions deals with identification of competency required by Basic Science teachers in the use of the use of instructional methods techniques. It is well documented in the literature that teaching methods techniques are very important in any educative process, instructional methods or techniques are recurrent pattern of teachers behaviour or characteristics of teaching that are repeated over intervals, measured in minutes or weeks and such instructional methods include lecturing, discussion, tutoring, independent methods etc. These instructional methods or techniques according to Ukeje (1991) promote Students learning of different kinds of concepts during instruction.

Findings showed that the respondents agreed that all the ten competency items in the use of instructional methods and techniques are required by Basic Science teachers for effective instructional delivery in Basic Science. The findings of the study is in agreement with the submission of Gbamanja (2002) who stated that instructional methods that are most applicable by teacher for effective teaching are demonstration, lecture, discussion or seminar, problem-solving,, field trips, laboratory methods and so on. The competencies posses by the Teachers in the use of teaching or instructional methods help them to know when, how and under which situation a teaching method should be used for instructional delivery.

Research question three intends to identify competencies required by Basic Science teachers in effective classroom and laboratory management in the study area. Classroom and laboratories are confined area where teaching and learning take place in the school. The quality of teaching and learning that transpire in the school to a great extent depend on the ability and competency of the teachers to effectively manage classroom and laboratory when an instruction is going on. The quality. Arrangements in the classroom and laboratory, the ventilation, safety measure, maintenance of discipline among the students and others are endured by a competent teacher for effective classroom and laboratory management for quality instructional delivery.

Findings revealed that the respondents agreed that all the ten competency items are required by Basic Science teachers for effective classroom and laboratory management during instruction. This findings is in agreement with the findings of Ebaye (2007) who reported that to ensure effective classroom or laboratory management the teacher should make effective use of the classroom or laboratory with the materials well arranged, check attendance, apply corrective measures to enhance discipline, provide routine cleaning procedure in the classroom or laboratory among others.

## IMPLICATIONS OF THE STUDY

Based on the findings of this study, the following implications are drawn. The findings of the study have implications to teachers Basic Science teachers because the study has exposed the professional competencies required for effective teaching of Basic Science. Therefore, any teacher of Basic Science who falls short of these professional competencies is deemed for retraining.

The curriculum planners at teacher preparation level should use the findings of this study to further improve the curriculum of teacher preparation taking cognizance of the findings of the study on the required professional competencies in quality instructional delivery. The findings of this study have implications to the students at the receiving end. If the teacher of Basic Science possess the required professional competencies in teaching, the interest and achievements of the students in Basic Science will definitely improve.

Findings of this study also have some implications to Educational administrators in the state. Having determined the competencies required by Basic Science teachers for quality and effective teaching, the educational administrators in the State can use the identified required competencies as bench mark for evaluating pre-service Student teachers, and recruiting new crops of teachers into teaching service. The educational administrators in the state can also use the findings of this study as yardstick for recommending teacher of Basic Science for in-service training through workshops, seminar, conferences and Short duration courses.

### RECOMMENDATIONS

Based on the findings that emanated from this study, the following recommendations were made:

1. The competencies identified as being required for effective teaching by Basic Science teachers should be examined and Incorporated into teacher preparation curriculum programme if they are not already in the curriculum.
2. In-service training should be organized for the teachers of Basic Science in Ebonyi State on regular basis in order to update their professional competency
3. Educational administrators in Ebonyi State should ensure adequate provision of fund, competent personnel, instructional materials and other required human and material resources into teacher preparation schools in the state to ensure the provision of competent teacher.
4. Educational administrators and school management should also ensure the recruitment of qualified and competent teacher after being. This will help to guarantee quality in Secondary School education in Ebonyi State. Any teacher that failed recruitment placement examination should be recommended for improvement.

### SUGGESTIONS FOR FURTHER STUDIES

The following suggestions are made for further research study:

1. A further investigation should be carried out to identify the challenges of Basic Science teachers in effective teaching in Ebonyi State.
2. This study should also be carried out in other states in the South-- South zones to ascertain the reliability of the findings of the study.
3. A research should be carried out to ascertain the availability and utilization of instructional facilities for effective teaching of Basic Science in Ebonyi State.

4. Further studies should be carried out to identify in-service training needs of Basic science teacher for effective teaching in Ebonyi State.

5. A research study should be carried out to identify competency required by lecturers/teachers of Basic Science in colleges of education in Ebonyi State.

## SUMMARY OF THE STUDY

The major purpose of the study was to identify the competencies required by Basic science teacher for the effective teaching in junior secondary schools in Ebonyi State. To carry out the study, three research questions were developed to identify competencies required by the teacher of Basic Science in the knowledge of subject matter, in the use of instructional methods and techniques and Communication and in Students evaluation and records.

The literature review for the study was presented under the following subheadings: concepts of competency based Teacher preparation, knowledge of subject matter, instructional methods and techniques, classroom and laboratory management, effective teaching and Communication skills, Students evaluation and records, review of related empirical studies, and summary of the review of literature. The study adopted survey research design to assess the responses of the teachers of Basic Science on their required competency for effective teaching in the area. The population for the study was the active 164 Basic Science teachers in the state. A proportionate random sampling technique was used to select 100 teachers which were used as respondents for the study. Structures questionnaire items was developed to obtain the data from the respondents. The data collected were analyzed using mean and standard deviation.

The results of the data analyzed showed that Basic Science teachers required competency, in all the items developed in knowledge of subject matter, use of instructional methods and techniques, classroom/laboratory management, teaching and Communication skills and students evaluation and records. Based on the findings of this study, following recommendations were made that competences identified as being required for effective teaching by Basic Science teachers should be examined and Incorporated into the teacher preparation if they are not already in the curriculum among others.

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