



SECONDARY SCHOOL TEACHERS' AWARENESS AND APPLICATION OF VOCABULARY INSTRUCTIONAL STRATEGY FOR TEACHING BASIC SCIENCE IN AWKA SOUTH, NIGERIA

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Abstract

The study investigated secondary school teachers' awareness and application of vocabulary instructional strategy for teaching Basic Science in Awka South, Nigeria. Two research questions guided the study. The study made use of the survey research design. The sample of the study constituted of all the 60 Basic Science teachers in the 19 government-owned/public secondary schools in Awka South Local Government Area of Anambra State, Nigeria. The instrument titled Awareness and Application of Vocabulary Instructional Strategy Questionnaire (AAVISQ) with a reliability coefficient of 0.83 was used to collect data for the study. Percentage and arithmetic mean were used to answer the research questions. The findings from the study showed that the Basic Science teachers were aware of the vocabulary instructional strategy and also applied it in their teaching of Basic Science in secondary schools in Awka South. The researchers concluded from the findings of the study that students' poor performances in Basic Science both in internal and external examinations cannot be linked to the Basic Science teachers' lack of awareness and application of innovative teaching strategies such as the vocabulary instructional strategy, since the findings show that the Basic Science teachers were not only aware of this strategy but also apply it in their teaching of Basic Science for the optimum academic performance of the students.

Keywords: Basic Science, vocabulary instructional strategy, secondary school, teachers, students.

1. INTRODUCTION

Education has been the pillar and the foundation of development for most countries of the world and this is because it facilitates both economic and social

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growth and development of any nation. According to Omiko (2016), formal education was introduced into Nigeria by foreign missionaries in the year 1842 and this form of education placed emphasis on reading, writing and arithmetic. This formal education proceeded into the pre-primary, primary, post-primary/secondary and tertiary levels, with science education taught in one form or the other at each of these levels. Science education is the field of education that fosters the scientific and technological development of any nation. According to Alebiosu and Ifamuyiwa (2008), science education is seen as the gateway to the scientific and technological survival of any nation and that it also plays a significant role in the lives of citizens of the nation. Science education is widely acknowledged to be the escape route to the development of Nigeria and this led to its incorporation into the foundational level (primary and post-primary/secondary) curriculum of Nigeria's educational system to be taught as Basic Science amongst others.

Ezeoguine and Amaechi-Udogu (2019) defined Basic Science as a sophisticated tool needed for scientific and technological development as well as a good understanding of the world around us. Fajemidagba (2014) posited that Basic Science plays a significant role in objectivity and accurate communication of research findings in scientific work. Omotayo, Ihebereme and Maduwesi (2016) asserted that Basic Science help chart careers for students in areas of aviation, communication, computer, engineering, to mention but a few and also help in transforming human lives.

According to the Nigerian Educational Research and Development Council (NERDC, 2012), the objectives of Basic Science now called Basic Science and Technology after the revision of the nine-year Basic Education Curriculum by the Federal Government of Nigeria should be directed at enabling students who are exposed to the curriculum to acquire the following:

1. develop interest in science and technology, acquire basic knowledge and skills in science and technology
2. apply scientific and technological knowledge and skills to contemporary societal needs
3. take advantage of the numerous career opportunities provided by science and technology
4. become prepared for further studies in science and technology
5. avoid drug abuse and related vices and
6. be safety and security conscious

These objectives however, has not been achieved as evident in the academic performance of students in Basic Science and Technology at the Basic Education Certificate Examination (BECE) of Anambra State from 2015 to 2019 as presented in the table below.

GRADE YEAR	DISTINCTION %	CREDIT %	PASS %	FAIL %
2015	8.05	38.02	45.08	8.86
2016	3.84	45.50	46.88	3.68
2017	2.43	43.84	49.97	3.77
2018	4.47	43.20	47.69	4.65
2019	2.44	46.64	48.23	2.69

Source: Examination Development Center, Ministry of Education Awka, Anambra State (2020).

Many researchers have attributed students' poor performances in Basic Science to quite a number of factors. For example, Afuwape and Olugbuyi (2019) have attributed it to the difficult nature of the subject, others (Oludipe, 2012; Ayibatonye & Ikechi, 2018) attributed students' poor performance in Basic Science to students' related factors. Some researchers on the other hand, have attributed the poor performance of students in the subject to poor and inadequate teaching and learning facilities, inadequate laboratories as well as the teachers handling the subject (Ayibatonye & Balafama, 2017; Umar & Samuel, 2018).

The teacher is the primary executor of every educational policies/action plans in the classroom; he/she is responsible for affecting students' cognitive, affective and the psychomotor domains. Okolocha and Onyeneke (2013) defines the teacher as one who plans, organizes, designs, directs, motivates and inspires students to learn using standard teaching strategies to impart knowledge to the students. According to them, it is the duty of the teacher to implement educational reforms in the classroom through the use of effective teaching strategies and these reforms when implemented could lead to the achievement of teaching objectives which would by extension improve students' performances in school subjects. Literature (Ezeliora, 2004; Talbert-Johnson, 2004; Nwosu, 2004) has shown that students' poor academic achievement in school subjects are majorly drawn from the teachers' use of inadequate/inappropriate teaching strategies for teaching. A teaching strategy according to Achor, Samba and Ogbeba (2010) is simply an approach, method or a combination of carefully designed classroom interactions that could be followed meticulously to teach a topic, concept or an idea. There are many teaching strategies a teacher could use in the classroom for effective teaching but for the purpose of this study, the vocabulary instructional strategy would be considered.

The vocabulary instructional strategy is a teaching strategy that involves the teaching of word(s) meaning in order to stimulate learners' understanding of concepts or ideas represented by the word(s). Vocabulary instruction according to Reutzel and Cooter (2013) is defined as "teaching word meanings and how one determines word meanings from an understanding of word parts or word clues

when available” (p. 216). There are generally two types of vocabulary instructional strategy that can be used to teach students: The implicit vocabulary instructional strategy and the explicit vocabulary instructional strategy. The implicit vocabulary instructional strategy can be defined as the strategy that entails learning word(s) meaning without awareness. It occurs when the mind of the learners are concentrated elsewhere, such as on understanding a written text or spoken material. In this strategy, participants are involved through the retention of information incidentally (Marzban & Kamalian, 2013). It is an indirect means of learning vocabulary. The explicit vocabulary instructional strategy on the other hand is defined as the strategy that entails learning word(s) meaning with awareness. It is used to engage learners in activities that focus their attention primarily on word(s). The explicit vocabulary instruction occurs when the teacher selects certain content words bordering around the lesson or topic of the day and teach them in-depth as the focus of the lesson. This allows the student to acquire the knowledge needed to understand the lesson/topic in context (Hanson & Padua, 2011). Researchers (Kame’enui & Baumann, 2012; Kamil, et al., 2008) have shown the importance of teachers’ use of vocabulary instructional strategy in facilitating high levels of academic performance in students.

Horst (2005) and Macaro (2006) posited in their studies that vocabulary can be acquired by students from their teachers using the implicit approach, while Hiebert, Hiebert and Lubliner (2008) opined that academic vocabulary are acquired by students from the teachers the explicit way. Academic vocabulary here according to Perrone (2015) refers to discipline-specific words which are typically unique to a particular academic discipline. They are “the lexicon, concepts, and processes related to the content knowledge of a particular academic discipline” (p. 61). Thus, they can be technical or abstract, and understanding them is essential to building conceptual knowledge in the disciplines in which they are used. The effective design and use of the vocabulary instructional strategy by teachers is a needed course of action in the classroom since its usage could help students understand the ideas/concepts centralized around various vocabulary and also help the students navigate the classroom lessons with a great deal of familiarity. To this end, the importance of Basic Science teachers’ use of this teaching strategy in teaching Basic Science concepts cannot be over-emphasized but, it appears most teachers according to Achor, Samba and Ogbaba (2010) and Marzano (2004) are ignorant of innovative strategies needed for effecting teaching and thus do not use them for teaching in order to produce desired results in students’ academic performances. Regardless of the potentials inherent in this teaching strategy for improving students’ academic performances in Basic Science, its application in Basic Science classrooms is dependent majorly on Basic Science teachers’ awareness.

2. OBJECTIVE AND QUESTIONS

2.1. OBJECTIVE

The objective of this study was to examine secondary school teachers' awareness and application of vocabulary instructional strategy for teaching Basic Science in Awka South, Nigeria. Specifically the study sought to determine the:

1. Basic Science teachers' awareness of vocabulary instructional strategy for teaching Basic Science in Awka South.
2. Basic Science teachers' application of vocabulary instructional strategy for teaching Basic Science in Awka South.

2.2. QUESTIONS

The following research questions guided the study:

1. Are Basic Science teachers' aware of vocabulary instructional strategy for teaching Basic Science in Awka South?
2. Do Basic Science teachers apply vocabulary instructional strategy for teaching Basic Science in Awka South?

3. METHOD

The descriptive survey research design was used for the study and according to Anikweze (2013), this research design seeks to find out the current situation obtainable at any given point in time about a given research area of interest.

The study was delimited to junior secondary schools and only Basic Science teachers were covered by the study. The population of the study comprised of all the 60 Basic Science teachers in the 19 government-owned/public secondary schools in Awka South Local Government Area of Anambra State. All the 60 Basic Science teachers were used as the study's sample size and this is because the population size is quite small and can easily be covered by the researchers.

The instrument titled Awareness and Application of Vocabulary Instructional Strategy Questionnaire (AAVISQ) with a reliability coefficient of 0.83 was used to collect data for this study. The instrument was validated by two experts in the field of Basic Science and measurement and evaluation. The AAVISQ has two sections. The Section A which is made up of 10 items with a two-point response options of aware (A) and not aware (NA), sought to find out Basic Science teachers' awareness of the vocabulary instructional strategy while the section B, made up five items with a four-point response options of strongly agree (SA), agree (A), strongly disagree (SD) and disagree (D) sought to find out Basic Science teachers' application of the vocabulary instructional strategy for teaching Basic Science.

In analyzing the data, percentage was used to answer research question one while the arithmetic mean was used to answer research question two. In taking decision for research question one, a percentage value of 50 and above is

considered ‘aware’ while a percentage value less than 50 is considered ‘not aware’. For research question two, any mean with cut-off point of 2.50 and above was taken to be ‘agreed’ while any mean with cut-off point less than 2.50 was taken as ‘disagreed’.

4. RESULTS

Research Question 1: Are Basic Science teachers aware of the vocabulary instructional strategy for teaching Basic Science in Awka South?

4.1. TABLES

Table 1: Frequency and Percentage Responses of Basic Science Teachers on their Awareness of Vocabulary Instructional Strategy for Teaching Basic Science in Awka South.

S/N	Item	Aware		Not Aware		Remark
		Frequency	%	Frequency	%	
1	I know about vocabulary instructional strategy	49	81.7	11	18.3	Aware
2	I have seen my colleagues in school using vocabulary instructional strategy	51	85.0	9	15.0	Aware
3	My friends have intimated me on vocabulary instructional strategy	44	73.3	16	26.7	Aware
4	I have learnt about vocabulary instructional strategy during my teachers' training programme in higher institutions	44	73.3	16	26.7	Aware
5	I have come across vocabulary instructional strategy on the internet	44	73.3	16	26.7	Aware
6	I have heard about vocabulary instructional strategy during workshops, seminars and conferences	39	65.0	21	35.0	Aware
7	I have read about vocabulary instructional strategy in journals and textbooks	45	75.0	15	25.0	Aware

8	I have attended conferences that had its theme centred around vocabulary instructional strategy	34	56.7	26	43.3	Aware
9	My school principal have instructed me to use vocabulary instructional strategy for my teachings	33	55.0	27	45	Aware
10	I have listened to or watched an educational audio or video tape where vocabulary instructional strategy was used for teaching	46	76.7	14	23.3	Aware

Basic Science Teachers’ Awareness of Vocabulary Instructional Strategy in Awka South

The frequency and percentage responses of Basic Science teachers on their awareness of the vocabulary instructional strategy for teaching Basic Science in Awka South as presented in table 1, shows that the Basic Science teachers are aware of the vocabulary instructional strategy for teaching Basic science, this is so because all items had percentage scores above 50 which is the criterion percentage of awareness. The finding shows that the Basic Science teachers in Awka South are aware of this innovative teaching strategy as against the contrary assertions put forward by Achor (2008) and Marzano (2004) that teachers are ignorant of innovative strategies needed for effective instructional delivery/teaching.

Research Question 2: Do Basic Science Teachers’ apply the vocabulary instructional strategy for teaching Basic Science in secondary schools in Awka South?

4.2. TABLES

Table 2: Mean and Standard deviation Responses of Basic Science Teachers on their Application of Vocabulary Instructional Strategy for Teaching Basic Science in Awka South.

S/N	Item	N	Mean	St.d	Remark
1	I use vocabulary instructional strategy to teach Basic science in my matter	60	3.017	1.033	Agree
2	I use vocabulary instructional strategy depending on the subject matter	60	3.067	.841	Agree
3	I use vocabulary instructional strategy when appropriate	60	3.050	.832	Agree
4	I use vocabulary instructional strategy in	60	2.883	.976	Agree

	introducing the basic concepts of the subject matter						
5	I use vocabulary instructional strategy depending on students' familiarity with the subject matter	60	2.683	1.228	Agree		
	Grand mean	60	2.940	.725	Agree		

Basic Science Teachers' Application of Vocabulary Instructional Strategy for Teaching Basic Science in Awka South

The mean scores across the 5 items describing the application of the vocabulary instructional strategy by Basic Science teachers in Awka South for teaching Basic Science as presented in table 2, shows that the Basic Science teachers apply the vocabulary instructional strategy for teaching Basic Science in Awka South. This is evident from the mean scores of all the items which are greater than the criterion mean cut-off point of 2.50. This finding shows that the Basic Science teachers use innovative teaching strategies such as the vocabulary instructional strategy for teaching Basic Science and this finding thus exonerates the Basic Science teachers from the poor performances recorded by students in internal or external examinations in Basic Science. The poor performance of students can be attributed to other teacher-related factors aside the use of innovative teaching strategies, students-related factors, school-related factors and so on as highlighted in the studies of Afuwape and Olugbuyi (2019), Oludipe (2012), Ayibatonye and Ikechi (2018), Ayibatonye and Balafama (2017) and Umar and Samuel (2018).

5. CONCLUSIONS

The researchers thus concluded based on the findings of the study that Basic Science teachers are not only aware, but also apply innovative teaching strategies such as the vocabulary instructional strategy for teaching Basic Science in secondary schools in Awka South Local Government Area of Anambra State, Nigeria. The Basic Science teachers took advantage of the enormous benefits of this teaching strategy to teach students and also help them approach Basic Science lessons with a great deal of familiarity thus, improving their understanding of Basic Science concepts and topics. The researchers also concluded that students' poor performance in Basic Science both in internal and external examinations, cannot be traced to the Basic Science teachers' ignorance and lack of application of innovative teaching strategies such as the vocabulary instructional strategy but can be traced to other factors such as student-related factors, environmental factors and other teacher-related factors as highlighted by previous researches.

The findings of this study are limited to the responses of the Basic Science teachers in Awka South Local Government Area of Anambra State, Nigeria. This limitation stems from the tendencies of the Basic Science teachers to evaluate themselves more highly and positively than required. The researchers however concluded that this limitation can be addressed, using the responses of students who happen to be the direct recipients of the Basic Science teachers' classroom instructions. The researchers thus concluded that these findings can be generalized on the whole teacher population in all the public secondary schools in Anambra State, Nigeria.

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