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Utilization of Guided Inquiry-based Learning Strategy for Effective Teaching and Learning in Universal Basic Education (UBE) Programme in Enugu State

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Abstract

The paper ascertained the extent to which utilization of guided inquiry-based learning strategy has facilitated teaching and learning in the Universal Basic Education (UBE) programme in Enugu State. Two research questions and two hypotheses guided the study. A descriptive survey design was adopted in the study. The sample for the study comprised 660 teachers made up of 422 urban-based and 238 rural-based teachers. The instrument used for data collection was a 13- item questionnaire. It was face-validated by three research experts and a reliability coefficient of .75 was obtained using Cronbach Alpha's formular. Mean scores and standard deviation statistics were used to answer research questions while the hypotheses were tested at .05 significance level using t-test statistic. The result revealed that utilization of guided inquiry-based learning strategy facilitated teaching and learning to a lower extent in the Universal Basic Education programme. It was also noted that guided inquiry-based learning strategy does not enhance students' academic performance in UBE programme. The teachers classified by location did not differ in their opinion on the extent to which guided inquiry-based learning strategy facilitated teaching and learning and enhanced students' academic performance in the UBE programme in Enugu State. It was recommended that more seminars and workshops should be organized on effective use of guided inquiry-based learning strategy to enhance students' academic performance.

Education is an instrument "par excellence for effecting national development". It is also an instrument for achieving upward mobility. However, all is not well with

the national educational system irrespective of the laudable National Policy on Education enunciated in 1977 which was revised in 2004 and the Universal Primary Education (UPE) launched nationally in September, 1976. The UPE provided educational opportunities for children of school age but the UPE could not survive because of political intrigues which led to poor planning and implementation with a number of other distracting factors (Compulsory Free Universal Basic Education Bill, 2004).

An effort was made by the government as she embarked on a reform of the entire system with the intention of providing not only access to education but improving the quality of education in the country. The Universal Basic Education (UBE) scheme was established as an integral part of the national educational structure and was used to improve on the deteriorating and undesirable situation in the Nigerian Educational System. The UBE was launched on 30th September, 1999 at Sokoto by the then President of the Federal Republic of Nigeria, General Olusegun Obasanjo (retired). The UBE as laid down in the national policy on education, aims at free and compulsory education for all, hence, it is universal. Irrespective of the social and economic background, the UBE scheme should be open to all. Basic education is the starting point in the acquisition of knowledge and without basic education there cannot be higher education.

Basic education refers to a general education in all states of the Federation. Basic education means early childhood care education and nine years of formal education (Compulsory Free Universal Basic Education Bill, 2004). The Universal Basic Education programme was a reform programme which was meant to reinforce 6-3-3-4 system of education and aimed at ensuring an uninterrupted access to a 9 – year formal education by providing free and compulsory basic education for every Nigerian child of school age (6 -15 years). The UBE programme was purposely designed to reduce the level of illiteracy to the barest minimum and to promote general awareness and to empower the people to contribute their own quota in the development of the country. The UBE is one of the crucial strategies for sustainable educational development in Nigeria. The UBE act/Bill was passed into law for nine years of continuous education. Every child that passed through the system should have acquired an appropriate level of literacy, numeracy, communication, manipulation and life long skills and be employable, useful to himself and to the society at large by possessing relevant, ethical, moral and civil values.

With the introduction of the Universal Basic Education programme in 1999 which was geared towards mass literacy, there is need to have competent teachers who can utilize equitable instructional strategies to ensure the realization of its objectives and make it successful. The teacher as a central focus in any process of education

should advocate for instructional strategies that are closely aligned with constructivist concepts of exploration, discovery and invention because of an appreciation that the learning outcomes are most valuable (Bok, 2006). In inquiry-based instructional strategy, students experience and explore learning in a collaborative manner. It is a process in which students are provided with both direction and freedom in the classroom. Teachers provide coaching and modeling by using guided inquiry methods (Mayer, 2004). With guided-inquiry; students retain the discovery learning advantage of developing true scientific thought processes. They will also benefit by building their knowledge based on a combination of facts, theories and experiences.

According to Matson (2006), inquiry-based science teaching is the process of inquiring into the nature and structure of the universe. Inquiry-based learning requires students to take examples from daily life, to propose hypotheses, test them like scientists, and meanwhile, to gain advanced level cognitive skills (Matthews, 2002). Erdal and Ongel (1998) stated that when learners take part in an inquiry, they get a complementary excitement and satisfaction by what they do, sense and share, and what and how others do and sense during the inquiry process. The guided inquiry instructional strategy could be reliable since it involves active participation of learners. It helps to a great extent in imprinting the learning experiences in the minds of the learners (Kipnis, 2005). Mayer (2004) described inquiry method as an activity carried on by the learner in a spirit of purpose to accomplish a definite, attractive and seemingly attainable goal. It is concerned with engaging students in the process of finding solutions to real problems in the society. The process is therefore learner-oriented. The teacher only guides and directs the activities of the learners. Adeyoke (2002) and Afolagbe (2006) reports established that there was poor academic performance among participants in the Nigeria educational system, UBE scheme inclusive. This is an indication that something is wrong with the teaching and learning of subjects in the programme. To improve on this, it becomes pertinent that classroom practice should be enhanced using innovative teaching methods that will involve active participation of the learner thereby stimulating learning. In response to the problem of poor performance in the educational system, the WAEC Chief Examiner's report (2010) recommended the use of effective teaching methods that are in line with the modern science and technological dispensation as the only remedy to students' poor performance in schools.

Both primary and secondary schools are sited in different locations. Hornby (1999) defined school location as a place where a school is sited. This means that some schools can be located in the rural areas while others are in the urban areas. A number of studies have been conducted on school location. The findings of some of the studies are not in agreement. There are contrary views with regards to the influence of location on academic achievement of students. For instance, Ogene (2011) investigated the

nature of relationship between school location and instructional strategies. The findings revealed that students from urban schools using modern teaching facilities performed better than their rural counterparts. Also, Okafor (1998) in Ogene (2011) studied teaching methods and environment as factors in mathematics achievement. The findings revealed that s tudents in urban schools performed better than those schools located in rural areas. Teachers' perfection in the utilization of instructional strategies, at times, depends on the location of the teacher. Urban located teachers who are more accessible to modern educational facilities may tend to excel in such methods as inquiry strategy.

This study therefore investigated the extent to which utilization of guided inquiry-based learning strategy facilitated teaching and learning in the UBE programme in Enugu State.

Purpose of the Study

The study ascertained the extent to which utilization of guided inquiry-based-instructional strategy facilitated teaching and learning in the UBE programme in Enugu State. It also examined the extent to which the above learning strategy enhanced students' academic performance in the UBE programme in the state.

Research Questions

The following two research questions guided the study:

(1) To what extent has utilization of guided inquiry-based learning (GIBL) strategy facilitated teaching and learning in the UBE programme in Enugu State.

(2) To what extent has utilization of GIBL strategy enhanced students academic performance in UBE programme in Enugu State.

Research Hypotheses

The following null hypotheses guided the study and were tested at 0.05 level of significance.

Ho_1: There is no significant difference between the mean score of urban and rural teachers on the extent to which utilization of guided Inquiry-Based instructional strategy facilitated teaching and learning in the UBE programme in Enugu State.

Ho_2: There is no significant difference between the mean scores of urban and rural teachers on the extent to which guided inquiry-based learning strategy enhanced students' academic performance in the UBE programme in Enugu State.

Design of the Study

This study employed the survey research design. Nworgu (2006) noted that survey uses questionnaire to determine opinion, preference, attitudes and perception of people about issues that concern them. This survey is good for this study because it allows the collection of original information and gives the respondents equal opportunity of being chosen for the study. The findings will be generalized to the entire population of the study.

Scope of the Study

The study is limited to the extent GIBL is being utilized for effective teaching and learning in the UBE programme in Enugu State.

Specifically, the study sought to ascertain how GIBL strategy enhanced students' academic performances in UBE programme in Enugu State. The study covered only two Education Zone in Enugu State; Agbani and Nsukka Zones.

Population for the Study

The population comprised all the 5,654 urban and rural-based secondary school teachers in the five education zones in Enugu State (PPSMB, 2013).

Sample for the Study

A proportionate random sampling technique was used to draw a sample of 660 teachers from the 25 randomly selected secondary schools from 2 education zones of Enugu State. Among the teachers selected, 442 were urban based while 238 were rural based teachers (PPSMB, 2013).

Instrument

The instrument for data collection was a 13 – item questionnaire. Items 1-6 addressed research question 1, item 7 – 13 addressed research question 2. The responses to the questionnaire items were designed on a 4-point likert scale of strongly agree (SA)-4, Agree (A)-3, Disagree (D)-2, Strongly disagree (SD) – 1. The average of these points is 4+3+2+1 = 10/2 = 2.50. Therefore, decision rule is that any mean that is 2.50 or above is accepted while item with mean below 2.50 is rejected. The instrument was face validated by three research experts. The reliability of the instrument was determined using cronbach alpha's formular and reliability co-efficient of .75 obtained. Mean scores and standard deviation were use to answer research questions while the hypotheses were tested at .05 level of significance using z-test statistic.

Results

Research Question 1: To what extent has the utilization of guided inquiry-based learning strategy facilitated teaching and learning in the UBE programme in Enugu State?

Table 1: Mean Response of Teachers on the Extent to Which Utilization of Guided Inquiry-Based Learning Strategy Facilitated Teaching and Learning in UBE Programme in Enugu State

S/N	Item	$\bar{X}$	SD	Decision
1	Guided inquiry-based instructional strategy helps students relate learning to real life problems.	2.34	0.86	Low Extent
2	Guided inquiry-based instructional strategy involves learners in purposeful learning.	2.42	1.01	Low Extent
3	Guided inquiry-based instructional strategy enriches students' factual and practical content of any subject	2.85	0.71	High Extent
4	Guided inquiry-based instructional strategy helps students understand better and recall learning experience at the appropriate time.	1.73	1.02	Low Extent
5	Guided inquiry-based instructional strategy imprints learning experience in the minds of the learners.	2.63	0.85	High Extent
6	Guided inquiry-based instructional strategy promotes students' understanding of learning materials	2.25	1.04	Low Extent
	Grand Mean	2.27	1.08	Low Extent

Data in table 1 with the grand mean of 2.27 and standard deviation of 1.08 show that utilization of guided inquiry-based instructional strategy facilitated teaching and learning to a low extent in the UBE programme in Enugu State.

Research Question Two

To what extent has utilization of guided inquiry-based instructional strategy enhanced students' academic performance in the UBE programme in Enugu State?

Table 2: Mean Response of Teachers on the Extent Utilization of Guided Inquiry-Based Instructional Strategy Enhanced Students' Academic Performance in the UBE Programme in Enugu State

S/N	Item	$\overline{X}$	SD	Decision
7	Guided Inquiry-based learning strategy aids achievement in school subjects.	2.33	0.83	Low Extent
8	Guided Inquiry-based strategy helps students to retain learnt materials for long.	2.16	1.01	Low Extent
9	Guided Inquiry-based learning strategy enhanced students' academic performance in classroom activities.	1.84	1.14	Low Extent
10	Guided Inquiry-based learning strategy helps students to solve abstract problems.	2.86	0.76	High Extent
11	Guided Inquiry-based learning strategy excites students during the teaching process.	2.38	0.94	Low Extent
12	Guided Inquiry-based learning strategy enriches students' knowledge in different subjects.	1.24	0.98	Low Extent
13	Guided Inquiry-based learning strategy equips students with skills to solve daily problems	1.72	1.03	Low Extent
	Grand Mean	2.07	1.03	Low Extent

Data in table 2 with grand mean of 2.07 and standard deviation of 1.03 reveals that guided inquiry-based learning strategy enhanced students' academic performance to a low extent in the UBE programme in Enugu State.

Testing Research Hypotheses

Ho_1: There is no significant difference between the mean score of urban and rural teachers on the extent to which utilization of guided inquiry-based learning strategy facilitated teaching and learning in the UBE programme in Enugu State.

Table 3: T-Test Mean Rating of Urban and Rural Teachers on the Extent to Which Utilization of Guided Inquiry-Based Learning Strategy Facilitated Teaching and Learning in UBE Programme in Enugu State

Location of Teachers	N	$\overline{X}$	SD	Df	t-cal	t.crit.	Decision
Urban-based teachers	422	2.29	1.07				Do not reject
Rural-based teachers	238	2.26	1.03	658	0.86	1.96	Ho.

In the above table, the t-calculated (0.86) is less than the t-critical (1.96) at .05 level of significance and 658 degree of freedom. Since the calculated value of t is less than the critical or table value, the null hypothesis is therefore not rejected. This indicates that there is no significant difference between the mean response scores of urban and rural-based teachers regarding the extent to which utilization of guided Inquiry-based Learning Strategy facilitated teaching and learning in the UBE programme in Enugu State.

Ho_2: There is no significant difference between the mean score of urban and rural teachers on the extent to which utilization of guided inquiry-based instructional strategy enhanced students' academic performance in the UBE programme in Enugu State.

Table 4: T-Test Mean Rating of Urban and Rural Teachers on the Extent to which Utilization GIBL Strategy Enhanced Students Academic Performance in the UBE Programme in Enugu State

Location of Teachers	N	$\bar{X}$	SD	Df	t-cal	t.crit.	Decision
Urban-based teachers	422	2.08	1.04				Do not reject
Rural-based teachers	238	1.98	0.98	658	0.44	1.96	Ho.

In the above table, the t-calculated (0.44) is less than the t-critical (1.96) at 0.05 level of significance and 658 degree of freedom. Since the calculated value of t is less than the critical value, the hypothesis is therefore not rejected. This indicates that location is not a significant factor in the extent guided inquiry-based instructional strategy enhanced students' performance in the UBE programme in Enugu State.

Discussion

The result of data analysis on table 1 revealed that the utilization of guided inquiry-based instructional strategy facilitated teaching and learning to a low extent in UBE programme in Enugu State. This result disagreed with the findings of Kipnis (2005) who revealed that the strategy to a great extent helps in imprinting the learning experiences in the minds of the learners. Also, the above result was not in consonance with the findings of a study conducted by Mayer (2004) who posited that inquiry method is an activity carried on by the learner in a spirit of purpose to accomplish a definite, attractive and seemingly attainable goal.

From the result of data analysis for research question two on table two, it was observed in this study that utilization of guided inquiry-based instructional strategy enhanced students' academic performance to a low extent in the UBE programme. The

above result is in agreement with the view of both Sweller (1998) and Rittle–Johnson (2006) who emphasized that because guided inquiry-based learning strategy relies on an extensive search through problem-solving space, the process taxes learners' limited working memory capacity and frequently does not lead to learning. In addition, learners need the ability to monitor their own processes of attention to relevant information (Case & Kirschner, 2006).

However, on tables three and four, the results revealed that there were no significant differences in the mean response scores of urban and rural-based teachers regarding the extent to which utilization of guided inquiry-based learning strategy facilitated teaching and learning and the extent to which guided inquiry-based learning strategy enhanced students' academic performance in the UBE progamme in Enugu State.

This showed that both urban and rural-based teachers have similar view regarding the utilization of guided inquiry-based learning strategy in the UBE programme in Enugu State. Therefore, the respondents classified by location did not differ on the extent to which guided inquiry-based learning strategy facilitated teaching and learning in UBE programme and enhanced students' academic performance in the UBE programme in Enugu State. The above result was not in consonance with the findings of Ogene (2010) who studied teaching methods and environment as factors in mathematics achievement and found out that students in urban schools performed better than those in schools located in rural areas. This result confirmed that location could not be a factor in students' performance.

Conclusion

The following conclusions were made:

a) Utilization of guided inquiry-based learning strategy facilitated teaching and learning to a low extent in the UBE programme in Enugu State.

b) Guided inquiry-based learning strategy did not enhance students' academic performance in UBE programme in Enugu State.

c) The teacher classified by location did not differ on the extent to which guided inquiry-based learning strategy facilitated learning and enhanced students' academic performance in the UBE programme in Enugu State.

Recommendations

The following recommendations were made:-

1) Seminars and workshops should be organized for teachers on other teaching strategies.

2) Teachers were discouraged to make regular use of guided inquiry-based learning strategy as it did not enhance students' academic performance in the UBE programme in Enugu State.

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