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USE OF ACTIVITY-BASED LEARNING TO IMPROVE STUDENTS` OUTCOMES IN BASIC EDUCATION SUBJECTS

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ABSTRACT*: The study deals with Activity-Based learning to improve students` outcomes in English language and Basic Science. The study examines how the use of the activity-based learning strategy enhances students` outcomes in the two core subjects taught in the upper basic levels in Nigeria. Quasi-experiment research design was used to conduct the study. The target group comprised six hundred and forty-three (643) Junior Secondary School Students (JSS II) in two selected schools. One Hundred and ten (110) were sampled using a stratified sampling technique. Self-developed instrument entitled `Basic Education Performance Scale` was deployed to assess the experimental and control groups` outcomes. The data collected were analysed using independent t-test. The study's findings indicated that activity-based learning significantly affects the students` outcomes in English language and Basic science subjects. Therefore, it is recommended that teachers should promote active learning through the use of hands-on activities.*

KEYWORDS*:* activity-based learning, basic education, English language & basic science

INTRODUCTION

The most prominent challenge teachers of elementary level encounter in modern classrooms are the pressing demand to teach multiple subjects in a given class. In most private schools and some public schools in Nigeria, teachers are expected to lead and cover a broad spectrum of curriculum contents of different subjects ranging from the English language to Basic Science; mathematics and civic education. This, probably, grew out of the quest for a better teaching approach at the primary level. Teachers are mostly left with a sheer option to teach only a subject. The system gradually transitions teachers` from one discipline to a multidisciplinary role. To meet the learners' needs and prove equal to the task, teachers must search for suitable teaching methods to enhance students` engagement, participation, and attention in all subjects offered at the Basic levels.

The transition of teaching into the multi-tasked activity might have been necessitated by the increasingly declining rate of the students` performance in Nigeria and its threat to the nation's industrial development. Many factors believed to have contributed to these trends; from the school environment to leadership style in school (Mustapha, 2019), teachers' pedagogical approach (Habib, Mustapha & Ali, 2019), The displacement due to the humanitarian crises in Nigeria and its aftermath consequences on the education system (Wali & Mustapha, 2019), lack of interest and zeal on the part of the students (Mustapha, 2019) and low utilization of ICT in education

(Mustapha, Wali & Ali, 2015) among many others factors. Notably, the teaching methods will either make or mar the primary objective of teaching (Shehu, Mustapha & Waziri, 2018).

The teaching method is the general principles, pedagogy and management strategies used for classroom instruction. It is an organised process in which an instructor attempts to impart, get or share information with the learners. According to Bello (1981) "teaching method is the process of transferring knowledge and skills used by a teacher in the classroom. It implies using principles and theories of instructions; it can include class participation, demonstrations, and recitation. Many teaching methods and strategies are recurrently employed to enhance students` outcomes. However, due to the high demand to cover as much curriculum contents as possible, teachers often use content-based methods to meet the challenge. This has severe implications on the learners as the instruction phase is too speedy. The intent to cover a wide range of topics as quickly as possible will leave the teacher no option other than overlooking or downplaying the individual differences. Hence, the quest to get a student-friendly approach, such as the activity-based teaching approach, is necessary.

Activity-Based learning is a teaching method adopted by an instructor to facilitate instruction through the task. The learners participate absolutely and bring about efficient learning experiences. It is a technique in which the learner is actively engaged mentally and physically. This approach is based on the core premise that learning should be based on doing some hands-on experiments and activities rather than just listening to lessons. Learning by doing is the fundamental focal point in this Method, and the more a person knows and longer he/she retains (Minje, 2013). Activity-based learning involves reading, writing, discussion, practical activities and engagement in solving problems, analysis, synthesis and evaluation (Hansraj, 2017). The use of the activity-based Method in the teaching process can boost a desirable change in students' role from inactive to participative learners. It likely enhances cognitive, affective and psychomotor domains respectively by giving learners enough chances to perform well. Activity-based learning allows learners to learn through experimentation and exploration. The sensory experience and action make education better and more impactful (Shahram, 2018).

The application of activity-based learning has been so much prominent in science-based subjects with variant findings. However, its application to teaching language has not yet been widely acknowledged. Therefore, this paper seeks to examine Activity-Based Learning to Improve Students` outcomes in Basic Education subjects.

Statement of the Problem

Teachers face numerous challenges in modern classrooms, including teaching multiple subjects, excessive workloads, and demand to cover a wide range of curriculum contents, large class size, and many other issues. This has possibly pushed teachers to employ content-based methods or lecture method to enable them to cover as much content as possible; little or no attention has been given to individual differences, learners` interest, and needs. The implication of this is that zero attention is given to learners` active participation; thus, learning may not occur. Thus, searching for a suitable teaching method that enhances learning through active participation and engagement

has become mandatory. Therefore, this study examines Activity-Based Learning to improve students` outcomes in Basic Education subjects.

Objectives of the Study

The objectives of the study are to determine:

a. Effect of Activity-Based Learning on Students` Outcomes in the English language
b. Effect of Activity-Based Learning on Students` Outcomes in Basic Science

Hypotheses

The below null hypotheses were tested.

- H_{01} the use of Activity-Based Learning does not influence students` Outcomes in the English language.
- H_{02} Use of Activity-Based Learning does not enhance Students` Outcomes in Basic Science

Significance of the Study

The findings of this study are significantly crucial to teachers and researchers. It informs teachers on the effectiveness of activity-based learning, thereby shaping their teaching strategies from traditional teacher-learner interaction to hands-on activities to promote active students` participation. This work serves as reference material for interested researchers as it also serves as a guide for the researchers on the research gaps left when conducted this research.

Scope and Limitations of the Study

The study examined the use of Activity-Based Learning to Improve Students` Outcomes in Basic Education Subjects. The study focused on the outcomes of students in English language and Basic Science. The two subjects' selection was informed that they are core subjects offered by all students at the Basic Education level. The study was delimited to two selected schools due to the timeframe.

LITERATURE REVIEW

Available empirical studies reported that the activity-based approach has significant benefits to the learners. For instance, Ajayi (2017) studied the Effect of activity-based Method on senior secondary students' interest in organic chemistry. The quasi-experimental design was used the quasi-experimental population of the study comprised of 2381 SS II students. One hundred eighty-four students were sampled. Organic Chemistry Interest Inventory was used as an instrument for data collection. The Data Collected were analysed using ANCOVA. The study revealed that students taught using hands-on activity-based had significantly higher mean interest scores than those taught using the discussion method. Mishra and Yadthe (2013) explored the effect of activity-based approach on students` achievement in science. Quasi-experiment was employed. One hundred thirty-three class VII students were the participants of the study. Sixty students were randomly selected and used as the sample size for the analysis. The teacher made an achievement test, and the instructional tool was used for data collection. Data were analysed using the descriptive and inferential technique. The study found that activity-based Method enhances achievement in science.

Khan, Muhammad, Ahmed, Saeed and Khan (2012) examined the impact of activity-based teaching on students' academic achievement in physics at the secondary level. The experimental design was used for the study. All 9th Grade science students of Khyber Pakhtunkhwa were the population of the study. Fifty students were chosen as the sample for the analysis. MCQs type achievement test was used as an instrument for data collection. Data collected were analysed using independent t-test. The finding showed that activity-based Method was useful in developing higher-order skill in learners. Celik (2018) studied the effect of activity-based learning on sixth-grade students` achievement and attitude toward mathematic activities. The study employed an experimental design. The participants included 78 sixth grade students—the data was collected through mathematics success tests and the Likert type attitudes towards mathematics activities scale. The analysis of covariance (ANCOVA) was used in the study. The report showed that activity-based Method improves students' academic achievements and attitudes towards activities. Coskun and Eker (2018) examined the effect of teaching activities using activity-based posters on the students' academic achievements and retention levels in their learning. Pre-test-post-test control group model" of quantitative research methods was used. This study's application group constitutes 60 students studying at the 9th Grade in an Anatolian High School with middle-level students in Eskişehir, in Turkey. Academic achievement test was used as a data collection tool to obtain research data. T-test was used to test whether the scores obtained from the academic achievement test and the retention test between the experimental and control groups were meaningful. The result indicated that activity-based Method significantly affects students` achievement and retention level in the English language.

Haq, Khurram and Bangash (2017) investigated the development of Speaking Skills through Activity Based Learning at the Elementary Level. The study was based on a pretest-posttest equivalent group design. A total of 50 male students served as participants in this research. An achievement test developed by the researchers was used to measure how the participants developed their speaking skills. Mean, standard deviation and t-test of the independent sample were used to analyse the data. The study revealed that the experimental group performed significantly better than the control group on the posttest concerning achievement in speaking.

Akhtar and Saeed (2017) studied applying activity-based learning in Improving the Quality of Teaching at Secondary School Level. Posttest only controls group design was used for the study. The study was conducted on 76-grade ninth students in an urban school of district Lahore were selected randomly. An achievement test developed by the researcher was used for collecting data. Independent t-test was used to analyse the data. The results revealed that the activity-based approach enhances students' learning.

METHODOLOGY AND TOOLS FOR THE RESEARCH

Quasi-experiment design was used to examine Activity-Based Learning on students` outcomes in two core basic education subjects; English language and Basic Science. The population for this study comprised all 110 JSS II students in two selected schools. Using a stratified sampling technique, 110 JSS II students were sampled. Self-developed instrument entitled `Basic Education Performance Scale` was used to examine the students` outcomes. The participants were grouped

into the experimental and control groups. Each group was made up of male and female genders. The pretest was applied to both the experimental and control groups to measure their English language and Basic Science performance. After the treatment, posttest was also administered to both groups to calculate the Effect of Activity-Based learning on the students' performance. The Data collected were analysed using Independent t-test.

RESULTS

The hypotheses were tested at 0.05 level of significance to determine the effect size. Group statistic was also conducted to observe the mean difference between the experimental and control group.

Table 1: Mean Difference of the Groups in the English Language

	Group Type	N	Mean	Std. Deviation
Result of pretest in the English language	Experimental group	55	41.13	6.195
	Control group	55	40.91	6.261
Result of posttest in the English language	Experimental group	55	58.55	6.989
	Control group	55	41.07	6.200

Table 1 presents the mean and standard deviation of control and experimental groups. The mean 41.13 and 40.91 represent the students` academic performance in the English language in the pretest. The result indicated no difference in the Mean of the two groups. The mean 58.55 and 41.07 represent students' academic performance in the posttest, which indicates a significant difference in the group's performance.

Table 2: Independent t-test on the performance of the groups in the English language

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	Df	Sig. (2-tailed)	Mean Difference
Result of pretest in English	Equal variances assumed	.003	.956	108	.855	.218
	Equal variances not assumed			107.988	.855	.218
Result of posttest in English	Equal variances assumed	5.839	.017	108	.000	17.473
	Equal variances not assumed			106.486	.000	17.473

Table 2 presents a t-test analysis of the effect of activity-based learning on students` academic performance in the English language. The result indicates no significant difference in the performance of the experimental and control groups in the pretest. The posttest result analysis indicates that the experimental group performed better than the control group at the 0.01 level of significance.

Table 3: Mean Difference of the Groups in Basic Science

	Group Type	N	Mean	Std. Deviation
Result of pretest in the English language	Experimental group	55	38.24	7.879
	Control group	55	37.96	7.498
Result of posttest in the English language	Experimental group	55	62.36	5.835
	Control group	55	40.15	5.512

Table 3 presents the mean and standard deviation of control and experimental groups. The table showed that the Mean (38.24) and Mean (37.96) represent the students` academic performance in Basic Science in the pretest. The result indicated no difference in the Mean of the two groups. The Mean score of the groups in the posttest (62.36 & 40.15) indicated a significant difference in favour of the experimental group.

Table 4: Independent t-test on the performance of the groups in Basic Science

		Levene's Test for Equality of Variances		**t-test for Equality of Means**		
		F	Sig.	Df	Sig. (2-tailed)	Mean Difference
Result of pretest in English	Equal variances assumed	.076	.784	108	.853	.273
	Equal variances not assumed			107.736	.853	.273
Result of posttest in English	Equal variances assumed	2.398	.124	108	.000	22.218
	Equal variances not assumed			107.652	.000	22.218

Table 4 presents a t-test analysis of the effect of activity-based learning on students` academic performance in Basic Science. The result indicates no significant difference in the performance of the experimental and control groups in the pretest. The posttest result analysis indicates that the experimental group performed better than the control group at the 0.01 level of significance.

DISCUSSIONS

The study results revealed that the use of Activity-Based Learning has a significant effect on students` outcomes in the two basic education subjects; English language and Basic Science. The findings of the study concurred with previous researchers` reports. For instance; Ajayi (2017) found that students taught using hands-on activity-based had significantly higher mean interest scores than those taught using the discussion method. Mishra and Yadthe (2013) found that activity-based Method enhances achievement in science. Khan, Muhammad, Ahmed, Saeed and Khan (2012) found that activity-based Method was useful in developing higher-order skill in learners. Celik (2018) reported that activity-based Method improves students' academic achievements and attitudes towards activities. Coskun and Eker (2018) reported that activity-based Method significantly affects students` achievement and retention level in the English language. Haq, Khurram and Bangash (2017)

reported that the experimental group performed significantly better than the control group on the posttest concerning achievement in speaking. Akhtar and Saeed (2017) found that the activity-based approach enhances students' learning.

The reason for this significant effect size may not be unconnected to the fact that students seem to be motivated and to participate actively when involved in hand-on activities than in ordinary lecturer or discussion methods.

CONCLUSION AND RECOMMENDATIONS

Based on this study's findings, it was concluded that hands-on activities to teaching the English language and basic science are beneficial to the students` outcomes and motivation. Learners tend to perform better when engaged in a guided activity. Therefore, it is recommended that teachers in Basic Education deploy activity-based learning as an appropriate strategy to enhance students` outcomes. The hands-on activities should be submerged into the daily lesson sessions.

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