

HANDS-ON-ACTIVITY INSTRUCTIONAL PACKAGE AS A FUNCTIONAL APPROACH FOR ENHANCING STUDENTS' INTEREST AND ACHIEVEMENT IN GEOGRAPHY IN EBONYI STATE

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Abstract

Effective implementation of Geography content makes students to have the full knowledge of the world they live in and to contribute their own quota in global connections and nation building. This yearning has led to the present study on how best to present the content using hands-on-activities package to boost their interest and achievements. Two research questions and two null hypotheses guided the study that adopted a quasi-experimental design of pre-test, post-test with non-equivalent control group. The population of the study was 617 SS II students offering Geography and with the use of multi stage sampling technique, 97 students were drawn both for the experimental and control groups. The instrument for data collection was a 50-item Geography Achievement Test (GAT) duly validated and its reliability determined using Kuder-Richardson 20 (K-R 20) approach that yielded a reliability index of 0.97. The instrument was administered to both the experimental and control groups with initial pre-test and post-test at the end of 6 weeks. The data collected were analyzed using mean, standard deviation and ANCOVA. The findings revealed that those exposed to hands-on-activity package performed better than those limited to expository method with achievement and interest gain means of 8.67-5.59, recording a mean gain difference of **3.08** and 10.26-8.61 with a mean gain difference of **1.56** respectively. Further testing of the result using ANCOVA showed that the alpha level 0.05 was greater than p-value of .002 and .001 respectively, leading to the rejection of the null hypotheses as a result of the significant differences. Recommendations were made like the adoption of

effective pedagogy like hand-on-activity package for enhancing students' interest and achievements in Geography among others.

Keywords: Hand-on-activity; Functional Approach; Enhancing Geography; Interest and Achievement.

INTRODUCTION

Education is a veritable tool for sustainable national development as it empowers its recipients with the appropriate skills, knowledge and values to adapt to global trends. To actualize the purpose of education, curriculum contents need to be properly packaged and delivered to the learners in a way to sustain their interest and performance (FGN, 2014). This calls for appropriate pedagogical approaches in delivering the contents of Geography curriculum; hence the need to adopt a functional instructional package and media to guide students to be actively involved in the teaching-learning process. Pedagogy involves the understanding of the complexity of interactions between teachers, students and the learning environment to create effective learning experiences (American, Educational Research Association (AERA), 2021). The adoption of any pedagogy according to Emesini (2022) must ensure proper interactions between the learners and teachers to promote learning outcomes that must be relevant to nation building, of which the subject Geography plays a key role here.

The importance of Geography in nation building and global connections is embedded in the national objectives of Geography education thus: the training of the mind in the understanding of the world; the acquisition of appropriate skills, abilities and competences, both mental and physical as the equipment of the individuals and the society (FRN, 2014:16). These laudable objectives could only be achieved if there is an effective approach of implementing the Geography curriculum. Based on the value of Geography and the national objectives of education in Nigeria, NERDC (2007:56) developed the Geography curriculum and enlisted its objectives which are summarized thus: developing a sense of responsibility towards one's own society in relation to different resources and regions; understanding the concept of man-environment relationship and to interpret spatial problems in their immediate and wider environment among others.

Despite these benefits of the subject, lack of interest and poor academic achievements are still observed among students and the number of them offering Geography at the Senior Secondary Certificate Examination level have drastically reduced. This may be as a result of the traditional method of teaching utilized by the teachers most of whom are not professionally trained in the teaching of the subject. As a result, Geographical study seems boring, less interesting to students as they are made passive learners in the process; hence the need to explore a functional pedagogical approach of teaching the subject to ensure concrete engagement and active participation of learners. This has led to the present study that has explored hands-on-activities instructional package as an enhancer of effective students' participation and making their learning of the subject interesting and pleasurable.

Hands-on-activity instructional package is a self-directed instruction; learner based and involves practicalizing of learning experiences. Akuma (2019) described this approach as a series of instructional activities that allow the students an opportunity to handle, observe and manipulate teaching–learning process and once applied in geography, leads to the practicalization of the subject which is fieldwork based. The placement of learners at the centre during teaching and learning of Geography content can lead to improvement in students' overall achievement in the subject, boosting their interest and engagement. Hands-on-activity instructional package seems to be an innovation in the teaching-learning process as students are busy doing what they are learning as active participants. The package is self-planned and self-directed instruction with expert teachers assisting where necessary, encouraging students' exploration and satisfaction in learning. The potential impact of this package has led to the present study that thus ask: what impact has hands-on-activity instructional package in enhancing Geography students' interest and achievement in the subject? These technique as a functional approach can also enhance students' interest in teaching and learning of Geography in Senior Secondary Schools in Ebonyi State.

In Geography classroom activities, interest can be seen as students' enthusiasm, curiosity and willingness to learn Geography concepts, participate actively in practical experiences and explore environmental issues. Hand-on-activity such as fieldwork, map reading, construction of models and environmental observation as well as drawing of various kinds can stimulate students' interest and improve their academic achievement. In a similar manner, students' interest in Geography can be boosted or enhanced by Non-Governmental Organizations (NGO) who can play a vital rule in stimulating and sustaining students' interest in studying Geography. This they can do through provision of practical learning experiences, educational resources and opportunity for environmental engagement. To do this, the state government can engage the NGOs in Geography curriculum implementation in senior secondary schools in the state by giving of scholarship to students in order to enhance their interest in the subject. Again, the NGOs can as well organize workshops and professional development programs that can equip Geography educators with innovative teaching techniques. This can foster students' interest in Geography, thereby reducing its teachers' attrition in the state, thereby enhancing and motivating students to study the subject at senior secondary school level.

Two research questions and two null hypotheses guided the study:

1. What significant impact can be established based on the achievement scores of Geography students taught using the expository (conventional) method and those taught using hands-on-activity instructional package?
2. What significance can be established on the mean interest scores of Geography students taught using expository (conventional) method and those taught using hands-on-activity instructional package?

H₀, There will be no significant difference in the mean achievement scores of Geography students taught using the expository method and those exposed to hands-on- activity instructional package.

H₀. There is no significant difference in the mean interest scores of Geography students' using expository (conventional) method and those exposed to hands-on-activity instructional package.

Method

The study employed quasi-experimental design based on pre-test, post-test non-equivalent control group. Ebonyi State was the study area with its fascinating physical features that encourages good geography studies with a reasonable number of secondary schools in the area teaching the subject. The population of the study was 617 SS II students offering Geography at the senior secondary school certificate examination. Multi-stage sampling technique was adopted and this was done by stratifying the state based on the three education zones. In the second stage of the sampling, the schools were stratified into four LGAs and with the use of simple random sampling technique, a sample size of 94 was drawn. Fifty-five (55) students were assigned to the treatment group (hands-on-activity instructional package), while 39 of them were placed on the control group (expository conventional method)

The instrument for data collection was a 50-item Geography Achievement Test (GAT) duly validated and subjected to reliability test using Kuder – Richardson 20 (K –R 20) approach. A reliability coefficient of 0.97 was obtained showing that it was reliable for the study. The Geography teachers involved in the study were briefed on the use of GAT who administered it to all the students in order to obtain the pre-test scores and later taught the experimental group using hands-on-activity instructionalS package for six weeks. The post test was administered to both groups again using the same instrument. Mean and standard deviation were used to answer the research questions, while Analysis of Covariance (ANOVA) was used to test the null hypotheses at an alpha level of 0.05.

Results

Research Question 1: What significant impact can be established based on the achievement scores of Geography students taught using the expository (conventional) method and those taught using hands-on-activity instructional package.

The data that answered research question 1 for the study are presented in Table 1

Table 1: Mean achievement scores of Geography students exposed to hands-on-activity package and those limited to the expository method (conventional)

Instructional Package	No	Pre-Achievement Test Mean	SD	Post-Achievement Test Mean	SD	Mean Gain
Hands-on-activity	55	44.78	6.69	53.45	7.31	8.67
Expository (Conventional)	39	23.79	4.88	29.38	5.42	5.59
Mean gain difference = 3.08						

Table 1 is the presentation of the performance scores of Geography students exposed to hands-on-activity package and their mates limited to the conventional expository approach before treatment. The achievement scores recorded were 44.78/6.69 and 23.79/4.88 for their means/SD respectively. After treatment, the post-achievement scores were 53.45/7.31 and 29.38/5.42 for their post-means and SD respectively for the hands-on-activity package and the conventional approach groups. A recorded mean achievement gain difference of **3.08** was achieved as can be seen in the table, implying that hands-on-activity instructional package enhanced the achievement scores of geography students exposed to it.

H₀₁ There will be no significant difference in the mean achievement scores of Geography students taught using the expository approach and those exposed to hands-on activity instructional package.

The data that was obtained after testing the null hypothesis for the study is presented in Table 2 using ANOVA

Table 2: ANOVA t est for overall mean achievement scores of Geography students exposed to the 2 approaches at 0.05 level of significance.

Source of Variation	Sum of Square	Df	Mean Sum of Square	F-Cal	Test of Significance of F.
Covariates	17713.440	1	17713.440	380.218	.000
Pre-test	17713.440	1	17713.440	380.218	.000
Mean effects	758.880	3	252.960	5.430	.002
Methods	613.412	1	613.412	13.167	.000

From Table 2 above, the result of the test revealed that the alpha level of 0.05 is greater than the P-value of .002 and this implies that the null hypothesis is rejected. This is because there was a significant difference in the mean achievement scores of students taught or exposed to both approaches in favour of hands-on-activity instructional package.

Table 3: Differences in the interest mean scores of the experimental and the control groups

Groups	N	Pretest	Posttest	Mean Gain
Experimental	55	52.30	62.56	10.26
Control	39	57.64	60.25	8.61
Difference in Mean Gain				1.56

The result of data analysis in Table 3 revealed that the students in experimental group made a pretest main score of 52.30 and posttest main interest score of 62.56 with a main gain of 10.26. On the other hand, those in the control group also made a pretest score of 57.64 and posttest interest mean score of 60.25 with a mean gain of 8.61. The data analysis in Table 3 established the overall interest main gain of 1.56, which means that the utilization of hands-on-activity instructional package enhanced Geography students' interest with a mean gain of 1.56.

Table 4: ANCOVA r result on Geography students' interest by instructional approaches

Source	Sum of squares	df	Mean square	F	Significance
Hand-on-activity instructional package	2874.425	1	2874.425	48.306	000
Expository	2644.2002	1	2644.2002		001
Error	6961.714	117	59.502		

P = 0.05

From the result in Table 4, the null hypothesis is rejected since the P value =000 is less than 0.05 alpha level. This means that there is a significant difference in the interest mean scores of students taught Geography using hands- on - activity instructional package and those taught with expository teaching method.

Discussion

The study examined how hands-on-activity instructional package can enhance Geography students' interest and achievements in Ebonyi State. Table 1 presents a clear picture of both the pre-test and post-test based on the two approaches of teaching. The result showed a mean gain of 8.67 and 5.59 respectively with a mean gain difference of 3.08 in favour of hands-on-activity instructional package. The data analysis in Table 3 established the overall interest main gain of 1.56, which means that the utilization of hands-on-activity instructional package enhanced Geography students' interest with a mean gain of 1.56. This means that the package boosted the interest of the Geography students more than the expository or conventional method

These findings are in line with the viewpoints of Emesini, (2022) when she emphasized that Geography is a practical field-based study and students can only be interested if they practice what they are taught. Again, Ikumelu (2021) and Akuma and Oteh (2022) found that hands-on-activity instructional package allows students to practice what they are learning and this draws their interest and enhance their achievement in the subject. The achievement mean gain of 3.08 and 1.56 interest mean gain in Tables' 1 and 3 respectively are pointers to the enhancing power of hands-on-activity instructional package.

Furthermore, ANOVA procedure was used to test the overall mean achievement and interest scores of the students exposed to the two methods at 0.05 level of significance as seen in Tables 2 and 4 respectively. The result showed that the alpha level of 0.05 is greater than the P-values of .002 and .001, implying that the null hypotheses were rejected because of the significant differences. This confirmation buttressed further the stand point of Disha (2023) for the need to create experiences for students in the classroom which is 'doing it yourself'. According to Nnamani (2023), the proper mapping out of learning activities leads to good learning outcomes which is the result of applying hands-on- activity instructional package. The functional application of this approach makes the study of Geography easy because, the

subject is field work based and only the application of this new approach can achieve this purpose for sustained students' interest and achievement (Emesini *et al*, 2022)

Conclusion

From the findings of the study, it is obvious that since Geography is a subject that helps in national development and global connections; a functional approach to its study becomes imperative. The application of hands-on-activity instructional package is that it tends to boost the interest and achievement of the students. Geography teachers in schools in Ebonyi State are still battling with pedagogical approaches to its study and need to have a re-think on how to boost the students' achievements and interest in the subject.

From the findings of the study, it was revealed that the use of hands-on- activity instructional package enhanced the achievements and interest of the students with mean achievement gains of 3.08 and 1.56 respectively. In conclusion, the adoption of diverse pedagogical approaches to boost the interest and achievements of learners in diverse subjects is needful for sustainable national development and global connections in this 21st century.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. The Ebonyi State Government as a matter of urgency should organize training and re-training programmes for teachers in the state in the adoption of functional pedagogical approaches in the teaching of key subjects.
2. The State Government should liaise with NGOs and support groups to re-equip schools with modern equipment for practicalization of subjects like Geography.
3. Federal and State Governments in Nigeria should mount scholarship programmes for students who are ready to study Geography education in order to curb the attrition of teachers of the subject.

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