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Research Article

Effect of Gaming Strategy on Students' Interest and Achievement in Learning Economics in Public Senior Secondary Schools in Nasarawa State, Nigeria

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Abstract

The study examined the effect of gaming strategy on the interest and achievement of students engaged in the study of Economics in public senior secondary schools in Nasarawa State of Nigeria. Two research questions and two hypotheses based on achievement and interest were formulated for the quasi-experimental study. A sample 120 SSII students consisting of two intact classes was selected for the study. The instruments used for data collection were a 50-item Economics Achievement Test (EAT) and an Economics Interest Scale. The instruments were validated through the rational appraisal of experts in Mathematics and Educational Measurement and Evaluation obtaining a logical validity index of 0.72. The test instruments were further subjected to trialing on a sample pilot of 30 students within the study population but outside the sampled schools. Obtained data were utilized to obtain *Coefficient of Internal Consistency* (reliability index) of 0.75. The research questions were answered using mean and standard deviation while the hypotheses were tested using analysis of covariance (ANCOVA). The findings from the study indicated that there is a significant difference in the mean achievement scores of students taught Economics using gamification strategy and their counterparts taught with teacher expository method. Similarly, a significant a difference was observed in the mean interest scores of students taught economics using gaming strategy and those taught with teacher expository method. The study recommends that teachers of Economics should familiarize themselves with the use of games for improving the students' learning effectiveness and sustained interest. Also, teachers should be trained on the use of gamification strategy for sustaining interest in Economics. The study concluded that use of gaming strategy enhances

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students learning interest and achievement in Economics public senior secondary schools in Nasarawa State.

Keywords: Gaming strategy, Economics education, academic achievement, learning interest, secondary school students, teacher-expository method, Nasarawa State.

Introduction

The effectiveness of Economics teaching in Nigerian secondary schools depends largely on the instructional strategies employed by teachers (Uzoechi, 2012). Beyond mastery of subject content, teachers are expected to utilize innovative and learner-centered strategies that enhance students' interest and academic achievement. According to Anikweze (2013), differences in students' learning outcomes may occur even when teachers use the same teaching method, largely due to variations in the innovative strategies adopted during instruction. Similarly, Adeyemi (2022) found that gaming strategies improved students' academic achievement, while Adeyemi (2012) attributed poor interest and achievement in Economics to teachers' limited use of innovative instructional approaches.

Despite the recognized benefits of active learning, many Economics teachers still rely on teacher-centered methods characterized by lectures, rote memorization, and limited student participation (Uzoechi, 2012). Teacher-expository strategy places learners in passive roles, with little opportunity for engagement (Eferen, 2016). In contrast, instructional games are structured learning activities involving rules, competition, and interaction aimed at achieving specific educational objectives (Paulo & Snieder, 2011; Anikweze, 2013). Such strategies promote active participation and can stimulate students' learning interest.

Learning interest, which reflects learners' disposition toward a subject, plays a vital role in academic success (Olumide, 2016). Students with high interest actively participate in learning activities, while those with low interest tend to remain passive. Academic achievement, on the other hand, refers to learners' ability to acquire, retain, and demonstrate knowledge and skills. According to Adeniyi and Aderinkola (2023), achievement is a key indicator of educational success. Consequently, innovative strategies such as gaming may enhance both students' interest and achievement in Economics.

The persistent decline in Economics achievement among senior secondary school students in Nasarawa State has raised concerns among educators and stakeholders. Factors such as inadequate instructional resources, poor learning environments, ineffective school management, and limited use of innovative teaching strategies have been identified as possible causes. This situation underscores the need for more engaging and learner-centered approaches to Economics instruction.

Empirical studies have demonstrated the effectiveness of gaming and simulation strategies in improving students' interest and achievement. Sumbabi and Bassey (2013) reported that students exposed to mathematical games and simulations showed greater interest than those taught conventionally. Anikweze (1988) found significant achievement gains among students taught through gamification, while Anikweze

(2018) emphasized the role of continuous assessment in evaluating learning outcomes. Katmada, Mavridis, and Tsiatsos (2014) highlighted the usefulness of educational games in supporting mathematics learning. Likewise, Tsehwang (2022) found that simulation games significantly improved students' academic performance. Achor, Imoko, and John (2010) also reported significant differences in achievement and interest among students taught using games and simulations.

Collectively, these studies demonstrate the potential of gaming strategies to improve students' learning outcomes. However, limited evidence exists regarding their effectiveness in teaching Economics in public senior secondary schools in Nasarawa State. This gap necessitates further investigation into the effect of gaming strategy on students' interest and academic achievement in Economics, which forms the focus of the present study.

Research Questions

The following research questions guided the study:

1. To what extent do the mean scores of high and low interest groups taught Economics with instructional games differ from those of their counterparts taught with teacher exposition in public senior secondary schools in Nasarawa State?
2. To what extent do the mean achievement gain of students taught Economics with instructional games in public senior secondary schools in Nasarawa State differ from those of their counterparts taught with teacher expository method?

Research Hypotheses

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

1. There is no significant difference in the mean scores of high and low interest groups taught Economics with instructional games and those of their counterparts taught with teacher expository method in public senior secondary schools in Nasarawa State.
2. There is no significant difference in the mean achievement gains of students taught Economics with instructional games and those of their counterparts taught with teacher expository method in public senior secondary schools in Nasarawa State.

Theoretical Framework

This study is anchored on Flow Theory, developed by Mihaly Csikszentmihalyi between the 1970s and 1990s. The theory emerged from studies of artists, athletes, chess players, and other professionals who described their most rewarding experiences as involving intense concentration, loss of time awareness, effortless control, and intrinsic enjoyment. Flow refers to a state of optimal experience in which an individual becomes fully immersed in an activity. This state occurs when the challenge of a task is appropriately matched with the individual's skills.

In education, Flow Theory emphasizes the design of engaging learning activities that sustain students' attention and motivation. The theory is relevant to this study because gaming strategies provide challenging and interactive learning experiences that can promote students' interest and improve their achievement in Economics. Therefore, Flow Theory provides a suitable framework for examining the effect of gaming strategy on students' interest and academic achievement.

Methodology

Quasi-experimental research design was used in this study. The population of the study comprised 10,692 SSII Economics Students in 230 Public Senior Secondary Schools in Nasarawa State. The sample for the study consisted of two intact SSII classes with 60 students each. The instruments used for data collection were researcher-developed 50-item Economics Achievement Test for assessing students' academic achievement and an Economics Interest Scale (EIS) for ascertaining the level of interest in Economics before and after the experiment. The instruments were subjected to the scrutiny of experts in Economics, Research and Educational Measurement and Evaluation for logical validation. Scores from their appraisal were used to obtain rational validity indices of 0.72 and 0.78 for the test and the interest scale respectively. Functional validity was also obtained for the test through a table of specification covering the lesson topics on migration, mobility of labour, unemployment and international trade along with the process objectives according to Bloom's Taxonomy. The instruments were further subjected to pilot testing through which reliability indices of 0.75 and 0.77 were obtained for the test and interest scale respectively. Mean and standard deviation were used to answer the research questions while analysis of variance (ANOVA) was used to test the hypotheses at the 0.05 level of significance.

Results and Discussion

Research Question 1

To what extent do the mean scores of high and low interest groups taught Economics with instructional games differ from those of their counterparts taught with teacher exposition in public senior secondary schools in Nasarawa State?

Table 1. Students' Interest in Economics by Treatment Group and Interest Level.

S/No	Variables	N	High Interest Group Mean	SD	Low Interest Group Mean	SD	Mean Difference
1.	Instructional Games	60	25.1	4.96	18.3	4.59	6.8
2.	Teacher Exposition	60	19.6	5.03	16.9	2.35	2.7

Table 1 shows the mean and standard deviation scores of high and low interest groups taught Economics using instructional games and teacher expository strategy. Results indicate that for games strategy, the mean and standard deviation scores for the high interest group were 25.1 and 4.96 respectively compared to those of their counterparts in the low interest group indicated as 18.3 and 4.59. The Control Group contacted with teacher expository strategy recorded mean and standard deviation scores of 19.6 and 5.03 respectively for the high interest group while those of the low interest group were 16.9 and 2.35. The table shows that the mean difference of interest scores for the experimental group was 6.8 which is greater than that of the control group 2.7 suggesting a marked differential effect of gamification on interest of the subject variable.

Research Question 2

To what extent do the mean achievement gain of students taught Economics with instructional games in public senior secondary schools in Nasarawa State differ from those of their counterparts taught with teacher expository method?

Table 2. Students' Achievement Gain Scores by Treatment Group**.**

S/No	Variables	N	Pretest Mean	SD	Posttest Mean	SD	Mean Achievement Gain
1.	Instructional Games	60	7.40	2.72	28.5	5.34	21.10
2.	Teacher Exposition	60	7.30	2.70	25.1	5.01	17.80

Table 2 shows the posttest and pretest mean scores of students taught Economics using two differing strategies, namely: games strategy and teacher expository strategy in public senior secondary schools in in Nasarawa State. Results indicate that the pretest mean and standard deviation of scores from the achievement test for the experimental group were 7.40 and 2.72 respectively while the posttest mean and standard deviation scores were 28.5 and 5.34. respectively. This implies mean achievement gain of 21.10. For the Control Group treated with teacher expository strategy, the pretest mean and standard deviation of academic achievement scores were 7.30 and 2.70 respectively while the posttest mean and standard deviation mean scores were 25.1 and 5.01 respectively, thereby giving mean achievement gain of 17.80. Clearly, the mean achievement gains of students taught using games strategy was higher than that of the Control Group (21.10 > 17.80).

Hypothesis 1: There is no significant difference in the mean scores of high and low interest groups taught Economics with instructional games and those of their counterparts taught with teacher expository method in public senior secondary schools in Nasarawa State.

Table 3. ANCOVA Results for the Effect of Instructional Strategy and Interest Level on Students' Achievement in Economics**.**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	288.741[a]	2	144.371	4.675	.036
Intercept	1738.243	1	1738.243	28.142	.000
Pre-test	460.546	1	460.546	3.774	.000
Group	288.741	1	288.741	72.03	.000
Error	2841.259	115	24.707	7.317	.000
Total	67078.000	120			
Corrected Total	3130.000	119			

Table 3 shows analysis of variance for testing the significance of the difference in mean scores of high and low interest groups taught Economics with instructional games and those of their counterparts taught with teacher expository strategy. The results showed that the value of F = 7.317 with two degrees of freedom (1, 115) and p-value of 0.000 is less than 0.05 confidence level. Hence, we are encouraged to reject the null hypothesis and conclude that there is a significant difference in the mean scores of high and low interest groups taught Economics with instructional games and those taught with teacher exposition.

Hypothesis: There is no significant difference in the mean achievement gains of students taught Economics with instructional games and those of their counterparts taught with teacher expository method in public senior secondary schools in Nasarawa State.

Table 4. ANCOVA Results for Differences in Students' Economics Achievement by Instructional Strategy**.**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	472.580[a]	2	236.290	48.123	.000
Intercept	198.138	1	198.138	20.176	.000
pretest	43.123	1	43.123	4.595	.000
strategies	472.580	1	472.580	171.09	.000
Error	451.733	115	3.93	3.07	.000
Total	37721.000	120			
Corrected Total	924.312	119			

Table 4 shows analysis of variance for testing the significance of difference in the mean achievement gains of students taught Economics with instructional games and those taught with teacher expository strategy. The results showed that the value of F(1, 115) is 3.07, and with p-value of 0.000 less than the set rejection level of 0.05, the second null hypothesis is equally rejected. There is strong evidence from the study that a significant difference exists between the mean achievement gains of students differentially taught Economics with Instructional Games and teacher expository method in public senior secondary schools in Nasarawa State.

Discussion of Results

Findings from the study provide a strong indication that use of games for teaching Economics has profitable value to students that have demonstrated overt interest in the subject. Hypothesis 1 reveals that there is a significant difference in the mean scores of high and low interest groups taught Economics differentially with games and the sue of teacher exposition. This finding is in agreement with the findings from the study of Achor, Imoko and Ajai (2010) which indicated significant gender-related differential effects of use of instructional games and simulation on mathematics achievement and interest of senior secondary school students in Gwer West Local Government Area of Benue State. This indicates that the use of games and simulations not only leads to gender differences in achievement but also has effect on learning interest of students.

Findings from the study on hypothesis two reveal that there is a significant difference in the mean achievement gains of students differentially taught Economics with instructional games on the one hand and with teacher expository strategy on the other. This finding is in agreement with the findings of Tsehwang (2022) which showed there was significant effect of simulation games in improving secondary school students' academic performance. This indicates that students tend to perform better when taught using simulation games strategy as such strategy tends to improve the scores of learners in tests and examinations.

Conclusion

The study examined the effect of using gaming strategy on students' academic achievement and learning interest in the study of selected Economics concepts in Nasarawa State Secondary Schools. Findings indicated there is a significant difference in the mean interest scores of students taught Economics with instructional games strategy and those taught with teacher expository strategy, Furthermore, a significant difference exists between the mean achievement gains of students differentially taught Economics with Instructional Games and teacher expository method in public senior secondary schools in Nasarawa State. The study recommended that public schools in Nasarawa State be equipped by the State Ministry of Education with instructional games for teaching Economics and other Social Sciences in other to excite and sustain the interest of learners Furthermore, economics teachers should be encouraged to attend national

association conferences, seminars and workshops through which they would acquire knowledge on the use of innovative strategies such as gamification for improved students' achievement and interest.

References

Achor, E. E., Imoko, B.I. & Ajai, J.T. (2010). Effects of Games and Simulation on gender-related differences in Mathematics Achievement and Interest of senior secondary school students in Gwer West Local Government Area of Benue State. *https://www.google.com/search*

Adeniyi, A. A and Aderinkola, D (2023). The effect of virtual learning on students' academic performance in mathematics in post Covid-19 era. *AJSTME,* Vol. 8, Special Issue No. 1, 456-462, August, 2022. https://www.ajstme.com.ng

Anikweze, C. M. (2018). *Measurement and Evaluation for Teacher Education, 4th Edition*. Onitsha: Shiloh Press Associates Ltd.

Anikweze, C. M. (2013). *Essentials of Instructional Technology*. 2nd Edition Kaduna: GOFATS Printing and Publishing Ventures.

Anikweze, C.M. (1988). *Evaluating the Effectiveness of the Use of Models, Games and Simulations for Teaching Geography in Nigerian post primary schools.* Unpublished PhD. Thesis submitted to the Faculty of Education, University of Nigeria, Nsukka.

Eferen, A. (2016). *Expository Teaching*. Downloaded at www.slideshare.neton the 6th of March, 2025.

Katmada, A. Mavridis & Tsiatsos, T. (2014): Implementing a game for supporting learning in mathematics. *The Electronic Journal of e-learning vol.1. (12), 230-242*.

Olumide, A. (2016). Effects of Games and Simulation on the Learning Achievement and Interest of Economics Concepts in Nasarawa State Secondary Schools. A PhD Thesis Submitted to the School of Postgraduate Studies, Nasarawa State University, in Partial Fulfilment for the Award of PhD in Educational Measurement and Evaluation.

Paulo and Snieder, (2011). *Concept of Instructional Games*. Downloaded at www.afrrleuujo.com

Sumbabi, U. T. & Bassey U. A. E. (2013): The effect of mathematical games and simulations on senior secondary students' interest in geometry. Retieved 19th November, 2014 from http:/www.transcampus.org/JORINDVII dec.2013.

Tsehwang, D. (2022) The effect of Simulation Games in improving Secondary School Students' Academic Performance. *International Journal of Social Science Learning*. 3(1);48-64.

Uzoechi, B. (2012). New Innovations in Teaching and Learning Mathematics. A paper presented at a Conference in Education at the Nasarawa State University, Keffi, June, 2012.