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Effect of Board Games on Achievement in Social Studies Concept among Public Primary School Pupils in Osun State, Nigeria

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Abstract

The research was designed to find out Effect of Board Game on Achievement in Social Studies concept among public Primary School Pupils in Osun, State, Nigeria” The study adopted a pretest, posttest, control group quasi experimental research design. A purposive sampling technique was used in selecting 80 students from six selected schools in Osun State. Social studies Achievement Test (SSAT) with reliability coefficients of 0.85 was used to collect data, The instrument was validated by educational technology lecturers in the department of educational technology in university of Ilesa. One research question and three research hypotheses were generated and tested. mean, standard deviation, and Analysis of Covariance (ANCOVA) were used to answer the research questions and test hypothesis at 0.05 level of significance. Results revealed that the Board Game had a significant effect on students’ achievement in social studies. The use of Game based strategy should therefore be encouraged in Nigerian schools to improve learning outcomes. The game is recommended as an appropriate and effective learning tool for developing social responsibilities in Nigerian Schools.

Keywords: Board Game, students’ achievement, Social studies

Introduction

Throughout human history, and its attendant civilizations, education has a potent means of the agents of socialization and development of the citizens. Education has proven to be the only sustainable means of responding to the ever-changing needs of human society. The level of Nigeria's national development depends on how efficiently and effectively Nigerian society deploys its resources and educational structures to meet these needs. Although, it is truism that Nigeria needs are intractable and dynamic, the progressive and successful society ensure that the educational system responds to, or moves in tandem with its ever changing needs (Okon and Seabass 2023). Thus, education is essential to the individual as well as the community for its development. This is so because a nation cannot rise above the quality of its education, educational aims are channels towards meeting the needs of the particular nation in which it is given. Social Studies has a rich curriculum. Its contents are structured in such a way that, it is capable of developing the individual into a responsible citizen. The knowledge, attitude, values and skill needed in a social world are taught to learners at whatever level of the educational system in Nigeria. The discipline is an adaptive subject. It derives most of its contents from the Social Sciences.



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Social studies is a subject that blends together relevant learning experiences from the social sciences for the purpose of effective and productive teaching. Brunner in Nwalado (2020) insisted that Social Studies Education in Nigeria projects knowledge about people, their environment and the society in which this people live and interact socially, politically, economically, involving the use of diverse means of communication and social engagements. The authors agreed that Social Studies Education in Nigeria could achieve its goals by utilizing the knowledge (concepts) and skills that could be shifted from each and or all the social sciences to promote reasonable, dependable and reliable individual in their immediate and larger society. Scholars have written extensively on the concepts of social studies education and other related concepts. For instance, Michael M. Crow and William B. Dabars (2015). stated that the "concept of an educated man is incompatible with being narrowly specialized." A wholesome education has to do with what is valuable and of worth in the general sense. The fundamental thing is to find the type of experiences that are worth having not for the Moment, but because of what they lead to; the questions they raise, the problem they create, the demands for new information they suggest, the activities they invoke, the large expanding fields into which they continuously open. Consequently, Social Study is defined as the study of people in relationship to each other and their world. It focuses on people's relationship with their social, physical, spiritual, cultural, economic, political and technological environments. It teaches about human society, the past and presents, the way people interact with each other and the environment and how government works.

In a similar vein, Social Studies can also be defined as the integrated study of the social sciences and Humanities to promote civic competence. It uses integrated approach to equip its learners with skills and knowledge to make them become active and responsible citizens. Social Studies Education is said to be inter-discipline and integrated because it draws upon many subjects including Sociology, Political Science, History, Economics, Religious studies, Geography, Psychology, Anthropology and Civics Okon, C. E., and Nseabasi, A. S (2023). Hence, Social Studies education tackles issues that are challenging to man, such issues include: poverty, crime, public health, technology, international communities, HIV/AIDS, social cultism, terrorism, militancy, communal and religious crises, socio-political crises, vandalism, corruption among others. The subject also focuses on man's interaction and relationship with one another and the environment. It studies human behavior, past and recognizes differences in cultures and religions. Man is always in constant relationship with fellow human beings as well as his natural and man-made environments. The scope of Social Studies Education includes Civic Education. This implies that, Social Studies as a subject that imparts skills, knowledge and attitude required of learners to be good and responsible citizens. Learners learn about government; how it operates, democracy, rights and responsibilities of citizen's rule of law and public affairs. (Okon and Nseabasi, 2023). Objectives of Teaching and Learning of Social Studies Education The proper articulation of the aim and objectives of Social Studies has continued to enhance the popularity of the subject. Nnamani and Oyib (2016). the Nigeria Social Studies programme was meant to realize the following objectives. (i) to improve and broaden the basis of Nigerian educational system which has been criticized from time to time as narrow and unimaginative; (ii) to help Nigeria teachers, pupils and students to discover what is good and unique in the physical, social, economic and cultural traditions which hitherto have been implied or neglected. (iii) to develop, encourage and strengthen enquiring minds in pupils and students.

Sustainable development according to Bruthland Commission (1987) is the "development that meets the needs of the present without compromising the ability of the future generations to meet their own needs". Sustainable development as opined by Ajayi and Afolabi (2009) entails better living conditions for all citizens; producing more nutritious and very sumptuous food for all citizens to eat; individuals living healthier, happier and more comfortable life; sound education and enlightenment among the populace; improved transportation and communication system; scientific and technological advancement, gainful employment for all citizens. United National Millennium Development Goals (MDGs) showed that countries lagging behind including Nigeria, were hindered by inability to deliver service effectively and efficiently to the grassroots or community level (Ejiogu, 2015 and Ki-moon, 2015). Adams (2006) presented an illustrated definition of sustainability with special reference to the three pillars of social, environmental and economic sustainability. According to Ban Ki-moon (2015), the MDGs No. 2 on achieving universal primary education has laid foundation for the new sustainable development goals (SDG) No. 4 on inclusive education for sustainable development. The country's failure in the past twenty-two (22) years is a direct result of poor leadership. Some indices of social sustainability in the country in the country are mortality rate (maternal and infant), unemployment, literacy rate. A game can be described as pleasurable activities that are performed within particular rules, for a limited time and in place, in which individuals participate voluntarily, carried out with mental and physical abilities and gained some social behaviors. Games and mental health encompass the complex interplay between play, game-related activities, and psychological well-being throughout human development. Play is recognized as a fundamental activity that facilitates learning, social interaction, and emotional expression across the lifespan. As children engage in games, they not only develop cognitive



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and motor skills but also navigate social dynamics and emotional challenges, reflecting their developmental stage. This engagement can promote identity development and serve as an essential outlet for stress relief and social bonding. Games are very important for physical, mental and emotional development. A game as an educational tool can be a good idea, as with any kind of learning the most important challenge is to spur interest in learners. It ensures that the end result is enjoyable and fun rather than just reading a textbook. An educational game is a game designed to teach people, typically children, about a certain subject or to help them learn a skill as they play the game. Some people call these types of games “edutainment” because they combine education and entertainment. Educational games will train the child's ability to solve problems and think logically (Lee et al.,2014). According to Adipat et al.,(2021) games are fun activities that promote interaction, thinking, learning, and problem solving strategies. The young learners can learn about healthy competition or fair play, since they must follow the instruction and the rule of the game. Byusa, et al (2022) described game as pleasurable activities that are performed within particular rules, for a limited time and in place, in which individuals participate voluntarily, carried out with mental and physical abilities and gained some social behaviors. Games are very important for physical, mental and emotional development.

Snakes and Ladder is an example of board games. It is a popular board game around the world. The Snake and Ladder game is believed to have originated in 2nd century B.C. in India by the name of “Paramapada Sopanam” (*Ladder to Salvation*) (Bornet and Burger (2012)). The game was developed by teachers and marketed as a children’s game. Snake and ladder is a classic board game. Its main attraction is that some parts of the board are represented by ladders and snakes. It needs a dice in order to play the game and take turns and the board is numbered from 1 to 100 according to the total cells in the board. When the dice results in a position with a snake, the user is” pulled down” and reaches the other end of the snake—thus slowing down the progress to traverse the entire board. The ladder, on the other hand promotes the user to a higher position. This basic game has been adapted to be an educational game in which players answer questions while playing. The game of Snakes and Ladders facilitates learning about counting, life, interaction and socialization. In this game, implicitly, the students can learn about the ups and downs in life or about joys and troubles. In addition, the young learners also learn about fair play, patience, and how to take turn. As a result, therefore, the study set out to design Snake and Ladder game to teach and reinforce social studies concept in the JSS 2 social studies curriculum. It was hoped that playing the game, which requires working together in a team or group would develop learners’ ability to socialize with one another amongst other outcomes. The rule guiding Snake and Ladders game was applied in this study.

In spite of the number of teaching pedagogy which we have identified in social studies, teaching based on a board game has come to be adopted in this paper because of its effectiveness in teaching. It can also be seen as “a teaching pedagogy where the teacher and the students are allowed to examine an idea, event, issues, problems and questions freely, with minimum guidance from the teacher and then seek information to answer or solve the problem. In using this method, students are not just fed with information but are made to be active in the-learning situation. Unlike other traditional methods of teaching where the learners are passive, teaching with this Snakes and Ladders Game is more effective because the learners participate fully in the teaching and learning. Differences between boys and girls in time spent playing games seem to decrease (Nguyen et al., 2022)). Boys not only spend more time playing games than girls, they also prefer to play different kinds of games. Boys tend to prefer action games (First Person Shooters, fighting, and sports games), while girls show a preference for playing simulations (virtual world and virtual life games) and puzzle games. No gender differences are found with most other genres, such as role-play games and adventure games (Taylor and Francis 2014). These differences in preferences between boys and girls seem to be related to a different motivation to play games. Boys tend to be more motivated to outdo other players (performance-only or performance combined with mastery-achievement goals), while girls are less motivated by both performance and mastery-achievement goals.

The Nigerian society is characterized by high level of distrust and suspicion and nearly everybody has become a suspect of misplaced value. Immorality and lack of sanctity of life have increased. Vices such as murder, kidnapping for ransom and ritual have become the order of the day that pervades Nigerian society; with patricide, matricide, infanticide, fratricide and even suicide all in pursuit of materialism. Endemic corruption has polluted the character and personality of every Nigerian. The importance of positive value orientation for any nation’s development cannot be over emphasized. Vices have taken the place of virtues while merit is damaged or denuded. These negative values have replaced the positive values needed for sustainable development. The Need for Value and Attitudinal Re-orientation through Social Studies Education The need for attitudinal and value re-orientation has for long been recognized as the best way to address the myriads of societal problems confronting the Nigerian society. Consequently, successive administrations have articulated and pursued re-orientation programmes in one form or the other. It is regrettable, however, that despite all the attempts, programmes and interventions nothing can be seen in concrete

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terms. These vices can only be eradicated if Social Studies is well taught in schools most especially with the use of instructional materials that will facilitate effective and efficient lesson delivery in class which can lead to attitudinal change. This study therefore examined the effects of board game (based on the principles of Snakes and Ladders game) on the achievement of primary five pupils in some selected topics in Social Studies.

Research Question

What is the mean difference in achievement scores of pupils taught social studies using board games and those exposed to traditional method in Osun State?

Hypotheses

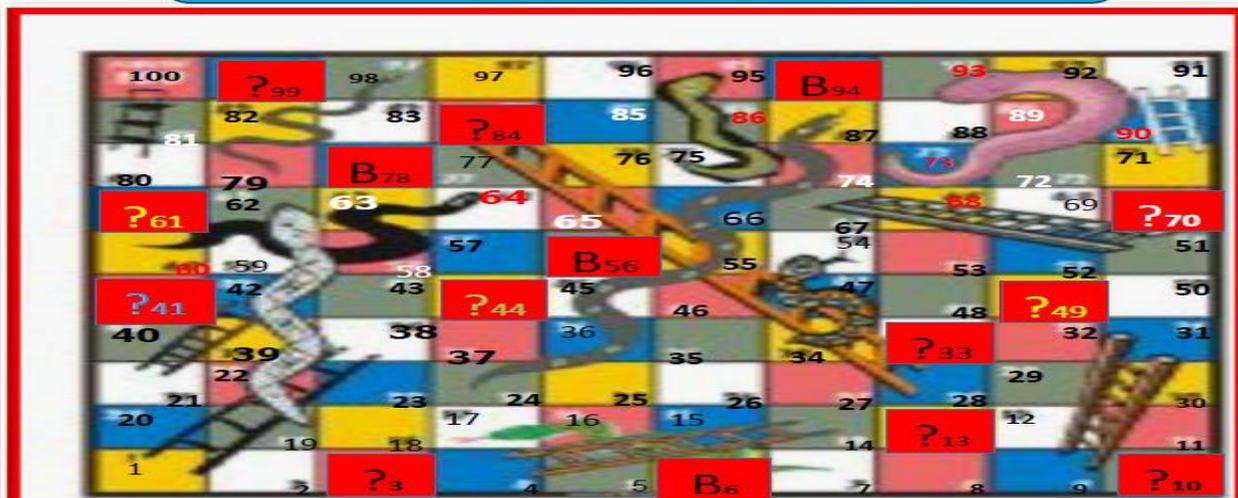
- Ho₁: There is no significant mean difference between the mean difference in achievement scores of pupils taught social studies using board games and those exposed to traditional method in Osun State
- Ho₂: There is no significant mean difference between the mean difference in achievement scores of male and female pupils taught social studies using board games in Osun State
- Ho₃: There is no significant interaction effect of treatment and Gender on achievement scores of pupils taught social studies using board games in Osun State

Methodology

The study used a pretest, posttest, control group quasi experimental research design. A purposive sampling technique was used in selecting 80 students from six selected school in Osun State. Social Studies Achievement Test (SSAT), This instrument was developed and validated with reliability coefficient of 0.85. The level of comprehension of the students was tested on the following topics: meaning of democracy, pillars of democracy, election, voter's responsibilities and electoral malpractices. The test contains 20 multiple choice objective test items. It has two sections (a) containing demographic information such as name of school, students name, class, gender, age (b) contains the constructed test items, the options for the questions ranges from A to D. Two marks were awarded for each correct option and zero for wrong option and the total score was 60 marks. The questions covered the six levels of cognitive domain, that is, knowledge, comprehension, application, analysis, synthesis and evaluation. The Snakes and Ladders Board Game is the board game designed and validated by the teachers in secondary schools and instructional media technologist Served as an instructional material used to teach the experimental group. The board has 100 square boxes numbered from 1 to 100. The player starts by rolling a dice in order to know the box where to commence the game, the players move along until they encounter a ladder or snake. If a player lands at the tip of the snake's head, the group will be asked social studies related question by the question master, if they get the question right, they stay on the square if not they slide down to the square at the snake tail. If a player lands on a square that is at the base of a ladder, the group will be asked a social study related question by the question master, if right answer is given then move to square at the top of the ladder and continue from there

SNAKES AND LADDERS BOARD GAME

DESIGNED BY OLAIYA MARUF





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Question Bank

The Question Bank that contains items (related content) on the following topics; Influence of man on his environment, Other people in the family, Obligations and importance of tolerating other people in the family, Meaning and characteristics of responsible parenthood, Value that promote responsible parenthood are playing tools for the snake and ladder board. Options for the questions range from A to D. Students ascend by picking correct option while a wrong option leads to their descent.

Card: 1

1. Which of the following is a negative effect of human activity on the environment?

- A. Planting trees
- B. Building drainage
- C. Bush burning ✓
- D. Digging wells

Card: 2

7. One role of children in the family is to:

- A. Give orders
- B. Obey rules ✓
- C. Punish others
- D. Ignore parents

The board game and the materials for playing the game were validated by experts, Social studies professional teachers and educational media technologist for content and packaging. Based on their corrections and comments, necessary corrections were done by the researcher which made the game suitable for the study. Social Studies achievement Test (SSAT) was trial tested on 20 students apart from those used for the main study. The research was carried out for a period of twelve weeks: three weeks for pre- test, six weeks for treatment and three weeks for post-test. Data was analyzed using mean, standard deviation and Analysis of Co-variance (ANCOVA).

Presentation of Results

Research Question 1: What is the mean difference between the students exposed to the experimental group (Snake and Ladder Board game) and control group (Traditional Method)?

Table 3 Summary of the mean difference between the experimental and control groups in achievement scores

	N	Mean	Std. Deviation
Pre test score	80	27.46	9.026
Post test score	80	34.67	12.740
Means diff		7.21	



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The mean score of students (34.67) exposed to the intervention is higher than the mean score of those exposed to the Conventional method of teaching (27.46). The implication of this is that the treatment or intervention is effective and capable of improving academic performance of students in Social Studies

Ho₁ There is no significant mean difference between the mean difference in achievement scores of pupils taught social studies using board games and those exposed to traditional method in Osun State

Table 4 Summary of Analysis of covariance of posttest, achievement by treatment

Source	sum of square	df	mean square	f	sig	partial eta square
Corrected Model	10803.311	4	2700.828	100.366	.000	.843
Intercept	1885.820	1	1885.820	70.079	.000	.483
Pretest	2420.761	1	2420.761	89.958	.000	.545
Group	1916.478	1	1916.478	71.218	.000	.478
Gender	1740.727	1	1740.727	64.687	.000	.463
Group * Gender	1796.465	1	1796.465	66.759	.000	.471
Error	2018.239	75	26.910			
total	109010.000	80				
Corrected Total	12821.550	79				

Significant at P<.05

The table 4 shows that after adjusting for pretest scores, treatment had significant main effect on students' achievement in social studies in some selected topics ($F_{(1,2018)} = 71.218$; $p < 0.05$). This implies that the treatment contributed better to the performance of JSS2 students in some selected topics in social studies.

Ho₂: There is no significant mean difference between the mean difference in achievement scores of male and female pupils taught social studies using board games in Osun State

Table 5 Summary of Analysis of covariance of posttest, achievement by gender

source	sum of square	df	mean square	f	sig	partial eta square
corrected model	10803.311	4	2700.828	100.366	.000	.843
intercept	1885.820	1	1885.820	70.079	.000	.483
pretest	2420.761	1	2420.761	89.958	.000	.545
group	1916.478	1	1916.478	71.218	.000	.478
gender	1740.727	1	1740.727	64.687	.000	.463
group * gender	1796.465	1	1796.465	66.759	.000	.471
error	2018.239	75	26.910			
total	109010.000	80				
corrected total	12821.550	79				

The table 5 shows that after adjusting for pretest scores, gender had a significant main effect on students' achievement in some selected topics in Social studies ($F_{(1,2018)} = 64.687$; $p > 0.05$). The result shows that gender contributed to learning outcome of students in some selected topics in Social Studies

Ho₃: There is no significant interaction effect of gender and treatment on student achievement in some selected topics in Social Studies



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Table 6 Summary of Analysis of covariance of posttest, achievement by gender and treatment

Source	sum of square	df	Mean square	f	sig	partial eta square
Corrected Model	10803.311	4	2700.828	100.366	.000	.843
Intercept	1885.820	1	1885.820	70.079	.000	.483
Pretest	2420.761	1	2420.761	89.958	.000	.545
Group	1916.478	1	1916.478	71.218	.000	.478
Gender	1740.727	1	1740.727	64.687	.000	.463
Group * Gender	1796.465	1	1796.465	66.759	.000	.471
Error	2018.239	75	26.910			
Total	109010.000	80				
Corrected Total	12821.550	79				

The table 6 shows that after adjusting for pretest scores, the interaction between treatment and gender had significant effect on students' achievement in some selected topics in Social Studies ($F_{(1, 2018)} = 5.997$; $p < 0.05$). There is a positive effect on the interaction of gender and treatment on the learning performance of students in Social Studies

Discussion of findings

Summary of the mean difference between the experimental and control groups in students' posttest achievement scores, indicates that the treatment had improved posttest achievement scores for the experimental group over the posttest achievement scores of students in the control group that was exposed to conventional method of teaching. This shows that Snakes and Ladder board game had significant effect on the achievement Primary five Pupils learning outcomes in some selected topics in social studies. The theoretical implication of this result is that using board games could promote effective teaching and learning of Social Studies than the conventional method.

This result confirms with previous studies that have been carried out on the effectiveness of simulation games. Olaiya (2016) compared the lessons thought by traditional methods and lessons taught by using the games and observed that using games in lessons increases students' motivation as well as social and academic abilities. Hung et al., (2014) conducted a research on Effects of digital game-based learning on students' self-efficacy, motivation, anxiety, and achievements in learning mathematics. To evaluate the effectiveness of the proposed approach, an experiment was carried out on an elementary school mathematics course with quasi-experimental research design. The experimental results show that the game-based e-book learning model effectively promoted the students' learning achievement, self-efficacy, and motivation of mathematics. Akande (2017) carried out a quasi-experimental research design of pre-test and post-test control group on the topic; 'Effects of Mathematical games on the academic achievement of senior secondary school students in Nasarawa state'. The findings revealed that the students taught with the use of games had a greater mean score than their counterparts taught without the use of games.

Imoko and Isa (2015) embarked on quasi-experimental research using the pre-test and post-test on Impact of computer games on pupil's achievement in mathematics in primary school. The analysis of the data showed that the use of games learning approach improved significantly pupil's achievement in mathematics. Some studies may measure game-based math achievement of males versus females; whereas, others measure math achievement and teacher competency. The results of various studies in non-experimental, correlational analysis show that hands-on game scores and attitudes toward mathematics aligned significantly to students' scores on mathematical tests (Jong, 2015). The outcomes of quasi experimental control-group design show that students utilizing game-based learning repeatedly outperformed the students who did not utilize game-based learning (Tobias et al., 2014). Researchers contended that executing game-based learning to support education is critical to student achievement (Hsieh et al., 2016). Students become intrinsically motivated and register improvements on various attributes, including critical thinking, problem-solving, creativity, innovation, and communication. It is evident that Snakes and Ladders board games had significant effects on the achievement of Primary five Pupils in some selected topics in Social Studies. The summaries of ANCOVA shows that the treatment (Snakes and Ladders board game) had improved posttest achievement

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score compared to the control group (Conventional method). Furthermore, there was no significant difference between the achievement scores of male and female students. This may be because female like board game more than male, female s are more interested in a fun filled atmosphere than male. The interface of the game was also attractive to the students and this promoted the acceptability of the game by both gender. The game is also easy to play as does not require special skills before it can be played. The interaction of both gender and treatment had positive effect on the performance of students in some selected topic in civic education. This finding reveals that treatment and gender are two factors that can contribute to academic development of Social Studies.

Conclusion

The students' mastery of Social Studies concepts was promoted because game motivated the students' interest in learning Social studies, it provided alternative ways to help the students to learn Social Studies topics. It also promoted child centered learning because the students were actively involved in the teaching and learning process. Thus, game made teaching and learning more fun and this assisted the students to master the newly taught concept faster

Recommendations

1. Integration of Game-Based Strategies into Primary School Curriculum:

Educational stakeholders should incorporate game-based learning tools such as board games into the Social Studies curriculum at the primary level to enhance pupils' academic achievement and engagement.

2. Capacity Building for Teachers on Game-Based Learning:

Regular workshops and in-service training programs should be organized for Social Studies teachers to equip them with the skills to design, implement, and evaluate game-based instructional strategies effectively.

3. Policy Support for Innovative Teaching Methods:

The Ministry of Education and relevant agencies should formulate and implement policies that promote the use of interactive and innovative teaching methods especially board games as part of instructional practices in Nigerian primary schools.

4. Development and Distribution of Educational Board Games:

Educational technology experts and instructional designers should collaborate with curriculum developers to create contextually relevant and age appropriate board games tailored to the Nigerian Social Studies syllabus.

5. Further Research on Game-Based Learning Across Subjects and Demographics:

Researchers should investigate the effectiveness of board games and other game-based learning strategies across different subjects, regions, and learner characteristics (e.g., gender, socio-economic status) to build a broader evidence base for their application in Nigerian schools.

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