



ASSESSMENT OF INSTRUCTIONAL BOARD GAMES ON ACADEMIC PERFORMANCE OF PRIMARY SCHOOL PUPILS, LAGOS STATE, NIGERIA

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Abstract

The study examined the impact of an instructional board game on the academic performance of primary school pupils in Lagos State, Nigeria. A sample of 30 pupils was selected using convenience sampling techniques. The English Language Achievement Test and an Instructional Board Game were used as the research instruments. A quasi-experimental research design was adopted, and hypotheses were raised and tested, which showed a significant difference in the academic performance between pupils taught using the board game and those without the board game. It was recommended that instructional board games are a very good strategy in teaching and should be used as a new strategy in primary schools in order to enhance learning, and the government or school owners should start approving the use of instructional board games in classrooms to make learning fun.

Keywords: Board game; academic performance; Pupils; and Instructional Strategy.

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Introduction

A crucial step in the growth of the human being is education. It covers the entire process of human learning, including the dissemination of knowledge, the training of faculty, and the development of various talents. Another definition of education is the act of teaching, the practice of instilling moral values in the mind, or the development of character. It is a flexible tool for transformation. It is anticipated that education would influence or mold the social behavior of the learner. Education is a continuous process that is always meant to suggest mental well-being. In general, education encompasses all the factors that contribute to the shaping of an individual's growth. An individual's education lasts their entire life and ends upon death (Adesemowo & Sotonade, 2022).

Al-Shuaibi (2014) states that as education make it possible for a person to have a successful profession, it is frequently seen as the true success that lies behind all future success. Consequently, the development of one's physical, mental, emotional, social, and moral components of life is the aim of education. A person gains knowledge from the experiences he has during his life. Human life is based on education. Education is essential to human growth and development since it shapes and enhances personality (Chakma, 2022). From birth to death, man experiences transformation and change. These alterations could be of several kinds, including moral, emotional, mental, and physical. Growth always occurs when there is change. A living thing can change completely and take on a new form, which again allows for growth. Thus, while education is rising, it is also growing.

Nigeria's National Policy on Education (NPE, 2013) placed a strong emphasis on the importance of providing our kids with a quality education in order for them to develop the skills and competences necessary to contribute to society and address challenges. The new trend in educational techniques holds the key to achieving and realizing these significant educational goals in Nigeria. These innovative methods of teaching and learning give pupils the opportunity to successfully control and conceptualize their own education, which helps them to reinforce what they have learned and apply it to real-world scenarios. As a result, educators in primary schools must use effective teaching techniques.

Primary school English language instruction involves instructing young pupils (Cahyati & Madya 2019). They will arrive at the session with varying degrees of English proficiency because they are still young. They might speak English rather well, whereas the rest might not know any language at all. The motivation of pupils to learn the English language varies as a result of this situation. While some of them believe that learning English is simple and fun, others believe it is challenging and tiresome. Additionally, it is necessary to help and encourage pupils who are not interested in learning English by demonstrating that English is interesting and enjoyable, while also facilitating the experiences of those who are highly engaged in the language. As a result, schools that have the necessary resources like educational games, media, and qualified teachers—can effectively assist and enable their pupils in learning English. The complicated nature of learning and instruction, along with contemporary educational trends, has increased the difficulty of the teacher's job. This role does not just involve the more transmission of information to pupils but it involves looking at the problems associated with learning and instruction, in addition to that, the learning activities should be characterized as being fun and interesting otherwise lack of these qualities leads to disengagement from learning activities (Cahyati & Madya 2019).

A game is a set of rules with a variable and quantifiable result; it has different values for different outcomes, the player works to affect the result, the player feels emotionally invested in the result, and the activity's repercussions are negotiable and choice. The learners of today have a fresh profile and are active, autonomous learners. They have various learning styles, a



different perspective on the learning process, and higher expectations for both teaching and learning. They prefer to learn independently. The design and play of the games utilized in the teaching and learning environment follow the rules of leisure games, which emphasize skill, strategy, and chance (Margarida, Mireia, & Michela, 2015).

Instructors must address significant problems and tailor the learning process to the needs, preferences, and requirements of their pupils. Teachers must employ a variety of instructional strategies and techniques to enable pupils to take an active role in their education and to be highly motivated and engaged learners. Modern educational trends and pedagogical paradigms, according to Chesser (2013), establish the conditions for using novel strategies and tactics to incorporate active learning.

Among these is the gamification trend. Games serve as a motivation and a chance to practice applying concepts by including competition, participation, drills, and feedback into the learning process. Well-thought-out game integration initiatives bring some interest to the classroom (e.g., by using them to practice verb tenses, questions, locatives, etc.). Games help pupils become more motivated, foster a positive attitude toward learning, and develop self-regulated learning skills. They also help pupils develop social skills, such as how to interact with peers and adhere to game rules, and they help them acquire a variety of abilities and competencies. Pupils can play games and receive instant feedback, which gives them the opportunity to try again and adjust their gaming strategy. Games that are currently utilized for teaching objectives are known as instructional games.

Gamification in education has the advantage of literally making learning into a game by equating every aspect of the classroom with a game; the classroom becomes one large first-person game. The objective is to improve learning through raising pupils' engagement. Choosing a theme (such as space wars, fantasy mystique, military, spy/secret agent, or medieval times) and using gaming terminology to describe every topic in the class (pupils=player, assignment=quest, grade= quest points, class party= game reward) are necessary steps in the process of thematizing a classroom using a gaming metaphor.

The degree of focus and personal connection a person has with an activity is called engagement, and it is the most significant measure of a pupils' information acquisition. Your pupils will assimilate the taught skills more fully the more involved they are in the learning process. Empirical research on gamification demonstrates that implementing gamification in the classroom boosts pupil engagement. Because of this, gamification is an excellent method for enhancing pupils' educational experiences in general. There are many various kinds of games, such as card and board games, computer games, commercial or locally made games, puzzle games, physical games, and internet games. Board games were the focus of this investigation for research purposes.

One kind of game among many is the board game. For people of all ages and in all subject areas, board games are a valuable tool for providing hands-on and cerebral skill and knowledge development. Well-designed games not only create an engaging atmosphere, but they also offer a playful, competitive, and non-threatening environment in which to concentrate on content and reinforce and apply learning (Treher 2013). There are two types of board games that can be used in classrooms: traditional games that are made for pleasure, and educational games that are made specifically to teach a certain subject.

Primary school pupils can choose from a wide variety of educational board games. Studies have also been conducted on the effectiveness of these games in helping pupils develop new skills or learn new material. Some examples of these include the solar system-focused "Space Hunters" game, environmental education-focused "My Eco Town" game, and social science-



focused "Archipelago Roaming" board game. Lencse noted that although educational board games are simpler to utilize in the classroom—you just need to plan and manage the activity—they typically offer a poorer quality gaming experience than amusement board games. The right choice and goal-setting are all that are necessary when using entertainment board games to help build a variety of competencies. They can improve their text-comprehension abilities (Citadels, Munchkins), vocabulary expansion in a foreign language (Guess, Who, Dobble), and communication skills (Bohanza).

Gamification in education

A method of teaching called "gamification" brings gaming mechanics into the classroom. It may be argued that gamification is being applied both conceptually and practically in almost every educational setting and at every educational level across the globe. According to Kim, Song, Lockee, and Burton (2018), gamification in learning and education refers to a collection of procedures and activities meant to use game principles to solve learning and educational difficulties. Maintaining pupils' motivation and focus in the classroom is one of the biggest issues facing educators today. Teachers frequently hear the complaints that their pupils lack motivation, are uninterested, and dislike taking part in class activities.

All of this is problematic because unmotivated pupils will find it difficult to participate in class activities, struggle to learn, and even succeed in transferring or applying what they have learned to real-world situations because it will not be relevant to them. Furthermore, some learning is done by rote, which results in meaningless knowledge that will eventually be lost. In an effort to overcome the possible drawbacks of earlier educational systems, educational reforms are initiatives to fulfill society's educational demands. Teaching approaches also emerge or grow inside the faculty and research in education, in addition to educational innovations.

It is the responsibility of teachers to motivate their pupils to get them more engaged and active during the teaching and learning process. Furthermore, this is one of the primary challenges: how can we excite our pupils? What can we do to encourage our pupils to participate fully in class? How can we engage them in the teaching-learning process when they are not interested in it? How can education become more accessible and appealing to pupils? Gamification has an impact on pupils' motivation, conduct, and dedication, which can enhance their knowledge and abilities (Huang & Soman, 2013). Some authors, such as Lister (2015), contend that one of the most effective strategies for drawing and holding pupils' attention in the classroom is gamification. The use of game features, designs, or structures outside of play situations is known as gamification.

Because of its entertaining aspect, which makes it easier for users to internalize knowledge and creates a good experience, this kind of learning is becoming more and more popular in training techniques (Goethe, 2019; Reiners & Wood, 2015). According to Kapp (2012), gamification in the classroom stimulates, supports, and encourages pupils' behavior, learning, and even problem-solving (gamification would lead to work toward meaningful and contextualized learning). In the words of De-Freitas (2018), the use of gamification in education fosters and motivates pupils to make high commitments, both willful and motivated, which increases the likelihood that pupils will feel compelled to learn more to advance in the game.

According to Buckley and Doyle (2014), it is accurate to say that the games and this methodology inspire pupils to commit to learning and boost their motivation during such encounters. It is important to remember that the methodology must be used correctly in the classroom in order to avoid having the positive impacts it is intended to encourage turn into



negative consequences due to overuse. Because of the aforementioned, educators should become fully conversant with this methodology at the theoretical level before carefully organizing and executing all of the tasks, activities, and projects that will be completed in the classroom (Von-Ahn & Dabbish, 2018). This leads to a modification of the application or concept of the games. As it has become evident that they may be a practical and effective tool or resource for training and motivation, these will move from being an element or resource limited to pleasure or leisure to being employed in education (Hamari, 2017).

The potential of this methodology in education is being recognized by an increasing number of academics and teachers. Some support it by advocating for its usage, while others disseminate their experiences (Balducci, Grana, & Cucchiara, 2016), which further encourages its use in our opinion. It is not unexpected that gamification is being used in classrooms after this review of its advantages as an approach that seem to address issues with pupils' lack of enthusiasm and involvement (Piñeiro-Otero & Costa-Sánchez, 2015).

Consequently, in order to get alternative answers or behaviors from our pupils, teachers must attempt to stimulate them. We also need to support and foster their ability to overcome obstacles. In this way, we try to prepare pupils for life and the outside world, rather than just keeping learning behind the walls of the classroom.

People must be ready to face and overcome the problems that life will present because the outside world is changing. Pupils will be encouraged to learn meaningfully as a result. According to Pérez-López & Rivera (2017), three factors must be considered in order to properly apply this methodology and get the best possible results. These factors are one of the keys to being able to use this method effectively.

These components include fostering a positive learning environment in the classroom, using the approach in a way that emphasizes experience and play, and emphasizing the value of a shared assessment. As is evident, all of these studies on gamification are up to date. It is a current, active methodology that is being used in more studies. According to the results of a recent study by Quintero, Jiménez, and Area (2018), pupils' motivation and collaborative work improve when gamification is used; they also become more invested in their education and put in more effort throughout the process. The following are just a few advantages of gamification in the classroom:

Gamification has emerged as a new trend in the education sector, offering solutions to pupils engagement and motivation issues. Its effectiveness lies in its inclusion of mechanical, personal, and emotional elements that trigger intense focus. Key features include avatars, leaderboards, quests, high customization levels, and eye-catching graphics. Gamified learning also presents new reward mechanisms like trophies, stars, and score charts, creating a sense of achievement. Karimi and Nickpayam (2018) discussed how the social dynamics of gamification also constructively impact pupils engagement. The psychological aspect of playing as a team engages learners, leading to a sense of competition and social pressure. The use of extrinsic rewards such as levels, points, and badges improves engagement while striving to raise feelings of mastery, autonomy, and sense of belonging.

Kiryakova, Angelova, and Yordanova (2014) assert that gamification also enhances collaboration skills, particularly in group settings where pupils work together to achieve a common goal. This sense of community gives pupils social responsibility and emotional investment. Instructional designers and educators must utilize game elements to achieve predetermined learning objectives, making participation effective and meaningful. (Hattie



and Timperley, 2007). Rigby and Ryan (2011) assert that knowledge retention is another benefit of gamification. It helps reinforce learned knowledge and boosts self-efficacy. The potential of gamification to enhance learning can be traced to its appealing graphics, engaging nature, and ability to actively involve learners. Huang and Soman (2013) affirm that immediate feedback, a crucial element of gamification, feeds the learners' need for relatedness. Personalized learning environments provide learners with options regarding their presence, level, task, and speed of completion. This allows instructional designers to create formats that better align with particular pupils demographics, enhancing pupils engagement and promoting risk-taking and understanding without fear of failure.

Instructional Board Games

The use of board games in the process of instruction is under-utilized. As we come out of this pandemic and adjust to new directions, education can reinvent itself, and create better learning environments. Games can engage pupils with different learning styles and inspire individual creativity. Board games represent the missing tool in our toolboxes, and they can replace the traditional lectures with a method that reaches all pupils. Becker (2021) writes that any game must have the following properties: be interactive; have rules; have at least one goal; have a means to measure progress or success; and have a recognizable ending. Mazur-Stommen & Farley (2016) agree and add that games may be either competitive or cooperative in nature, with points being frequently awarded as one possible outcome. Crookall and Thorngate (2019) provide an interesting historical viewpoint regarding the relationship between knowledge acquisition and game playing. Their view that “action ultimately precedes knowledge” means that knowledge acquisition is dependent upon action, that the experience provided by action is what actually impels learning. They support their view with several historical references, including a quote from famed educational reformer John Dewey: “Give the pupils something to do, not something to learn; and the doing is of such a nature as to demand thinking; learning naturally results” (Crookall and Thorngate (2019). According to Tiwari & Johnson (2021), the various features of Board Games include the following:

Physical Components of Board Games

The Board in a board game typically comprises of a paper or textile flat surface with several sections. There is a clear beginning and end marked on the board. Some are linear tracks others circular or looped. Length of track can vary. Folding in layers can increase its length, as can create reticular boards which have grids for the appearance of nets or networks. Board games have many possible patterns. Game-piece is an umbrella term for all the small bits and pieces used to play on the board. Units (also called token, figurines, pawn, marker, chit, trophy etc. depending on the game) are the small objects that represent each player on the board game. Progression tool such as dice, spinner, or teetotum is used to direct players to move their units to a particular section on the board. Currency of the game could be objects such as coins, figurines, cards etc. that act as a measure of gains or losses in some board games.

Conceptual Components of Board Games

Rules provide board game players a clear beginning, progression, end, possible outcomes, alternatives and possibilities of gameplay. Rewards and penalties help some players move further close or away from the goal, making the board game interesting. Scope of competition refers to whether the board game allows players to go against another team, or to work cooperatively against the game itself. Gameplay's scope of competition is a continuum on



which players may try to improve from previous performance, as well as winning over others, to varying extents.

Social Components of Board Games

Social interactions with players on the same or opposing teams during gameplay, such as taking on roles within the narrative of the game, planning, conspiring, or deceiving to get ahead in the game - are all engaging social components of a Board Game. Live feedback or physical cues given by our bodies during gameplay, such as nervously touching our faces or moving our feet underneath the desk or smiling at a victorious progression on the board - are all instant, live feedback for players. Players as people first is a defining social component of board games where players are often people from everyday life (family, friends, neighbors) and are not dehumanized - unlike digital games where it is easy to hide behind a screen and misuse anonymity.

Communities for board games offer players support in finding help on gameplay or finding games by themes or interests, such as the online forum Board Game Geek or Social media fan pages of individual games. Events such as GAMA's Origins, GenCon, Germany's Essen Spiel bring about Board Gamers from across the globe to share ideas and seek feedback. Toy libraries offer board game players the opportunity to discover, borrow and explore different board games without spending a fortune on buying them.

Statement of the Problem

One of the main problems affecting the academic achievements of pupils learning English language is teachers' Inability to use adequate teaching strategies in English language classrooms and Lagos state primary schools are no exception. Generally, it has been noted that learners do not find so much joy in learning English language especially young learners; they believe English Language classroom is a boring one unless the teacher uses a strategy that makes learning fun in the classroom. According to (Mackay, 2013), Kids learn by playing games. The academic achievements of pupils in English language have been on the decline that is, it has not been encouraging and being able to reach the desired goal which is improved academic performance can be termed achievement. According to (NPE, 2013), one of the objectives of primary education is to; inculcate permanent literacy, numeracy and the ability to communicate effectively, in pursuance of the objectives of primary Education, the curriculum included English Language as a compulsory subject.

There have been many attempts to address the problem of low academic achievements and some factors have been identified in explaining academic achievement. Among the numerous variables researched are: cognitive level, behavioral characteristics and psychological factors. Besides, differences in ability, which are not easy to control, pupils have specific learning styles that may influence their academic achievements. (Treher, 2013) also says that "the outmoded idea of interactive learning, as consisting of a presentation followed by questions and quizzes, or short discussion sessions and reliance on PowerPoint presentations is unlikely to lead to learning retention and engagement as the ability to retain information after 10-20 minutes of lecture is no more than 50%". She noted that, although Board Games which are "hands-on and heads-on learning tools works best" and asserted that "properly designed Board Games are an effective way to provide this combination". Therefore, in this study, an instructional board game (Nophie's N&V Board Game) was developed in which its effects on the academic achievements of primary school English language learners in Lagos state were also investigated.



Objective of the Study

The Purpose of this study is to:

1. Develop an instructional board game on the academic performance of Lagos state primary school pupils in English Language.
2. Investigate the effect of Instructional Board Game on the academic performance of Lagos state primary school pupils in English language.

Research Hypothesis

The null hypothesis was formulated to guide the study and was tested:

Ho1: There is no significant difference in the academic performance of pupils taught English language topics using instructional board game and those taught without using instructional board game.

Research Design

The research design adopted is mixed method involving pre-test and post-test on two equivalent groups designated as experimental and control. In this design, a both classes was pretested and divided into two equivalent groups, viz experimental and control. The experimental group was taught English topics (reading, vowels and consonants) using instructional board game (treatments) while the control group was taught without any game board.

Convenience sampling technique was adopted to select private schools used for the study, and intact classes were used. A total of 30 pupils were ascertain their group equivalence. One of the schools was selected as control group while another one was the Experimental group.

Ho1: There is no significant difference in the academic achievement of pupils taught English language topics using instructional board game and those taught without using instructional board game.

Table 4.3: Analysis of Covariance (ANCOVA) summary table of the significant difference between the academic achievements of pupils taught English Language topics using instructional board game and those taught without instructional board game.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	6.824 ^a	2	3.412	4.087	.028
Intercept	243.235	1	243.235	291.335	.000
PRETEST	1.191	1	1.191	1.427	.243
GROUP	4.471	1	4.471	5.355	.029
Error	22.542	27	.835		
Total	6395.000	30			
Corrected Total	29.367	29			

The table shows that there is a statistically significant difference in the academic performance of pupils taught English language topics using instructional board game and those taught



using conventional strategy. Since an F value of 5.355 was obtained with the associated p value of .029 and the associated p value is lesser than 0.05 [$F(1,27) = 5.355; p < .05$]. Hence, the null hypothesis one which stated that “there is no significant difference in the academic performance of pupils taught English language topics using instructional board game and those taught without using instructional board game” is hereby rejected. This implies that the Instructional Board Game was more effective than the conventional strategy in teaching English language topics.

Discussion of Findings

The findings from the above research hypothesis showed that there is a statistically significant difference in the academic performance of pupils taught English Language topics using instructional board game and those taught without instructional board game. This finding corroborate with the study of Kiryakova, et. al. (2014) in Gamification in Education while explaining how the use of Game techniques and mechanisms can be implemented in the learning process as activities concluded that Gamification is an effective strategy to make positive change in pupils behavior and attitude towards learning, to improve their motivation and engagement. The results of the change are bilateral in nature as they can affect pupils' results and understanding of the educational content and create conditions for an effective learning process. These findings are also in conformity with that of Roth, Schneckenberg & Tsai (2015) where it was found that the motivation and satisfaction of pupils regarding their learning presents high levels in the score obtained. All the members involved have thus built significant and active learning. This development has been linked to intrinsic motivation, so in these kinds of experiences of values of motivation and development are important and related to each other. Hanus & Fox (2015).

Conclusion

This study's findings led to the conclusion that the use of Instructional Board Game has significant impact on the pupils' academic achievements as the study investigated effect of instructional board game on primary school pupils' academic achievements in English Language.

Recommendation

Based on the findings of the study, the following will be recommended to improve the teaching and learning of pupils in English Language curriculum:

1. Instructional board game is a very good strategy in teaching and should be used as a new strategy in primary schools in order to enhance learning.
2. Governments or school owners should start approving the use of instructional board games in classrooms to make learning fun
3. Teachers should also start adopting the use of instructional board games in classroom as strategy to improve teaching and learning process and to create better learning atmosphere for pupils
4. Lastly, parents be actively involved in their children's learning process by motivating them with games.



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