

**Effect of Gamification and Expository Teaching Methods on Students Academic
Performance in Business Studies in Secondary Schools in Akwa Ibom State**

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Abstract

The study was carried out to determine the effect of gamification and expository teaching methods on students' academic performance in Business Studies in secondary schools in Akwa Ibom State. Quasi-experimental research design was used for this study. A sample size of 147 students was selected from a population of 38, 293 junior secondary three (JS 3) students in all the 270 public secondary schools in Akwa Ibom State. Purposive sampling technique was used for the selection. Researcher-developed instruments tagged: "Business Studies Performance Test (BSPT)" and "Business Studies Interest Inventory (BSII)" were used for data collection. Face and content validations were used for validating the instruments. Reliability coefficients of 0.86 was obtained for the Business Studies Performance Test (BSPT) using Kuder-Richardson 20 formula and Cronbach Alpha respectively. Mean and standard deviation were used to answer the research questions while Analysis of Covariance (ANCOVA) was used to test the hypotheses at .05 level of significance. The major findings of the study showed that there is significant difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods. Based on the findings of the study, it was concluded that gamification enhances students' performance in Business Studies in Akwa Ibom State than the expository teaching method. It was recommended among others that, the School administrators should provide training and workshops for teachers on the effective use of gamification to enhance teaching and learning of Business Studies

Keywords: Expository, Gamification, Gender, Method, Performance

Introduction

Business Studies is widely recognized as an effective pivot for development of professional and skilled manpower in all aspects of commercial, industrial and managerial areas. The advent of Business Studies stresses the need for providing students in Public Schools with the educational experience which equips them with saleable skills and competencies. Business Studies is a vocational subject taught in junior secondary schools in Nigeria to help junior secondary students who may not proceed to senior secondary schools to graduate with necessary professional skills that will enable them to be useful to themselves and the society in which they live.

Business Studies is made up of Commerce, Book Keeping, Office Practice, Shorthand and Typewriting. It helps in training the students on skills that are relevant to develop aptitudes,

potentials and competences to be useful citizens and also to contribute economically to the society (Okoro, 2019). The objectives of Business Studies as stated by the Federal Republic of Nigeria (FRN, 2013: p.21) are to: enable students develop the basic skills in office occupation; prepare the students for further training in Business studies; provide orientation and basic skills to students to start a life of work for those who may not undergo further training; provide basic skills for personal use in future, and relate the knowledge and skills to the national economy.

Moreover, Business Studies nurtures critical soft skills such as decision-making, problem-solving, and teamwork, which are essential in any professional setting. By relating business knowledge to the national economy as outlined by the Federal Republic of Nigeria (FRN, 2013), students gain a broader understanding of how micro-level business operations impact macroeconomic growth and development. This contextual learning makes Business Studies not only practical but also highly relevant in fostering economically literate, competent, and productive citizens. These laudable objectives of teaching Business Studies at the secondary school level can be achievable if there is a departure from the expository method of teaching which is widely used in most secondary schools in Nigeria (Simon, 2022). This method involves the teacher delivering content by writing on a chalkboard while students take notes. The expository teaching method has been a longstanding teaching strategy, particularly favoured for its simplicity and cost-effectiveness.

Despite its widespread use, this approach has several disadvantages. Firstly, it is largely teacher-centered, which limits student engagement and interactive learning opportunities (Liang and Akiba, 2015). Additionally, this method does not cater for diverse learning styles, as it predominantly supports auditory and visual learners, neglecting kinesthetic learners who benefit from hands-on activities. Moreover, the static nature of chalkboard instruction fails to incorporate interactive learning that can enhance understanding and retention of complex concepts. These limitations suggest that while the expository teaching method is accessible and straightforward, it may not be the most effective approach for fostering an engaging and inclusive learning environment; Thus, the need to explore other instructional strategies like the gamification which can enhance active participation of students in the teaching and learning process.

Gamification is a cutting-edge method of teaching that makes use of game design in the classroom to attract students' attention, boost their confidence, and maintain their engagement (Vann and Tawfik, 2020). It is the addition of motivating features to a learning framework or system to enhance students' active participation in the teaching and learning process (Ayre, 2021). Gamifications have the ability to align objectives with varying levels of engagement and have emerged as novel instructional approach gaining momentum in the field of education due to its potential to boost learners' motivation and enhance their academic accomplishments (Zainuddin, *et al.*, 2020). This technique inject elements of games into the teaching and

learning process making it engaging and enjoyable. A well-structured gamified classroom offers learners a playful and interactive learning experience, accompanied by spontaneous feedback and fostering their knowledge enhancement. Parra-Gonzalez, *et al.* (2021), stated that active gamification is more valuable as a teaching method because it improves the overall learning experience, leading to heightened engagement, motivation, social interaction and academic achievement among students. The interactive nature of games alongside other teaching strategies that are interactive like the brainstorming might help students remember and understand academic concepts more effectively and this can lead to improvement in students' academic performance.

Gamification involves using game-like features such as competition, challenges, rewards, points, levels, and feedback to engage and motivate individuals, encouraging desired behaviours and participation in a given activity or task. Gamification, being a distinctive educational approach, has the potential to provide instant feedback to students (Smiderle, *et.al.*, 2020). This quality proves beneficial as it facilitates the identification of areas for improvement, enabling teachers to tailor their teaching to the specific requirements of each student.

According to Kiryakova, *et.al.* (2014), gamification is an integration of game elements and game thinking in activities that are not games. Learning is like game, it has rules, levels and sometimes rewards. In gamification strategies, students need to follow the rules in order to move up a level and sometime they get rewarded for their effort. The teaching strategies to gamify learning include; use of levels, create challenge, give second chance, student choice, badges and rewards. This strategy is not just about gaming but the understanding the tools that gaming experts use to engage their users to play and finding out what motivates their students, then try to integrate those elements into a daily lesson.

In a related development, Duncan (2022) affirmed that gamification strategies embed challenges, emphasizes students choice and giving second chance will make students not only feel like they are in a game but will be actively engaged, motivated, promoting learning and solve problems as well. This engagement characteristic makes gamification strategies relevant to higher education context, in which it can be considered as a potential solution to foster the engagement of students through more interesting and easier to follow learning activities. According to Sam-Kayode and Salman, (2015), we are living in an era in which learners grew up as digital natives and have different learning styles, and new attitude to the learning process. These realities require modern pedagogical paradigms and trends in education in order to fulfill student's requirements, needs and preferences, to keep them engaged and motivated during their learning process, and gamification is a trend aiming to maintain an active learning.

Gamification in education transforms online learning into an engaging and effective arena where students thrive. Introducing video game design elements into the educational process cultivates an informal, exciting, impactful learning environment. This excitement boosts engagement and also significantly enhances information retention. When learners are genuinely enthusiastic about their educational journey, they are more likely to absorb and remember the content, leading to a richer and more fruitful learning experience. This approach makes learning more enjoyable and deeply enriches students' understanding and skill of the subject matter.

i. Customised learning paths

By allowing learners to progress at their own pace and choose their challenges, gamification ensures a more personalised educational experience. This individualised approach is one of the primary gamification benefits in education. It provides diverse learning styles and maximises engagement and efficacy, making education more inclusive and adaptive for everyone involved. Through this tailored learning environment, students can explore their strengths and interests in depth, leading to a more fulfilling and motivating learning experience.

ii. Immediate feedback and recognition

iii. Allows learners to see real-world applications

Gamification in education bridges the gap between theoretical knowledge and real-world application, offering learners a hands-on approach to understanding and applying their skills. By simulating real-life scenarios within gamified educational contexts, learners can directly see the impact of their decisions, experiencing firsthand the consequences and rewards of their actions. This immersive learning experience solidifies their grasp of the subject matter and highlights its practical relevance and utility. This approach empowers students to appreciate the real-world significance of their learning and prepares them for future challenges and opportunities.

The effective use of gamification as a teaching pedagogic approach upholds high quality teaching and promotes lifelong learning in institutions. Gamification is an effective approach to make positive change in students, their behaviour and attitude towards learning as well as to improve their motivation and engagement changes (Ekpenyong in Sunday, 2017). Games motivate learners by capturing their attention through elements of curiosity, challenge and learner control; the learners are able to view existing ideas, solve problems, perform tasks, share feedback and reflect back on their participation and takeaways (Raj, 2015). Gamification strategy could be beneficial to students because learners in the 21st century era grow up as digital natives with different learning styles and new attitudes to the learning process. These realities require modern pedagogical paradigms and trends in education in order to engage students in the classroom teaching. Gamification could maintain an active learning context among students (Kiryakova *et*

al., 2014). Research indicates that utilisation of gamification strategy lead to positive students' engagement thereby leading to good academic performance of the students.

Games have the ability to align objectives with varying levels of engagement (Smiderle *et al.* 2020). Gamification has emerged as a novel instructional approach gaining momentum in education due to its potential to boost learners' motivation and enhance their academic accomplishments (Yildirim, 2017) A well-structured gamified classroom offers learners a playful and interactive learning experience, accompanied by spontaneous feedback, fostering their knowledge enhancement. Parra-Gonzalez, *et.al.*, 2021), found that active gamification is more valuable as a methodology in secondary education than in other stages of education. The incorporating gamification improves the overall learning experience, leading to heightened engagement, motivation, social interaction and academic achievement among students (Zainuddin, *et.al.*, 2020). The interactive nature of games can help students remember and understand academic concepts more effectively, leading to improved academic achievement.

Performance is the observable or measurable behaviour of a person in a particular situation usually experimental situation (Akerele and Afolabi, 2022). This means that performance measures the aspect of behaviour that can be observed at a specific period. Academic performance is commonly measured through examinations but there is no general agreement on how it is best evaluated or which aspects are most important. Academic performance, which is measured by the examination results, is one of the major goals of a school. Hoyle (2016) argued that schools are established with the aim of imparting knowledge and skills to those who go through them and behind all this is the idea of enhancing students academic performance and interest.

Gender issue in education has attracted the attention of many researchers. However, studies on gender as it affects students' academic performance in Business Studies are inconclusive. This has necessitated the need to find out if there is any significant difference between male and female Business Studies students as reflected in their academic performance. This study investigated effect of gamification teaching methods and gender difference when taught Business Studies in secondary schools in Akwa Ibom State.

Statement of Problem

It has been observed by the researcher that teachers in Akwa Ibom State predominantly use expository teaching method in teaching Business Studies. In order to cover the scheme of work, teachers resort to transmission of facts, dogmas and theories to the students who have to regurgitate them in examinations. The prevalent use of the expository teaching method in teaching Business Studies seems not to allow students to be actively involved in the teaching and learning process; thereby making learning boring, less interesting which often result to poor academic performance.

In order to ensure effective teaching and learning of Business Studies students-centered approaches should be resort. for effective performance in Business Studies subject. Empirical

studies confirm that gamification teaching method can help students' attain to better performance in Business Studies at the junior secondary school level. This then motivated the research to carry out a study to find out how gamification can enhance effectiveness in the teaching of the subject among the gender in secondary schools in Akwa Ibom State.

Purpose of the Study

The purpose of this study was to examine the effect of gamification teaching methods on students' academic performance in secondary schools in Akwa Ibom State. Specifically, the study objectives was to :

- i. determine the difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods.
- ii. examine difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods based on gender

Research Questions

The following research questions were raised to direct the study:

- i. What is the difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods?
- ii. What is the difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods based on gender?

Research Hypotheses

The following null hypotheses are formulated and to guide the study:

- i. There is no significant difference in the mean performance score of students in taught the concept of balance sheet using gamification and expository teaching methods.
- ii. There is no significant difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods based on gender.

Methodology

The design for the study was quasi-experimental design using non-randomised pre-test and post-test control group. The design is suitable for this study because it comprises non-random assignments of participants into the control group and experimental group. The structure is as shown below:

E₁: experimental group 1 (those taught using gamification)

C₁: control group (those taught with the expository method)

O₁: pre-test measurements

O₂: post-test measurements

- NO treatment

This study was conducted in Akwa Ibom State. The State has 270 public secondary schools in all the three senatorial Districts, with 25 local education zones. The population of the study consisted of all the 38, 293 junior secondary three (JS 3) students from all the 270 public secondary schools in Akwa Ibom State (State Secondary Education Board, 2024). The study's sample comprised 147 Junior Secondary Three (JS 3) students, selected from three intact classes across three secondary schools within the designated study area. The intact class structure was maintained to preserve the natural classroom setting, allowing for a more authentic representation of student behaviour and responses in the study. A purposive sampling technique was employed to select the schools for the study. This method allowed for a deliberate and strategic selection based on specific criteria to ensure the schools met the study's objectives. The criteria used for choosing the schools were as follows:

- i. Schools with qualified Business Studies teachers.
 - ii. Government-owned secondary schools.
 - iii. Schools that are currently presenting candidates for Junior Secondary School Certificate Examinations
 - iv. Schools with well-equipped ICT laboratories
- Researcher-developed instruments tagged: “Business Studies Performance Test (BSPT)” which was used for data collection.

In order to determine the internal consistency of the instruments, the instruments “Business Studies Performance Test (BSPT)” were administered to thirty (30) students who were selected from the population of the study but were not included in the main study sample. The scores obtained from the respondents on “Business Studies Performance Test (BSPT)” were analysed using Kuder-Richardson 20 formula to obtain a reliability coefficient of 0.86 for the instrument.

The researcher visited the selected schools to seek permission from the school authorities to conduct the study and to request the assistance of Business Studies teachers from the chosen classes as research assistants. After receiving approval from the school authorities and agreement from the Business Studies teachers to participate as research assistants, three days was dedicated to training them on the study's procedures. This included instructions on administering the research instrument and guidelines for teaching the Business Studies concept using the lesson notes prepared by the researcher.

During the first week, the pretest titled “Business Studies Performance Test (BSPT)” by the researcher were administered to the students by their teachers. The subject teachers distributed the instruments to the students, who were given one hour each to complete each of the instrument.

After the students attempted the questions, all the completed copies of the test were collected. In the second week, the research assistants guided the students on how to access the gamification using computers. Following this, the students were introduced to the sections of the lesson that covered Meaning, Classification and Uses of Balance Sheet. In the third week, they were taught Preparation of a Simple Balance Sheet and also difference between Vertical and Horizontal Balance Sheets. In the fourth week, the subject teachers (research assistance) allowed the students to review the lesson independently in the classroom, ensuring that each student worked individually. In the fifth week, the posttest titled " Business Studies Performance Test (BSPT)" were administered to the students. They were given one hour each to complete the instruments, and after the allotted time, the research assistants collected the copies distributed. The entire process spanned five weeks.

Mean and standard deviation were used for answering research questions while analysis of covariance (ANCOVA) was used to test the hypotheses at .05 level of significance. The choice of ANCOVA was informed by the use of pre-test as covariate to control for the effects of use of non-equivalent groups. In order to take decision as regards the research questions, any group (either the control or treatments) with the higher mean score was regarded to achieve better than the one with the lower mean score. In terms of the hypotheses, whenever the probability level of significance was less than .05 the null hypotheses was rejected and whenever the probability level of significance was greater than .05, the null hypotheses was accepted.

Results

Research Question 1: What is the difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods?

Table 4.1: Mean and standard deviation of difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods (N=97)

Teaching methods	N	Pretest		Posttest		Mean difference
		Mean	SD	Mean	SD	
Gamification	50	39.50	7.30	73.90	10.02	34.40
Expository	47	40.11	7.19	55.64	7.78	15.53

(Source: Researcher's Field Work, 2025)

The result in Table 1 reveals that the pretest–posttest mean score difference of 34.40 obtained by students taught the concept of balance sheet using gamification was greater than that of 15.53 obtained by those taught using the expository teaching method. The pretest and

posttest standard deviation scores of 7.30 and 10.02 as well as 7.19 and 7.78 obtained by the students taught with the gamification and expository teaching methods respectively showed that, though the students taught using gamification had the highest mean score difference, the scattering of the raw score from the mean was higher in the gamification group. This means that there is difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods in favour of those taught using gamification.

Research Question 2: What is the difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods based on gender?

Table 2: Mean and standard deviation of the difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods based on gender (N=97)

Teaching method	Gender	N	Pre-test		Post-test		Mean Difference
			Mean	SD	Mean	SD	
Gamification	Male	23	39.57	5.62	73.26	9.12	33.69
	Female	27	39.44	8.59	74.44	10.86	35.00
Expository	Male	22	38.86	8.30	56.14	7.55	17.28
	Female	25	41.20	6.00	55.20	8.10	14.00

(Source: Researcher's Field Work, 2025)

The result in Table 2 showed that the pretest–posttest mean difference in the performance scores of male and female students taught the concept of balance sheet using gamification were 33.69 and 35.00 respectively while that of the male and female students taught with the expository teaching method were 17.28 and 14.00 respectively. Also, the standard deviation scores indicated that, although the mean score difference of the male students taught with the gamification was slightly higher, the scattering of the raw score from the mean was slightly higher in the female students taught with the gamification method. This result implies that there is no difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods based on gender.

Null Hypothesis 1: There is no significant difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods.

Table 3: Result of ANCOVA analysis of the difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods (N=97)

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	10288.71 ^a	2	5144.36	88.15	.00
Intercept	4466.61	1	4466.61	76.53	.00
Pretest	2209.32	1	2209.32	37.86	.00
Teaching method	8425.42	1	8425.42	144.37	.00
Error	5486.03	94	58.36		
Total	426250.00	97			
Corrected Total	15774.74	96			

(Source: Researcher's Field Work, 2025)

The result in Table 3 shows the F-value of 144.37 and the corresponding probability level of significance of .00 alpha at 1 and 94 degrees of freedom. This level of significance is less than .05 in which the decision is based. With this result, the null hypothesis was rejected. This implies that there is significant difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods

Null Hypothesis 1: There is no significant difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods based on gender.

Table 4: Result of ANCOVA analysis of the difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods based on gender (N=97)

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	10382.19 ^a	4	2595.55	44.28	.00
Intercept	4291.50	1	4291.50	73.22	.00
Pretest	2275.14	1	2275.14	38.82	.00
Teaching_methods	8275.38	1	8275.38	141.18	.00
Gender	9.49	1	9.49	.16	.69
Teaching_methods * Gender	85.93	1	85.93	1.47	.23
Error	5392.56	92	58.62		
Total	426250.00	97			
Corrected Total	15774.74	96			

(Source: Researcher's Field Work, 2025)

The result in Table 4 shows the F-value of 1.47 and the corresponding probability level of significance of .23 alpha at 1 and 92 degrees of freedom. This level of significance is greater than .05 in which the decision is based. With this result, the null hypothesis was retained. This implies that there is no significant difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods based on gender.

Discussions of Findings

Difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods

The finding of the difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods revealed that there is significant difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods. This finding can be attributed to the fact that gamification can adapt to students' pace and provide differentiated instruction. Students can progress through levels based on their understanding, which is more effective than a one-size-fits-all traditional approach. Also, gamification can make learning more interactive and enjoyable by incorporating elements such as points, badges, and leaderboards which can lead to increased motivation and engagement which can in turn lead to retention of learned task. The finding lend credence to that of Tsebee, *et al.*, (2023) who found that students exposed to gamification strategy had significantly higher mean engagement scores in Social Studies than those taught with modified lecture strategy. The finding also lend credence to that of Nwankwo and Ukeh (2024) whose finding showed that students who were taught computer studies content (Central Processing Unit) using gamification had improved academic achievement than their counterparts who were taught with expository method. The finding further aligns with the observation of Swain (2024), the advantages of gamification include: increased engagement and motivation; integrating elements of gamification in education taps into the intrinsic motivations and competitive instincts of students, making the educational journey both enjoyable and compelling; enhanced learning experience.

Difference in the mean performance score of students taught the concept of balance sheet using gamification and expository teaching methods based on gender

The finding of the difference in the mean performance score of students taught the concept of balance sheet using brainstorming and expository teaching methods based on gender revealed that there is no significant difference in the mean performance score of students taught the concept of balance sheet using brainstorming and expository teaching methods based on

gender. The finding can be attributed to the fact that both brainstorming and conventional methods require active participation, but brainstorming emphasizes more interactive and idea-generating techniques. The nature of brainstorming could promote higher levels of engagement from all students, making it equally appealing to both male and female students. Also, the brainstorming encourages all students regardless of gender to actively participate in group discussions, problem-solving, and peer interactions. Unlike conventional method where teacher-student interactions may be gender-biased, brainstorming ensures that every student contributes, which can reduce potential disparities in learning outcomes. The finding aligns with that of *Udabah and Nneji (2019)* who found that there was no significant effect or interaction between teaching methods and gender on students' interest in mathematics. The finding is in line with that of *Wagbara (2020)* whose finding showed that gender does not have significant effect on students taught Chemistry by use of brainstorming strategy.

Conclusion

The study was carried out to determine effect of gamification in secondary schools in Akwa Ibom State. Quasi-experimental research design was used for this study. The population of the study consisted of all the 38,293 junior secondary three (JS 3) students from all the 270 public secondary schools in Akwa Ibom State. The study's sample comprised 147 Junior Secondary Three (JS 3) students, selected from three intact classes across three secondary schools within the designated study area. Purposive sampling technique was used for the selection. Researcher-developed instruments tagged: "Business Studies Performance Test (BSPT)" Mean and standard deviation were used to answer the research questions while Analysis of Covariance (ANCOVA) was used to test the hypotheses at .05 level of significance. The major findings of the study showed that there is significant difference in the mean performance score of students taught the concept of balance sheet using gamification and expository methods.

Recommendations

Based on the findings the following recommendations were made:

1. Teachers should integrate gamified elements into Business Studies lessons to enhance interest and performance.
2. School administrators should provide training and workshops for teachers on the effective use of gamification to enhance teaching and learning of Business Studies
3. School administrators should partner with professional bodies like the Nigerian Union of Teachers to provide training and workshops for teachers on the effective use of gamification so as to enhance students interest.

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