Gamifying Students' Learning Experiences: Effect of Gamification Teaching Approach on Political Science Undergraduates' Scholarly Outcomes in Delta State University, Nigeria

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Abstract

The study investigated the effect of a gamification teaching approach on political science undergraduates' scholarly outcomes at Delta State University, Nigeria. The study implemented a quasi-experimental approach. A sample of ninety (90) Political Science undergraduates of Delta State University, Nigeria, were involved in the investigation. The Scholarly Outcomes Test (SOT) was the data collection instrument. Data were scrutinised with mean ($\bar{X}$) and ANCOVA statistics. The findings exposed that the Gamification teaching approach boosted Political Science undergraduates' scholarly outcomes. The study demonstrated that the employment/application of the Gamification teaching approach enhanced Political Science undergraduates' scholarly outcomes more than the conventional teaching approach. Also, the study showed no significant effect on Political Science undergraduates' scholarly outcomes by gender. It was suggested that the gamification teaching approach should be used in classroom instruction for political science undergraduates, and that students' gender should not be taken into consideration in its implementation.

Keywords: Gamification, Teaching Approach, Gamification Teaching Approach, Political Science Undergraduates, Scholarly Outcomes

1. Introduction

In recent years, the educational landscape has undergone a significant transformation, largely thanks to the advent of technology. One of the furthermost innovative emerging trends is **gamification** applying game-design elements in non-game contexts. This approach has found its way into classrooms worldwide, and educators are increasingly curious about its effect on students' academic performance. Swift progress in information and communication

technologies has favorably influenced everyday human existence. It has demonstrated significant advancements in various sectors, including the economy, healthcare, and education. Consequently, universities have employed sophisticated technology, including mobile devices, web-based educational platforms, and so on, as pedagogical tools/apparatuses to boost the instruction and optimise learning results. Mobile technologies, specifically tablets and smartphones, are dismantling the constraints of distance and time, surpassing personal computers in applicability due to their integration into daily life (Chung, Hwang & Lai, 2019). The significant rise in smartphone usage has spurred the incorporation of mobile devices/applications primarily focused on entertainment, as young individuals dedicate considerable time to playing electronic games. Consequently, researchers and educators often utilise this facet to boost student's involvement and satisfaction in learning (Chen & Kuo, 2019).

Ngaruiya and Atinda (2023) asserted that gamification is a prevalent trend in mobile technology that integrates game rudiments/elements to foster positive behaviours and enhance corporate learning outcomes. Based on constructivist learning, this approach requires social engagement with peers and the environment to facilitate experiential learning (York & deHaan, 2018). As an e-learning strategy, "game-based learning" refers to the usage of gamified content to achieve learning objectives. Regardless of how much game-based technology is used, organisational learning in a corporate context is in line with the strategic goals of great relevance. Word games help students improve their vocabulary and language skills by using phonological and semantic skills to create meaningful connections between words (Obro, 2022). Similarly, logical reasoning abilities can be enhanced via strategy-based mathematics games and puzzles like Math Playground.

Gamification is the employment of game aspects in non-game settings (Schöbel et al., 2020). Commonly employed game elements in academic fields consist of avatars, levels, badges, leaderboards, and points (Barata, Gama, Jorge & Gonçalves, 2014). Numerous methods exist inside gamified systems, including fighting, gifting, missions, memes, social graphs, boss fights, certificates, and content unlocking (Buckley & Doyle, 2016). These techniques, called 'components' in gamification, improve students' focus on their objectives through encouraging tenacity, promoting learning through repetition, encouraging collaboration, and eliciting enjoyment and amicable rivalry among peers. Rapp et al. (2019) underscored that systematically implementing gamified learning strategies could catalyse significant advancements in gamification study/research. By utilising rewards, challenges, and interactive activities through gamification, educators can cultivate a dynamic environment that motivates students to attain their academic objectives efficiently. Moreover, gamification fosters peer collaboration, as students frequently collaborate to surmount problems. This encourages cooperation and cultivates community within the classroom (Obro, Ogheneakoke & Akpochafo, 2021). Moreover, gamified learning accommodates diverse learning styles, enhancing educational inclusivity.

Teachers/Educators may create customised experiences that engage students, ensuring that all remain committed to their studies. By incorporating gamified strategies into the classroom, traditional instruction can be made more efficient and interesting, preparing students for success in the future. By involving children in this manner, instructors may foster critical thinking, problem-solving abilities, and resilience, vital qualities for managing the intricacies of contemporary society (Obro & Enayemo, 2022). Diverse methodologies are employed in the teaching of Political Science. Rather than teacher-centred approaches such as lecturing, it is argued that learner-centred methods including debate, drama, question and answer sessions, problem-solving, projects, research, field trip observations, and gamification are more advantageous for students (Okonkwo, 2012).

A multitude of studies are investigating gamification and its advantages. Gamification involves using games to help faculty reinforce course content and engage with a new generation of students, denoted as Digital Natives by Öztürk and Korkmaz (2020). These students can simultaneously master computers, the Internet, and video games. Games should facilitate greater connectivity with the current generation of students.

Increasing research indicates that gamification is becoming recognised as an excellent educational method for fostering exceedingly appealing learning experiences. Gamification in digital games for education has recently been the subject of empirical research that aims to prove its effectiveness by showing how it can improve students' motivation, engagement, and social impact while allowing them to learn via experience (Groening & Binnewies, 2019). Kayımbaşıoğlu, Oktekin and Hacı (2016) reported enhanced knowledge acquisition. Gómez-Carrasco et al. (2020) asserted that gamification enhances learners' confidence. Gamification has generated significant interest among scholars and research networks, leading to systematic investigation of the gamified elements incorporated into the instruction (Tsay, Kofinas, & Luo, 2018). Öztürk and Korkmaz (2020) discovered that gamification boosted students' social studies engagement. Gamification enhances students' scholarly outcomes in the subject matter (Chen & Liang, 2022). However, notwithstanding its technological advancements and considerable influence on education and instruction, fostering and sustaining participation in gamification pedagogies continues to pose challenges (Ding, 2019).

One significant contributing element to students' scholarly outcomes may be their gender. The reason for this is that boys react differently from girls in any human endeavour. Both genders' genetic composition may be to blame for this (Tsaousis & Alghamdi, 2022). For example, based on their research, Olasehẹnde and Olatoye (2014) concluded that variations in brain structure, hormone production, and maturation rates could be the biological cause of the gender gap in academic outcomes. According to Ani, Obodo, Ikwueze, and Festus (2021), girls had better-developed brain regions that processed verbal information and facilitated the transmission of information between hemispheres. Moreover, girls matured earlier than boys and showed earlier growth in the brain regions that control impulses (Aguillon, Siegmund, Petipas, Drake, Cotner, & Ballen, 2020). Regarding how gender affects students' scholarly outcomes, Awodun, Onẹ, and Aladejana (2014) claim that gender is a factor influencing learning outcomes/performance.

Numerous empirical studies/researches have indicated the beneficial effects of gamified scholarship outcomes (Öztürk & Korkmaz, 2020, Caceffo & Azevedo, 2021; Swacha, 2021, Chen & Liang, 2022, Khoshnoodıfar, 2023, Obro, 2023). Conversely, certain studies have documented adverse effects associated with the same phenomenon (Toda et al., 2018, Hanus & Fox, 2015, Novak et al., 2016, Wronowski et al., 2020). However, several studies have determined that gamification in the educational process yields positive and negative consequences (Subhash & Cudney, 2018; Zhonggen, 2019).

Several investigations have shown conflicting results (Baydas & Cicek, 2019, Rachels & Rockinson-Szapkiw, 2018, Kyewski & Kramer, 2018). Furthermore, it is a relatively novel idea in instructional and educational domain (Ngaruiya & Atinda, 2023). We contend that resolving emerging issues is crucial to cultivating a more sophisticated comprehension of its essence and methodology. Thus, despite extensive conjecture regarding gamification benefits, empirical research on its efficacy remains few. The previously obtained data were essential for understanding gamification's effect on personality, which was derived solely from users' perceptions and was briefly acquired through questionnaires.

2. Related Literature Review

2.1 Gamification

Gamification is defined by "playfulness" (Hamari & Koivisto, 2015). This pertains to gamifying activities to boost their engagement or enjoyment. Moreover, the primary objective of gamification is often linked to pragmatic aims; it seeks to promote beneficial results beyond the gamified framework. Gamified education is distinct or dissimilar from the notion of games. Gamification enhances services by incorporating incentive structures designed to evoke game-like experiences and resulting behavioural outcomes (Wang, Hsu & Fang, 2022). According to Kamunya, Oboko, Maina, and Miriti (2020), gamification is a method that mimics the psychological effects of playing a game. Gamified education refers to sophisticated games created for objectives beyond enjoyment, while gamified applications incorporate solely game features (Dicheva, Dichev, Agre & Angelova, 2015).

Consequently, students acquire knowledge not through engaging in a certain game but by perceiving the learning as a game. Unadulterated learning progressively gets tedious for students, whereas games are enjoyable and captivating. Gamification enhances the learning/education experience, making it increasingly engaging and stimulating when students approach learning as a game.

2.2 Research on Gamification and Scholarly Outcomes for Students

Incorporating games in education offers numerous advantages, with various game design mechanics proving effective in educational settings. However, empirical studies on different aspects of classroom settings' gamification yield mixed results. Smiderle et al. (2020) investigated gamification effect on students' learning, behaviour, and academic outcomes in a web-based programming environment, revealing that it influenced users according to their personalities. Rosali (2021) reported that incorporating gamification into the instructive process is preferable to banning smartphone usage in classrooms, as it fosters enjoyable learning experiences. Another study on quiz implementation in educational settings corroborated its beneficial impact on student engagement, interaction with lessons, enthusiasm for assessments conducted via quiz, and overall scholarly outcomes in these evaluations (Handoko, Mizkat, Nasution, & Eska, 2021). Halim et al. (2021) investigated students' perceptions regarding the application of gamification in accounting education. In the study, most students indicated that gamification enhanced their drive to improve teamwork, scholarly outcomes, and critical thinking. Their findings also indicated that the students' gender holds no statistical importance in elucidating the disparity in perception.

Krisanti, Vally, and Harapan (2021) meticulously validated the effectiveness of gamification within the educational framework. A distinct investigation revealed that students' involvement with games within accounting curricula had a beneficial impact on their motivation to engage in their studies (Silva, Rodrigues & Leal, 2021). Khoshnoodıfar (2023) discovered that the intervention group (gamification) exhibited a more favourable attitude towards learning challenges, cognitive competence and values.

Nevertheless, various studies have indicated that the incorporation of gamification within the educational framework can result in adverse outcomes. In their study, Hanus and Fox (2015) discovered no discernible effect of gamification on the academic outcomes of students. Novak, Johnson, Tenenbaum and Shute (2016), and Wronowski et al. (2020) reported that the utilisation of gamification features did not enhance scholarly outcomes. A study by Sailer and Sailer (2021) demonstrated no substantial impact on students' scholarly outcomes.

2.3 Gamification, Gender, and Scholarly Outcomes for Students

Researchers Godpower-Echie and Ihenko (2017) looked at how students' gender impacted their scholarly outcomes. According to the study, students' gender significantly impacts their scholarly outcomes. The findings of the research suggested that gender played a substantial role in shaping academic outcomes, as noted by Abaidoo (2018). According to Oladotun (2020), students' scholarly outcome is influenced by gender. Scholarly outcomes are discovered to be affected by gender in Oladotun's (2020) research. Salihu, Usman and Buhari (2020) looked at how gender affected scholarly outcomes in a classroom where field trips were a part of the curriculum. The results showed a gender disparity in students' academic outcomes. Mwihia (2020) discovered that students' gender had an impact on their academic outcomes. According to Oladayo (2021), gender has a substantial impact on students' scholarly outcomes. According to research by Ugwu and Nnamani (2023), female students outperformed the male students in fundamental science and technology.

Regarding gender, Oludipe & Oludipe (2018) found no bearing on the students' scholarly outcomes. No association between students' gender and their academic outcomes in Social Studies, as noted by Obro (2018). Halim et al. (2021) discovered that the students' gender does not statistically explain the gap in perception between male students and female students.

3. Research Objectives

3.1 To investigate the effectiveness of the Gamification teaching method on the academic outcomes of Political Science undergraduates.

3.2 To determine if students' gender will affect the undergraduate learning outcomes of Political Science when taught using a Gamification teaching approach.

4. Research Questions

RQ1. Will the Gamification teaching approach boost the learning outcomes of Political Science undergraduates?

RQ2. Will students' gender affect the undergraduate learning outcomes of Political Science when taught using a Gamification teaching approach?

5. Hypotheses

Hypothesis 1: Employing a Gamification teaching approach will not improve Political Science undergraduate learning outcomes.

Hypothesis 2: The outcome of undergraduate learning in political science will not be affected by gender when instructed with gamification.

6. Research Methodology

The quasi-experimental approach was utilised. The teaching approach for the treatment/experimental group is Gamification. In unison, the conventional teaching approach was adopted for the control or non-experimental/treatment group. Consequently, the experimental group received treatment, while the conventional (control group) was not exposed to any treatment. Thus, the difference/variance in the posttest score and mean (X) or scholarly outcomes was credited to the treatment provided.

The study utilised ninety (90) undergraduates from Delta State University, Abraka. The students were carefully chosen, employing the balloting method/technique. To choose the participants for the study, researchers used a two-stage sampling method. To begin, two levels were chosen out of a total of four. Second, a straightforward method of random sampling called balloting was used to choose ninety (90) undergraduates. Forty-five (45) students were carefully selected for the Gamification group, and Forty-five (45) were chosen for the

conventional/control group. One group served as an experimental/intervention group that received treatment or intervention, while the other served as a conventional/control group. In order to ensure the study's validity and allow for statistical adjustment for confounding variables, a treatment/intervention and a conventional/control groups were utilised. This study determined the effect by using intervention and control groups. The school system and its organisation were spared the potential chaos that would have resulted from randomising the students. Thus, no randomisation was done. The two groups (control and intervention/ experimental group were formed by randomly assigning intact classes to each.

6.1 Instrument

The study instrument is the Scholarly Outcome Test (SOT). The SOT comprised twenty-five (25) multiple-choice items, all of which centred on Political Science concepts. The test items consisted of Corruption, International Relations, and Government Policies. A test blueprint was developed and employed to construct the teacher-made test.

6.2 Instrument Validation

Content and face validity were established. The validity was based on expert judgment and a table of specification. Validity was done to confirm the suitability of the items with the table of specifications. Also, to observe and ensure that the items deal with the subject matter content. The face validation was done to ensure that the items measured what they were meant to measure. Consequently, draft copies of the instrument were distributed to experts in test and measurement for their evaluation of the questions' suitability. Their expertise was utilised to concentrate on the assessment of item clarity. They were satisfied with the items, especially as answers were provided. Thus, their suggestions, comments, and remarks were incorporated to improve the contents of the Pre-test – Post-test SOT.

The content validity was established through expert evaluation and a detailed table of specifications. This was followed by item analysis. The twenty-five (25) multiple-choice items were given to 30 students as trial testing. To get a better idea of how difficult and discriminating each item was, the scores were run through an item analysis. It was on this basis that the final form of SOT contained twenty-five (25) items.

6.3 Instrument Reliability

A pilot study was carried out with a sample of thirty (30) students from outside the study area to evaluate the instrument's applicability and reliability. The reliability estimate was computed using Cronbach's Alpha Statistics, which gave an alpha value of 0.72. This value was therefore considered high enough to conclude that the instrument was reliable. This indicates that the instrument yielded scores that were stable over time and therefore suitable for the study.

6.4 Instrument administration

The study experiment lasted six (6) weeks, and following the established practice, participant selection and assignment of the teaching approaches were conducted. After that, a Pretest was administered. Afterwards, treatment was implemented utilising the designated teaching approach of gamification. The groups (experimental/intervention and conventional/ control groups) received the same Political Science concepts instruction. The experimental/ intervention group was instructed using the Gamification teaching approach, while the control/ conventional group received instruction with the conventional teaching approach.

Prior to starting the experiment, both the treatment/intervention and control groups were given a pretest to determine their baseline academic level. Following the trial duration, which lasted six (6) weeks, each group was also given a posttest. The learning outcomes,

measured by the posttest scores of the groups, serve as the dependent variable. This led researchers to conclude that the intervention or treatment had a causal influence on the experienced or observed changes in posttest performance.

The gamification intervention included game-like elements, like collaborative challenges, badges, points, and leaderboards in the curriculum. These aspects were crafted to correspond with the course's learning objectives and were incrementally hard to maintain student involvement. Students accrued points by completing quizzes, engaging in discussions, and collaborating with others. Leaderboards showcased their advancement, and badges were conferred for reaching particular milestones. The gamification experiment lasted six (6) weeks.

The fundamental elements and processes of the intervention were explicitly outlined in a comprehensive manual. This ensures that the research assistants (teachers) comprehend the expectations and the methodology required for execution. The educators undergo comprehensive initial training and regular refresher sessions to guarantee they possess the requisite information and skills to execute the experiment as designed. Training frequently encompasses opportunities for practice and feedback acquisition.

6.5 Data Analysis

The mean (X) statistic was utilised to address research questions. The statistical approach of Analysis of Covariance (ANCOVA) was utilised to test the hypotheses.

7. Research Results

RQ 1: Will the Gamification teaching approach boost the learning outcomes of Political Science undergraduates?

Table 1 Mean ($\bar{X}$) on Gamification Effect on Scholarly Outcomes of Political Science Undergraduates

Test	Teaching Approach	N	Mean	Mean Difference
Pretest	Gamification	45	46.25	
	Conventional	45	50.74	4.49
Posttest	Gamification	45	65.59	
	Conventional	45	57.89	7.70

Table 1 identifies the variance in undergraduates' scholarly outcomes when taught using Gamification in Political Science classrooms and offers insights into its relative effectiveness. At the pretest, undergraduates using the Gamification had a mean of 46.25, while those using the conventional teaching approach had a mean of 50.74. This indicates that at pretesting, the students of the Gamification group had a slightly lower mean ($\bar{X}$) in contrast to students of the conventional teaching approach group. The mean ($\bar{X}$) variance between the groups at the pretest is 4.49 in favour of the conventional teaching approach/control group. At posttest, the mean ($\bar{X}$) for undergraduates instructed with the Gamification increased to 65.59, while those instructed with the conventional teaching approach (control group) had a mean ($\bar{X}$) of 56.91. The mean ($\bar{X}$) variance between the groups at the posttest was 7.70. This suggests that after the instructional interventions, students using the Gamification improved their scholarly outcomes equated to those using the conventional teaching approach. The considerable mean-variance seen in the posttest shows how effective Gamification is. This indicates that the Gamification teaching method promotes a more captivating and efficient educational approach compared to traditional methods.

RQ 2: Will students' gender affect the learning outcome of Political Science undergraduates when instructed with a Gamification teaching approach?

Table 2 Mean ($\bar{X}$) on Gamification Effect on Scholarly Outcomes of Political Science Undergraduates by Gender

Test	Gender	N	Mean	Mean Difference
Pretest	Male	43	52.10	9.32
	Female	47	61.42	
Posttest	Male	43	63.46	3.01
	Female	47	66.47	

Table 2 shows the variance in undergraduates' scholarly outcomes instructed with the Gamification in Political Science classrooms by students' gender. At pretest, male students had a mean ($\bar{X}$) of 52.10, while female undergraduates had a higher mean ($\bar{X}$) of 61.42. This indicates that female undergraduates had a significantly higher level of pre-existing knowledge of Political Science concepts compared to the male undergraduates. At the posttest, male undergraduates had a mean ($\bar{X}$) of 63.46, while female undergraduates had a mean ($\bar{X}$) of 66.47. This suggests that while female and male students improved at posttest, female undergraduates outperformed the male undergraduates.

The mean variance at the pretest between the male and female undergraduates was 9.32, indicating a substantial gap in scholarly outcomes favouring female undergraduates. Similarly, the mean ($\bar{X}$) variance at the posttest was 3.01, favouring female undergraduates. Thus, female undergraduates outperformed the male undergraduates. This indicates that female undergraduates had enhanced scholarly outcomes more than male undergraduates at the posttest when instructed with the Gamification. This established that the instructional strategy had a greater effect on female undergraduates in enhancing their academic outcome in Social Studies than on male undergraduates.

Ho1: Employing the Gamification teaching approach will not improve Political Science undergraduates' scholarly outcomes

Table 3 ANCOVA on Gamification Effect on Political Science Undergraduates scholarly outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	13432.612[a]	2	6527.664	87.655	.000	.574
Intercept	5786.789	1	5786.789	79483	.000	.399
PRETEST	14155.738	1	14155.738	144.761	.000	.572
Gamification*Conventional Teaching Approach	2375.335	1	2375.335	28.877	.000	.189
Error	9447.885	88	83.710			
Total	463875.000	89				
Corrected Total	22463.587	90				

Table 3 reports the ANCOVA analysis on employing Gamification on Political Science undergraduates' scholarly outcomes. The result indicates a significant effect on undergraduates' scholarly outcomes. It shows that Gamification boosted Political Science undergraduates' scholarly outcomes with a mean square of 6527.664. The F-value of 87.655 is highly significant ($p < .001$), suggesting that the variance in scholarly outcome between the teaching approaches is not the result of chance. With this result, the hypothesis of no significance is rejected. Thus,

the Gamification teaching approach boosted Political Science undergraduates' scholarly outcomes. This finding shows that employing Gamification in a Political Science classroom boosted students' scholarly outcomes.

Ho1: Political Science undergraduate scholarly outcomes will not be affected by gender when instructed with gamification

Table 4 Summary of ANCOVA on the effect of Gamification Teaching Approach on Political Science Undergraduates' scholarly outcomes by gender

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	7213.631[a]	2	4065.875	23.547	.000	.412
Intercept	13107.462	1	13107.462	83.313	.000	.431
PRETEST	7121.521	1	7121.521	46.857	.000	.212
Gender*Gamification	3.216	1	3.216	.018	.786	.000
Error	18714.862	88	175.461			
Total	475891.100	89				
Corrected Total	24725.601	90				

Table 4 shows the result on the effect of gender on Political Science undergraduates' scholarly outcomes using Gamification teaching approach. The result revealed no effect on scholarly outcomes, $F(1, 88) = 0.018$, $p = .786$, suggesting no significant effect on scholarly outcomes by gender students when considering the Gamification. Overall, the results support retaining the null hypothesis, signifying no significant effect on Political Science undergraduates' scholarly outcomes by gender with the Gamification teaching approach.

8. Discussion

The result of hypothesis one indicates that the Gamification teaching method is effective on Political Science undergraduates' scholarly outcomes. Political Science undergraduates' scholarly outcomes were enhanced through the use of Gamification. Thus, undergraduates who were instructed in political science concepts performed scholarly better than those instructed with the conventional approach. This shows that Gamification is more effective for teaching Political Science concepts. Thus, it boosted/enhanced Political Science undergraduates' scholarly outcomes. This finding could be because Gamification encourages students to participate actively and cooperate with fellow learners, unlike the conventional/lecture method, where the learner is a passive listener.

Gamification teaching approach promotes students' participation in learning activities, aiding the comprehension of topics taught. This finding agrees with Öztürk and Korkmaz (2020), Delgado-Gomez et al. (2020), Legaki et al. (2020), Handoko et al. (2021), and Chen and Liang (2022), who reported Gamification effect on students' academic outcomes. This finding also concurs with the studies of Halim et al. (2021) and Krisanti, Vally and Harapan (2021), who found that Gamification enhanced undergraduates' scholarly outcomes.

However, the study finding is at variance with or contrasts with the studies of Hanus and Fox (2015), Novak, Johnson, Tenenbaum and Shute (2016), Wronowski et al. (2020), and Sailer and Sailer (2021), who reported that Gamification did not improve nor had a substantial impact on students' scholarly outcomes. For them, Gamification did not affect students' scholarly outcomes. This study concords with previous researchers who demonstrated that Gamification is effective and enhances students' scholarly outcomes.

The results of hypothesis two show no significant gender effect on undergraduates' scholarly outcomes in Political Science. This might be because both male and female

undergraduates have the same chances to take part in classroom events, which helps both groups do better in school. The result is in accord with the results of Awodun and Oyeniyi (2018), Obro (2018), Salihu, Usman and Buhari (2020), Halim et al. (2021), Ugwu and Nnamani (2023)., who found no gender effect on students' academic outcome.

However, the result is at variance or discrepancy with the result of Oladotun (2020), Mwihia (2020), Oladayo (2021), Halim et al. (2021), and Ugwu and Nnamani (2023).

9. Conclusions

This study has established an empirical foundation for ascertaining the efficacy of the Gamification teaching approach on the scholarly outcomes of Political Science undergraduates. The study results showed a significant increase in students' scholarly outcomes after exposure to the Gamification teaching approach. The study findings show that using gamification in Political Science classrooms significantly boosted undergraduates' scholarly outcomes.

The study demonstrated that the employment/application of Gamification enhanced Political Science undergraduates' scholarly outcomes more than the conventional teaching approach. Furthermore, the study concluded that students' gender does not influence the gamified teaching approach of Political Science.

10. Recommendations

10.1 The gamification should be used in classroom instruction for political science undergraduates.

10.2 Political Science educators/instructors should consider innovative and newer teaching approaches to complement the conventional teaching approach of Political Science.

10.3 Teacher/Instructors, trainers, and curriculum planners should encourage practising instructors/teachers and pre-service instructors/teachers to utilise a gamification teaching approach to enhance undergraduates' scholarly outcomes in Political Science.

10.4 Political Science Education educators should adopt the gamification teaching approach to foster dynamic and engaging learning environments.

10.5 Male and female undergraduates should be allowed to learn in the same classroom when using a gamification approach.

11. Limitations

This study is subject to several limitations. The study sample of eighty-nine undergraduates and a single university does not sufficiently reflect or represent the overall population. This may not allow for broader generalisation of the study findings. The duration of the treatment, spanning six weeks, was fundamentally confined to the instructional period as delineated in the academic schedule and timetable. The objective of this was to ensure that the study would not disrupt the established school timetable and schedule. The subject matter presented was confined to the parameters outlined in the syllabus, thereby safeguarding the uninterrupted operation of the institution. It is posited that an increased number of instructional units could enhance the generalisability of the study's findings. Consequently, it is proposed that an extension study be conducted, incorporating a more substantial sample size. Moreover, the data gathered originated from a single university in Nigeria, potentially constraining the external validity of the results.

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