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THE EFFECT OF GAMIFIED LEARNING ON STUDENTS' ACHIEVEMENT IN YORUBA LANGUAGE

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Abstract
This study aimed to examine the impact of gamification on the academic achievement of students in Yoruba compared to the traditional lecture method. A quasi-experimental design was employed, involving one experimental and one control group comprising 90 senior secondary class 2 students from two schools in Education District 5 of Lagos State. A Yoruba language achievement test (YLAT) was used for data collection, validated by experts, and tested for reliability with a coefficient of 0.76. Both groups underwent pretests, four weeks of treatment, and post-tests. The experimental group, exposed to gamification, achieved a mean score of 29.18, significantly higher than the control group's mean score of 12.73. The result of the ANCOVA test on the post-test achievement scores showed that the difference in the performance between the students in the experimental class and control class was significant, $F(1, 87) = 176.403$; $p < 0.05$. This implies the statistical analysis revealed a significant difference in achievement between the gamification and lecture groups. These findings underscore the efficacy of

gamification in enhancing students' achievement in the Yoruba language. It was recommended that teachers should integrate gamified elements into Yoruba language instruction to enhance students' engagement and motivation; as a result, institutions should provide professional development opportunities for teachers to effectively implement gamified learning strategies.

Keywords: Achievement, Gamified Learning, Gamification, Yoruba Language.

INTRODUCTION

The Yoruba language has 25 alphabets and three tonal indicators. The indicators **(\(do)... _(re)... /(mi)** are used to identify words that have the same spelling but distinct pronunciations and meanings. According to Abdulkareem and Edet (2016), the percentage of proficient Yoruba speakers and writers is continuously declining, and many Yoruba speakers are unable to write the language correctly. Renowned academics Oluwole (2008) and Osborn (2007) joined the chorus of voices advocating for the preservation of the Yoruba language, both in written and spoken forms and attempts to save the Yoruba language have resulted in the use of local tongues by learners and the adoption of indigenous languages as children's first language. Various Yoruba scholars and even lawmakers in some Yoruba-speaking states such as Lagos are advocating for the adoption of the Yoruba as the child's first language.

Challenges with the teaching and learning of Yoruba language in Nigerian schools have been identified from literature to include issues with the shortage of trained Yoruba educators and pedagogical resources (Ayo & Oludele, 2019). Additionally, most public schools lack the necessary resources for Yoruba language instruction and development. The effectiveness and proper use of Yoruba curriculums by teachers also raised serious concerns to researchers. Ayo and Oludele (2019) observed that the students learning Yoruba as a second language (Y2) have not been meeting the requisite conditions for progression as stipulated in the curriculum which evolves around effective communication (both oral and written) for all learners at all levels of studies and development. The Federal Government of Nigeria's multilingual policy offers opportunities, specifically the teaching and study of Yoruba in Senior Secondary Schools and applications of Yoruba as the medium of instruction in Basic Classes 1-6.

Envision a classroom where students discover the Yoruba language via quests, puzzles, and concealed riches of linguistic mastery in learning the Yoruba language which is not a chore but an exciting adventure. The potential of gamified techniques in language education lies in their ability to change the conventional paradigm of passive instruction and rote memorisation into an exciting and immersive exploration process. It can be difficult to plan an interactive learning environment when teachers choose to teach language using traditional methodologies. It is common knowledge that 21st-century learners prefer game-like activities over traditional pen-and-paper instruction (Mee-Mee et al, 2020). As a result, the use of gamification in classroom learning arouses students' interest and excitement toward learning and increases their quest for knowledge and skill

acquisition.

Gamification is a rapidly emerging strategy in education that involves integrating game design aspects into educational institutions to engage and encourage students. Gamification enables students to take ownership of their education and become proactive learners, as learning becomes more fun, and learners learn unconsciously through playing games. Werbach (2012) observed that gamification is about the application of game elements and methods, for carrying out game plans both before the game and while playing the game. The game elements as used refer to rewards, challenges, score sheets, opportunities, instructional methods, prizes, and attention-grabbing features, which are invested into the games used for learning purposes. The objective is to enhance comprehension and encourage a higher and more profound level of engagement in the learning process. Zichermann and Cunningham (2011) further explained that in classrooms, the pupils are seen as competitors, and the game elements are categorized as follows:

- Points: these are used to reward users for their actions.
- Levels: these show how far a player has progressed in the game;
- Leader Board: these encourage players to take part fully in the gaming experience.
- Challenge: these are tasks that players must complete to advance in the game; and
- Badges: these are awards that players receive for completing a particular challenge. (Zichermann and Cunningham, 2011).

A gamified learning environment could be classified into three diverse groups i.e. the dynamics group, mechanics group, and components group (Werbach and Hunter, 2012). The dynamics group is categorised as the highest gamified setting because it has the highest philosophical level. The dynamics group involved storylines, developments, structures, feelings, and interpersonal connections in the process of learning. The next philosophical level in a gamified learning environment is the mechanics group, which has a collection of rules that govern how interactions end in any system. The components group lead to actions and cover obstacles, opportunities, rivalry, teamwork, criticism, acquiring resources, and rewards in the process of learning. Instance of dynamics or mechanics in a gamified process is referred to as a component. This covers things like leaderboards, levels, points, virtual goods, avatars, badges, collections, context unlocking, giving, and accomplishments. Udeani and Akhigbe (2020) clarified further that the points (component) earned in a game provide the rewards (mechanics) which in turn determine the gamers' progression (dynamics) in the game.

Language games in teaching and learning hold numerous advantages in enhancing learners' fluency and language skills. It creates an enjoyable environment for an effective

learning process (Syafiqah-Yaccob & Yunus, 2019). Language games are tools used to create a situation in the classroom that provides learners with opportunities to use the target language they have already learned in a stress-free environment, with the maximum possible free expression to carry out a simple task, solve a problem or communicate a piece of information. Bai et al (2020) revealed that students have positive perceptions of gamified learning and appreciate the social interactions, engagement, and immediate feedback, which are associated with a gamified learning experience. Further, Udeani & Akhigbe (2020) opined that the most important feature could be incorporated into a game-based learning environment to maximize learning goals and outcomes as a competition. This is because competitions, when introduced into game design and development stimulate an environment that motivates and engages students.

Technologies are identified as vehicles that will drive indigenous languages from going into extinction. Makinde et al (2021) revealed that technology could be used to revitalize, reclaim, and support indigenous languages. Games developed from video and mobile technologies are one of the fastest-rising and most significant forms of entertainment (Olademeji et al, 2020). The games with technological involvements have a major role to play in revitalizing and preserving indigenous languages. Omoregbe et al (2014) created an “Android-based Yorùbá Language Mobile E-Tutor”. Currently, users of the Yoruba-based Android system have rated the programme very high. The application's primary goal is to serve a variety of demography interested in acquiring the fundamentals of Yorùbá language for everyday conversation. Abdulakeem and Edet (2016) created a computer assisted Yorùbá language learning system to offer novices and beginners in the learning of Yorùbá language with the digital learning environment. Yoruba Trivia is an educative game developed by Educrush Games that teaches players most of Yoruba vocabulary and its meanings using a fun-filled approach. The game comes in 3 main forms. 1) Tone mark (Ami ohun) - which presents a Yoruba word and its appropriate tonal marks from the options on the screen that best suit the word. 2) Syllable (silebu) - This form of the game presents Yoruba word, and players are expected to pick one of the 4 options of syllables which is right for the word. 3) OddWordOut - This presents to you 4 Yoruba words, 3 of which are related, you are expected to fish out the odd one. Whenever a player loses a chapter, a life out of the six lives given would be taken. This game presents learners with the opportunity to learn the Yoruba language while playing the game. The Yoruba language is facing several obstacles in its growth and preservation given the prominence of other languages due to globalisation. The conventional approaches to teaching and learning Yoruba language frequently fail to arouse the interest of students, engage learners and resulting in declining proficiency levels among younger generations despite its significance in preserving cultural identity and promoting communication among Yoruba-speaking communities. innovative educational strategies, such as gamified learning, which use game design components to improve motivation, and engagement, and improve learning results, are being explored as a reaction to these difficulties. However, there is still a lot to learn about the efficacy of

gamified learning in Yoruba language instruction. Consequently, the purpose of this study is to examine the impact of gamification on the academic achievement of students in Yoruba compared to the lecture method.

Research Question

What impact does gamification have on the academic achievement of students in Yoruba compared to the lecture method?

Research Hypothesis

There is no statistically significant difference in the achievement of students in Yoruba when taught using gamification and lecture methods.

Methodology

The study was a quasi-experimental design that employed a quantitative data collection technique involving one experimental and one control group. The population of the study comprised of all students offering Yoruba language in Senior Secondary class 2 in Education District 5. The sample comprised 90 senior secondary class 2 students offering Yoruba Language in an intact class in two senior secondary schools in Education District 5 of Lagos State. These schools were conveniently selected to be part of the study based on the readiness of the school to take part in the study. There were 45 students in the experimental class (gamification) and 45 students in the control (lecture). The students were chosen from SS2, as the content of the school's educational programme at that stage was consistent with the kind of content the testing situation needed. Achievement data were collected through a Yoruba language achievement test (YLAT). This instrument comprised 40 multiple-choice items. The validity of the instrument was done by experts in educational technology and Yoruba language to ensure the face and content validity was met. A test-retest method was used to determine the reliability of the instrument which was done on a sample of the population. A reliability coefficient of 0.76 was obtained. A lesson plan was developed for the experimental class and the control class to ensure uniformity of lesson content across both groups. Both experimental and control classes were firstly subjected to a pretest followed by four weeks of the treatment then a post-test was carried out using the same achievement measures. The learning experience of the experimental and control classes was on "Ami ohun and Silebu" for four weeks. In the experimental class, the teaching and learning of the concept were done using a combination of a card game used to teach Ami Ohun and a digital mobile game called Yoruba trivia to teach silebu.

In the experimental class session, the rule of the game was systematically explained, and questions were entertained from students to clear their misconceptions. The teacher in the experimental group then proceeded to demonstrate how the game elements were to function during the gameplay. Students were put in a group of 5 with 9 groups in the class and each member of a group was allotted an avatar. Scoring was done by the group that ascertain the best performers within each group and give a sense of competition among group members.

In the control group, the teachers taught the class using the traditional lecture

method where students were generally passive learners listening to the explanations of the teachers, writing down notes, and asking questions to clear their misconceptions. As the lesson progressed, the teacher discussed the topic and used relevant examples relating to the topic. The students were advised not to cause disarray for the duration of the presentation and were encouraged to pay keen attention to the presentation made by the teacher.

All experimental and control group students were post-tested using the same instrument. After the treatment in both groups, the participants were given the same achievement measure as the pre-test and were asked to answer them. Instructions were identical to the pre-test. Quantitative data generated in the study were analysed using IBM-SPSS Version 23. Since one dependent variable was of interest in the study; students' achievement and random assignment to experimental and control groups was not achieved, so the suitable analysis tool was the analysis of covariance (ANCOVA). The pretest and post-test achievement scores from the experimental and control classes were inserted into the ANCOVA equation with the pre-test scores as the covariate.

RESULTS

Research Question

What impact does gamification have on the academic achievement of students in Yoruba compared to the lecture method?

Table 1: Means and SD on the Posttest Achievement of Students Taught Yoruba with Gamification and Lecture Method

Teaching Method	N	Mean	SD
Gamification	45	29.18	12.00
Lecture	45	12.73	1.85

The findings derived from the descriptive analysis indicate that the average scores of students in both the experimental and control classes were similar before the implementation of the intervention. Specifically, the mean score for the experimental class was 29.18, while the mean score for the control class was 12.73.

Null Hypothesis

There is no statistically significant difference in the achievement of students in Yoruba when taught using gamification and lecture methods.

Table 2: ANCOVA Summary of Posttest Achievement Scores of Students with Pretest Achievement Scores as Covariate

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	194.906[a]	2	97.453	8.278	.001
Intercept	2120.677	1	2120.677	180.137	.000
Pretest Achievement	15.695	1	15.695	1.333	.251

Teaching Strategy	176.403	1	176.403	14.984	.000(**S**)
Error	1024.217	87	11.773		
Total	19225.000	90			
Corrected Total	1219.122	89			

The result of the ANCOVA test on the post-test achievement scores showed that the difference in the performance between the students in the experimental class and control class was significant $F(1, 87) = 176.403$; $p < 0.05$. This implies that the difference observed between achievement in the experimental and control classes is statistically significant, thus, the observed improvement in the academic achievement of students in the experimental class can be associated with the treatment given which was the use of gamification in teaching Yoruba language.

Decision

The null hypothesis which states that there is no statistically significant difference in the achievement of students in Yoruba when taught using gamification and lecture methods is hereby rejected.

DISCUSSION OF FINDINGS

The result of this study aimed to answer the question which was to examine the impact gamification has on the academic achievement of students in Yoruba compared to the lecture method. The findings from Table 1 indicated that the mean score for the experimental class was 29.18, while the mean score for the control class was 12.73. hence students in the experimental class (Gamification) performed better when compared to the control class. The result in Table 2 indicated a statistical significance in the achievement of students in Yoruba when taught using gamification and lecture methods.

The finding of this study is in line with Camacho-Sánchez et al (2022) justified the use of Digital Game Based Learning and Gamification in university studies of physical education, which significantly improves academic performance and fosters a high level of intrinsic motivation in students. They concluded that game-based Learning should be considered a promising pedagogical strategy for teaching physical education. León et al (2022) study to analyse the influence of gamification on educational flow and academic performance where they compared the gamified cooperative learning method with the directive teaching methodology. Their result showed statistically significant differences in perceived class flow and academic performance in favour of the gamified group. In addition, it found that the improvements noticed in the gamified methodology were just as effective for girls as were for boys. Similarly, Zahedi et al (2021) noted improved performance for students of all genders, suggesting that gamification was a gender-neutral learning engagement strategy that improved female students' performance as much as male students.

Ferriz-Valero et al (2020) agreed with the findings of this study which noted Gamification is an innovative education approach, although it was noted to have different

effects among students. However, their findings suggested that the implementation of gamification is beneficial for academic performance in university students, even though their intrinsic motivation is not enhanced but seems to improve learning experiences. Also, the finding of this study aligns with Arufe Giráldez et al. (2022) which indicated that a group of students who underwent a Gamified Learning Environment obtained higher final grades than students from the control group who took the subject following traditional teaching methods where statistically significant differences were also recorded within the intervention student group, with those who actively participated in the gamification earning more points which ultimately culminated in higher final grades in the subject.

CONCLUSION

The findings of this study have provided compelling empirical evidence regarding the impact of gamification on the academic achievement of students in Yoruba compared to the traditional lecture method. Through careful analysis and comparison of mean scores between the experimental (gamification) and control (lecture) classes, it is evident that gamification has a significant positive effect on students' achievement. The notable disparity suggests that students who were exposed to gamified learning experiences outperformed their counterparts who received instruction through traditional lectures. These results underscore the potential of gamification as an effective educational tool for enhancing academic outcomes in the field of Yoruba language education. The documented difference in achievement between the two instructional methods substantiates the notion that gamification offers distinct advantages over conventional teaching approaches. This statistical evidence lends credence to the efficacy of gamified learning environments in fostering engagement, motivation, and ultimately, improved achievement among students studying Yoruba.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations on the benefits of gamification in Yoruba language instruction:

1. Teachers should consider integrating gamified elements into their Yoruba language instruction to enhance students' engagement and motivation. By incorporating game-like features such as challenges, rewards, and interactive activities, teachers can create dynamic learning experiences that result in diverse learning styles and preferences.

2. Institutions should invest in professional development opportunities to equip teachers with the knowledge and skills necessary to effectively implement gamified learning strategies in the classroom. Training programs and workshops focused on gamified pedagogies can empower educators to leverage technology and gamified platforms to facilitate meaningful learning experiences for their students.

3. Further studies should investigate the long-term effects and sustainability of gamification in Yoruba language instruction and the impact of gamified interventions on student motivation, language proficiency, and retention over an extended period.

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