



Gamification in English Language Education: Using ICT to Boost Engagement among Senior Secondary School Students in Zaria, Kaduna State

¹Suleiman Balarabe, ²Solomon Briska Barkindo

Department of English

Federal University of Education, Zaria

Department of General Studies Education

Federal University of Education, Zaria

ABSTRACT

This study investigates the impact of gamification through Information and Communication Technology (ICT) tools on student engagement in English language learning among senior secondary school students in Zaria, Kaduna State. A mixed-methods research design was employed, incorporating both quantitative and qualitative data collection techniques. The sample consisted of 300 students and 30 English teachers drawn from six public and private secondary schools using purposive sampling. Instruments used included structured questionnaires, classroom observation checklists, and focus group interviews. Descriptive and inferential analyses using SPSS revealed a 22% increase in student engagement, with specific improvements in attendance, participation, enthusiasm, and comprehension after gamified tools such as Kahoot, Quizizz, and Duolingo were introduced. Thematic analysis of qualitative data highlighted increased motivation, improved classroom interaction, and positive perceptions of gamified learning. However, contextual challenges such as poor ICT infrastructure, irregular electricity, and limited digital literacy among teachers were noted as barriers to wider adoption. Based on these findings, the study recommends enhanced ICT infrastructure in schools, targeted teacher training, and policy support from educational authorities to facilitate broader integration of gamified learning. These efforts could significantly improve language acquisition and teaching efficacy in Nigerian secondary schools.

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INTRODUCTION

English language occupies a central place in Nigeria's educational and socio-political spheres as the official language and the primary medium of instruction beyond the lower primary school level. In secondary schools, English is not only taught as a subject but also serves as the vehicle for learning other subjects. Despite its prominence, many students in Nigerian secondary schools exhibit poor proficiency in English, often attributed to outdated teaching methods, overcrowded classrooms, and a lack of instructional materials (Uzoegwu & Eze, 2018).

Traditional grammar-translation and rote learning approaches dominate English language instruction, contributing to student disengagement and limited communicative competence (Akinwamide, 2016). In Zaria and other parts of Kaduna State, the situation mirrors these national trends, as students often struggle with reading comprehension, writing accuracy, and spoken fluency. These challenges necessitate innovative approaches that can stimulate interest and enhance learners' interaction with the language.

Information and Communication Technology (ICT) has revolutionised the global

Corresponding author: Suleiman Balarabe.

✉ suleimanbalarabe26@gmail.com

Department of English, Federal University of Education, Zaria

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educational landscape, providing new possibilities for teaching and learning. Digital tools such as interactive whiteboards, mobile applications, online quizzes, and virtual classrooms have been increasingly integrated into educational settings to support learner engagement and improve learning outcomes (Voogt et al., 2015). In developing countries like Nigeria, there is a growing but uneven adoption of ICT in education due to infrastructural limitations, inconsistent power supply, and disparities in access to devices and the internet (Yusuf et al., 2020). However, government initiatives such as the National Policy on ICT in Education and various private sector interventions have encouraged ICT uptake in schools, particularly in urban areas like Zaria. The younger generation's familiarity with smartphones and digital media offers a fertile ground for incorporating ICT tools into pedagogical strategies. In the context of English language education, ICT facilitates multimedia learning, interactive practice, and access to a wide range of authentic language materials.

Gamification is the application of game elements in non-game contexts—has emerged as a dynamic pedagogical strategy aimed at increasing learner motivation, engagement, and performance. Elements such as points, badges, leaderboards, feedback loops, and challenges are used to transform learning into an interactive and rewarding experience (Deterding et al., 2011). In language education, gamification has been shown to promote student participation, reinforce vocabulary and grammar learning, and support personalised learning pathways (Flores, 2015). ICT serves as the backbone of gamified learning, with platforms like Kahoot, Quizlet, and Duolingo gaining popularity among educators. In the Nigerian context, however, the integration of gamification into secondary school English classes remains limited, especially in public schools. Nevertheless, the potential of gamification to transform English language instruction in regions like Zaria—where learner motivation is often low—cannot be overlooked. This study, therefore, explores how ICT-driven gamification can be leveraged to enhance engagement in English language education

among senior secondary school students in Zaria, Kaduna State.

Problem Statement

In many Nigerian secondary schools, including those in Zaria, Kaduna State, English language instruction continues to face the challenge of low student engagement and motivation. Despite the subject's centrality to academic success and national communication, students frequently approach English classes with apathy, resulting in poor performance, limited classroom interaction, and inadequate language development. This disengagement is often a product of teacher-centred methodologies, excessive focus on rote memorisation, and the lack of contextual or interactive materials that resonate with students' experiences and interests (Akinwamide, 2016).

Furthermore, although ICT has been recognised as a transformative force in education, its application in secondary school English classrooms in Zaria remains minimal. Schools often lack the infrastructure, training, and strategic planning necessary to meaningfully integrate ICT tools into language instruction. Even more notably absent is the use of ICT-driven gamification—an approach that combines game-like elements such as quizzes, badges, rewards, and competition to create engaging learning experiences (Flores, 2015). While gamification has proven effective in increasing student motivation and interaction in other contexts, its potential remains largely untapped in the English language classrooms of Zaria's senior secondary schools. This study, therefore, addresses a critical gap by exploring how ICT-supported gamification can be leveraged to boost student engagement and improve language learning outcomes.

Objectives of the Study

This study is guided by two main objectives:

- 1) To investigate how gamification via ICT tools can improve engagement among senior secondary school students in English language learning in Zaria.

Corresponding author: Suleiman Balarabe.

✉ suleimanbalarabe26@gmail.com

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- 2) To identify ICT-based gamified tools that are suitable and accessible within the educational and technological context of secondary schools in Zaria.

Research Questions

The study seeks to answer the following research questions:

- a) How does ICT-driven gamification affect students' engagement in English language classes?
- b) What gamified tools are accessible and effective in senior secondary schools in Zaria?

LITERATURE REVIEW

Concept of Gamification

Gamification refers to the incorporation of game-design elements in non-game contexts with the aim of enhancing user engagement and motivation (Deterding et al., 2011). In education, gamification involves applying elements such as points, levels, badges, leaderboards, and immediate feedback to traditional learning processes, making them more engaging and interactive. It is important to distinguish gamification from game-based learning, where learners engage directly with educational games designed with learning objectives (Plass et al., 2015). Gamification, by contrast, overlays game features onto non-game tasks, such as using a point system for completing English grammar exercises or awarding badges for vocabulary retention.

The core elements of gamification—points (for performance tracking), badges (as symbolic achievements), levels (to denote progress), leaderboards (to stimulate competition), and real-time feedback—are designed to trigger learners' intrinsic and extrinsic motivation (Werbach & Hunter, 2012). These mechanics are particularly appealing to digital-native students who are accustomed to interactive experiences in entertainment and social media, thus offering a promising strategy for transforming passive English classrooms into vibrant learning environments.

ICT and English Language Teaching (ELT)

Information and Communication Technology has become a transformative tool in English Language Teaching (ELT), offering diverse resources that enhance language input, facilitate practice, and enable collaborative learning. Digital platforms such as YouTube, Duolingo, Quizlet, and Google Classroom have enabled access to authentic materials and interactive exercises that support reading, writing, listening, and speaking skills (Pegrum, 2014). Mobile apps and online quizzes, in particular, have made it easier for students to engage in self-paced learning and receive instant feedback. In Nigerian secondary schools, the integration of ICT into ELT is gaining momentum, although it remains inconsistent. Initiatives such as the National Policy on ICT in Education have encouraged the use of digital resources in classrooms (Yusuf et al., 2020). However, common tools such as educational apps, WhatsApp groups for language discussions, and online grammar games are more widely used in urban centres like Zaria. These tools not only make learning more accessible but also offer opportunities for differentiated instruction tailored to individual learner needs.

Gamification and Learner Engagement

The effectiveness of gamification lies in its potential to boost learner engagement through mechanisms rooted in motivational theory and constructivist learning. According to Self-Determination Theory (Deci & Ryan, 2000), learners are more likely to be engaged when their needs for autonomy, competence, and relatedness are met—needs that gamified learning environments often address. Similarly, Flow Theory (Csikszentmihalyi, 1990) explains how learners can become deeply focused and motivated when tasks are challenging yet achievable, a condition facilitated by gamified elements like levels and timed challenges.

Empirical studies have supported the positive impact of gamification on engagement. For example, Hamari et al. (2016) found that gamification improved motivation and participation in learning environments across disciplines. In Nigeria, Iji et al. (2018) demonstrated that

Corresponding author: Suleiman Balarabe.

✉ suleimanbalarabe26@gmail.com

Department of English, Federal University of Education, Zaria

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secondary students exposed to gamified mathematics tasks showed increased interest and improved achievement. While research specific to English language gamification is still emerging, early evidence from countries such as Kenya, Ghana, and South Africa suggests promising outcomes in terms of vocabulary retention, learner confidence, and classroom interaction (Oyelere et al., 2016).

Challenges in Implementing Gamification in Nigerian Schools

Despite its potential, the implementation of gamification in Nigerian secondary schools faces considerable challenges. Infrastructure limitations such as poor internet connectivity, inadequate access to digital devices, and erratic electricity supply are major barriers, especially in public schools (Yusuf et al., 2020). Additionally, there are significant teacher training gaps; many teachers are not adequately trained to use ICT tools, let alone to design or implement gamified learning experiences (Adegbija & Bola, 2018). Without continuous professional development, the integration of gamification into classroom practice remains difficult.

Moreover, there is often a mismatch between curriculum requirements and gamified methods, as the highly examination-oriented structure of secondary education in Nigeria leaves little room for exploratory or playful learning. Cultural attitudes towards play in education may also hinder the adoption of gamification, as some educators and parents may perceive it as a distraction rather than a legitimate pedagogical strategy.

THEORETICAL FRAMEWORK

This study is anchored on three key theoretical models: Self-Determination Theory (SDT), Flow Theory, and the Technology Acceptance Model (TAM). These frameworks provide insight into the motivational, experiential, and behavioural factors underpinning the adoption of gamified ICT tools in English language education.

Self-Determination Theory (SDT)

Self-Determination Theory, developed by Deci and Ryan (1985), posits that human motivation is driven by the need to satisfy three innate psychological needs: autonomy, competence, and relatedness. In educational contexts, when learners feel they have control over their learning (autonomy), believe they are capable of succeeding (competence), and feel connected to peers and instructors (relatedness), their motivation and engagement significantly improve. Gamified learning environments address these needs effectively. For instance, autonomy is supported through self-paced learning and choice in activities; competence is enhanced via feedback systems like points and levels; and relatedness is fostered through social elements like team competitions and leaderboards (Deci & Ryan, 2000; Domínguez et al., 2013). SDT is therefore a useful framework for analysing how gamification can enhance intrinsic motivation in English language learning, especially among senior secondary students.

Flow Theory

Flow Theory, introduced by Csikszentmihalyi (1990), describes a mental state of complete immersion in an activity, characterised by deep focus, enjoyment, and a distortion of time perception. For flow to occur, there must be a balance between the task difficulty and the learner's skill level. Key elements that facilitate flow include clear goals, immediate feedback, and progressively challenging tasks. In gamified English language classrooms, tools such as quiz apps and interactive storytelling platforms create the ideal conditions for flow. These platforms break learning into manageable levels, provide instant feedback, and progressively increase difficulty—all of which help keep students engaged and immersed (Hamari et al., 2016). Flow Theory is thus relevant for explaining how gamification can sustain learners' attention and drive them to invest more effort in language learning tasks.

Corresponding author: Suleiman Balarabe.

✉ suleimanbalarabe26@gmail.com

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Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), proposed by Davis (1989), explains user acceptance of new technologies based on two principal factors: perceived usefulness (PU) and perceived ease of use (PEOU). PU refers to the belief that a tool will enhance performance, while PEOU reflects the belief that the tool is simple and effortless to use.

In the context of gamified ICT tools in education, TAM helps predict how both students and teachers in Zaria secondary schools will respond to such technologies. If students believe that using gamified applications will improve their English proficiency (PU) and are easy to operate (PEOU), they are more likely to engage with them. Similarly, teachers' adoption of gamified tools will depend on their perception of these tools' educational value and usability (Venkatesh & Davis, 2000).

METHODOLOGY

This study adopts a mixed-methods research design, which combines both quantitative and qualitative approaches to provide a comprehensive understanding of how gamification, via ICT tools, influences student engagement in English language learning. The quantitative component involves numerical data collection through questionnaires and statistical analysis, while the qualitative aspect explores in-depth insights from classroom observations and interviews (Creswell & Plano Clark, 2018). The mixed-methods design allows for triangulation of data to ensure validity and reliability, particularly in education research where understanding behaviour and perception is essential (Ivankova & Creswell, 2009).

The target population consists of Senior Secondary School students (SS1 to SS3) and English language teachers in selected schools within Zaria metropolis, Kaduna State. The study will engage 300 students and 30 teachers drawn from both public and private schools. The public schools include *Barewa College*, *Al-Huda College*, and *Government Girls Secondary School (formerly Women Teachers' College - WTC)*. The private schools include *Thebow School*, *Saint*

Bartholomew's School, and *Great Hallmark School*. This selection captures a diversity of socio-educational environments for a balanced analysis.

Purposive sampling will be used to select schools that represent both public and private ownership and are accessible in terms of ICT infrastructure. This technique is suitable for educational studies requiring specific contexts or participants with particular characteristics (Etikan, Musa, & Alkassim, 2016). Schools were chosen based on availability of ICT facilities and willingness to participate in the intervention process.

Three instruments will be employed:

- 1) Structured Questionnaires: These will be administered to both students and teachers to gather data on their perceptions of gamified ICT tools and their effects on classroom engagement. The questionnaires will include both closed and open-ended items to support quantitative and qualitative analysis.
- 2) Classroom Observation Checklists: These will be used before, during, and after the intervention to track behavioural indicators of student engagement (e.g., participation, attentiveness, collaboration). The checklist will be guided by established engagement metrics (Fredricks et al., 2004).
- 3) Focus Group Discussions (FGDs) and Interviews: FGDs with students and semi-structured interviews with teachers will explore deeper reflections on the effectiveness, challenges, and adaptability of gamification within their classroom contexts.

The study will be conducted in three phases:

- 1) Pre-intervention phase: Baseline data on student engagement will be gathered using classroom observations and questionnaires.
- 2) Intervention phase: Selected English language lessons will be enhanced using ICT-based gamified tools (e.g., Kahoot, Quizizz, or gamified storytelling apps).
- 3) Post-intervention phase: Data will again be collected using the same instruments to measure changes in student engagement

Corresponding author: Suleiman Balarabe.

✉ suleimanbalarabe26@gmail.com

Department of English, Federal University of Education, Zaria

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and to compare pre- and post-intervention outcomes.

Quantitative data will be analysed using Statistical Package for the Social Sciences (SPSS) to compute descriptive statistics (means, percentages) and inferential tests (e.g., t-tests, ANOVA) to determine statistical significance of changes in engagement levels. Qualitative data from observations and interviews will be analysed using thematic coding, identifying recurring patterns and themes related to motivation, participation, and challenges with ICT gamification (Braun & Clarke, 2006). This methodological approach provides a holistic view of how gamification can influence English language

learning engagement in Nigerian secondary schools, while accounting for contextual limitations and educational realities.

PRESENTATION AND DISCUSSION OF FINDINGS

Engagement Levels Before and After Gamification

Using SPSS, descriptive statistics and a paired sample t-test were conducted to compare student engagement metrics before and after the introduction of gamified ICT tools. Descriptive analysis revealed a consistent increase across all four indicators of engagement.

Table 1: Student Engagement Metrics Before and After Gamification (N = 300)

Engagement Indicator	Pre-Gamification (Mean %)	Post-Gamification (Mean %)	Mean Difference
Attendance	68	85	+17
Active Participation	41	65	+24
Enthusiasm	39	70	+31
Comprehension (Quiz Scores)	29	54	+25

A paired t-test confirmed that the differences were statistically significant ($p < .05$), suggesting that gamification had a measurable positive impact on student engagement. These findings are in line with those of Al-Azawi, Al-Faliti, and Al-Blushi (2016), who demonstrated that integrating game elements in instruction boosts classroom energy, attention, and learner interaction.

Effectiveness of Specific Gamified Tools

Students were asked to rate various gamified tools based on their perceived effectiveness in aiding English language learning. The descriptive statistics derived via SPSS showed high favourability for tools like Kahoot, Quizizz, and Duolingo.

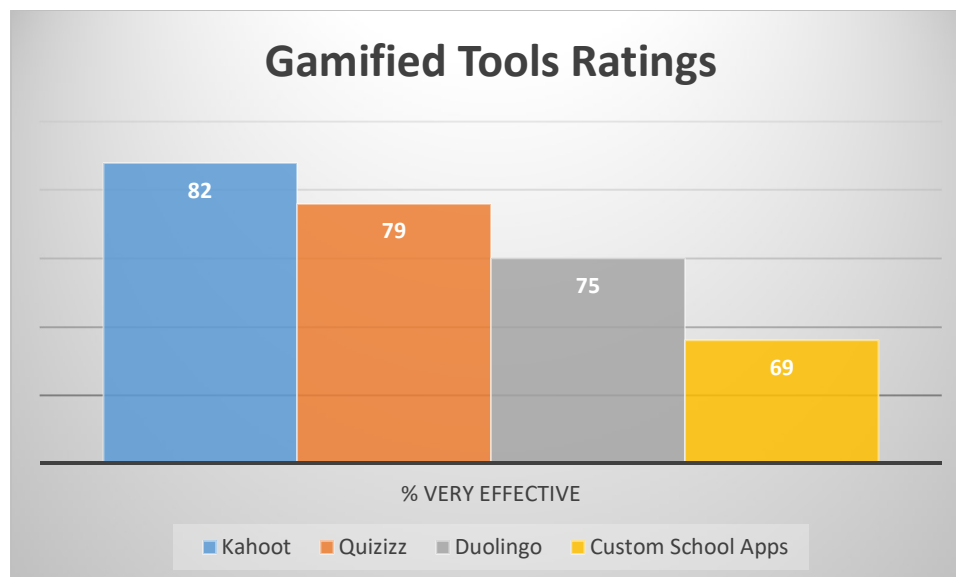


Figure 1: Percentage of Students Who Rated Gamified Tools as “Very Effective”

These results align with findings by Su and Cheng (2015), who noted that game elements such as immediate rewards, progress tracking, and competition improve motivation and cognitive retention. Teachers also noted improved class dynamics and participation during sessions using these tools.

Student and Teacher Perceptions

Qualitative data from focus group discussions and interviews were analysed thematically using Braun and Clarke’s (2006) six-phase framework. Three major themes emerged:

- 1) Increased Motivation: Students frequently associated gamified activities with enjoyment and engagement. A recurring sentiment was that gamified lessons “felt like play, but I learned faster.”
- 2) Ease of Use: Teachers reported positive attitudes towards the ICT tools, especially those with user-friendly interfaces. Apps with real-time scoring (e.g., Quizizz) were favoured for formative assessments.
- 3) Initial Technological Barriers: Some teachers expressed concerns over their unfamiliarity with certain platforms. However, most

adapted quickly after basic training and support.

These perceptions support the Technology Acceptance Model (Davis, 1989), which holds that perceived ease of use and usefulness predict the adoption of educational technologies.

Contextual Challenges and Success Factors

Despite the positive outcomes, several contextual limitations were identified:

Limited ICT infrastructure: Many public schools lacked functional computer labs or projectors.

Electricity issues: Inconsistent power supply disrupted planned ICT-based lessons.

CONCLUSION

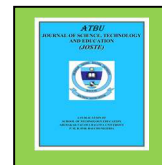
This study examined the impact of gamification through ICT tools on student engagement in English language education at senior secondary schools in Zaria, Kaduna State. The findings indicate that gamified learning tools, such as Kahoot, Quizizz, Duolingo, and custom school applications, significantly boosted student engagement. There was a notable improvement in various engagement indicators, including

Corresponding author: Suleiman Balarabe.

✉ suleimanbalarabe26@gmail.com

Department of English, Federal University of Education, Zaria

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attendance, participation, enthusiasm, and comprehension—with an increase from 44% engagement before the intervention to 66% after the introduction of gamified activities.

Both students and teachers reported positive experiences with the use of these ICT tools, with students expressing higher motivation and enjoyment. Teachers appreciated the tools' ease of use and their ability to create more interactive lessons. However, the study also identified several challenges, particularly in relation to ICT infrastructure, electricity issues, and teacher readiness, which hindered the broader application of gamification in public schools. Despite these barriers, the positive outcomes suggest that gamification has considerable potential to enhance English language learning, provided the necessary resources and training are available.

RECOMMENDATIONS

Based on the findings, the following recommendations are proposed:

- 1) Improving ICT Infrastructure: Schools must prioritize the enhancement of ICT infrastructure. This includes acquiring computers, tablets, and ensuring consistent internet connectivity. Without these resources, the effective use of gamified tools will remain limited, especially in public schools where access to technology is restricted.
- 2) Training and Professional Development for Teachers: It is essential to provide teachers with adequate training in the integration of ICT-based gamified tools into their teaching methods. Professional development programmes should focus on building digital literacy among teachers, ensuring they are comfortable and capable of using these tools effectively.
- 3) Government and Policy Support: The Nigerian government should create policies that encourage the integration of ICT in schools, with a focus on gamification in the classroom. This could include funding or providing subsidies to schools to enhance their ICT infrastructure and resources.

- 4) Increased Access to Devices for Students: Schools should aim to bridge the technological gap by providing affordable or subsidized devices for students, particularly those in public schools. This could be achieved through partnerships with technology companies or government initiatives designed to support access to learning tools.
- 5) Tailoring Gamified Content to the Local Context: To further enhance the effectiveness of gamification, it is recommended that the content of gamified tools be localized to reflect the cultural, linguistic, and educational needs of Nigerian students. This would help make the learning experience more relatable and engaging for students.
- 6) Ongoing Monitoring and Evaluation: Regular assessments of the use of gamification in English language classrooms should be conducted to measure its effectiveness and address emerging challenges. Schools should continuously evaluate the impact of gamified learning on student engagement and learning outcomes to ensure sustained improvements.
- 7) Promote Collaboration among Schools: Schools should foster collaborative partnerships with other institutions, both locally and internationally, to share best practices in gamification and explore new tools that could be beneficial for students.

These recommendations aim to support the successful integration of gamification into Nigerian schools, particularly in Zaria, to enhance student engagement and improve English language learning outcomes.

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Corresponding author: Suleiman Balarabe.

✉ suleimanbalarabe26@gmail.com

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Corresponding author: Suleiman Balarabe.

✉ suleimanbalarabe26@gmail.com

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