

FROM TRADITIONAL LITERACY TO FUTURE-READY LEARNING: INTEGRATING DIGITAL GAMES IN SMART CLASSROOMS

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Abstract

English Language taught in most classrooms in Nigeria often rely on rigid, lecture-based techniques focused on rote learning, textbooks, and examination drills. While these methods help build basic reading and writing skills, they fall short when it comes to sparking student involvement, creativity, critical thinking and digital skills required in the 21st century. With technology shifting quickly, the ways students find, understand, and respond to information have changed dramatically. In English Language education, traditional literacy practices are increasingly inadequate for preparing learners for future academic and digital communication demands. This paper argues that digital games, when integrated into smart classrooms, provide a powerful pedagogical tool for enhancing engagement, reading comprehension, vocabulary development, and learner autonomy. Drawing on the constructivist theory, the paper positions digital game-based learning as a shift from passive, teacher-centered instruction to active, learner-centered engagement, which improves reading comprehension, supports vocabulary development, and strengthens digital literacy skills. It further contends that digital games align with the realities of 21st-century learners and support future-ready literacy development. However, challenges like poor infrastructure, overcrowded classrooms, limited teacher ICT competence, teacher readiness, and curriculum rigidity must be addressed. The paper concludes that integrating digital games into Nigerian English Language classrooms is not optional but essential for improving literacy outcomes and preparing learners for 21st-century communication demands.

Keywords: Digital games, smart classrooms, English Language teaching, digital pedagogy

Introduction

English Language plays a central role in Nigeria's education system, serving as both a subject of instruction and a medium of communication across academic disciplines (Nwanyanwu, 2017). As a medium of instruction and a core subject in national examinations such as WAEC and NECO, English plays a critical role in academic and professional success. The English language is a prerequisite for admission to universities and is also compulsory for all first-year students in the universities as specified by the National Universities Commission (NUC) (Obiegbu, 2016). The importance of English language as a school subject derives mainly from its utilitarian value to the larger Nigerian society. The English language skill has become a necessity for establishing linkages with the rest of the world in international trade, economic development, and even in the use of new technology. According to Jirgba and Abon (2025), English Language in this era of globalization will increase the capacity of people to communicate and exchange ideas and goods across borders.

The primary purpose of teaching at any level of education is to bring a fundamental change in the learner (Idaka, Etengeneng and Osedumme, 2022). Teaching and learning of English language is fundamental for secondary schools in Nigeria. English language is considered by many to be the international language (Akbari, 2015). The

secondary schools prepare students for university education in Nigeria. It is a fundamental level of education that lays the foundation for admission and choice of career options for students in Nigeria. Secondary school curriculum in Nigeria is designed to encourage all students to achieve their career, intellectual and social potential as well as to understand the relevance of learning in their daily lives (Ahmadi & Lukman, 2015). Teaching and learning of English language is very important in schools because of the usefulness of the language. It is estimated that there are 380 million native speakers, 300 million who utilise English as a second language and an additional 100 million who use it as a foreign language (Mahu, 2012). Until today, questions about the effectiveness of teaching methods on student learning have consistently raised considerable interest in the thematic field of educational research (Hightower, 2010).

Despite the importance of English Language education in Nigeria, performance in English Language remains persistently low across Nigerian secondary schools, particularly in reading comprehension and writing skills. Many students struggle to interpret texts, apply vocabulary, and engage critically with reading materials. One major reason for this challenge is the continued reliance on traditional instructional approaches that do not reflect the realities of today's learners. Nigerian students are increasingly exposed to digital environments such as mobile phones, video games, social media, and interactive applications. Yet, classroom instruction remains largely analogue, examination-driven, text-heavy and teacher-centered with limited opportunity for interaction, creativity or digital engagement. At the same time, Nigerian learners are deeply immersed in digital culture. Mobile phones, video games, and interactive media shape how they learn, communicate, and process information. This creates a disconnect between classroom practices and learners' lived experiences. This reflects a pressing need to rethink English Language pedagogy. Digital games, when properly integrated, offer a practical pathway toward transforming Nigerian classrooms into more engaging and future-ready learning spaces that align with modern learners' cognitive and social habits.

The paper is organized into four significant sections. The first part deals with the reality of Nigerian English Language classrooms. The second part presents a case for redefining literacy with a practical look at digital games. The third one underlines the impact of digital games in the Nigerian English Language classrooms. The final section synthesizes the challenges in Nigerian implementation and presents actionable recommendations on how to adopt digital learning models for Nigerian Education. This work seeks to make a worthy contribution to the current debate on digital pedagogies for future-ready education by connecting theory and practice.

The Reality of Nigerian English Language Classrooms

The Nigerian English Language classroom has traditionally relied on print-based texts, grammar instruction, and teacher-centered methodologies. While these approaches have supported foundational literacy, they are increasingly insufficient in preparing learners for the demands of a digitally evolving world (Gee, 2015). English language teaching in formal schools is guided by a certain curriculum; syllabus and scheme of work designed to suit the purpose of the learner and meant to be used within a stated period of time. During the teaching-learning process, the misfit is either frustrated or ignorantly complacent, while the teacher is equally dissuaded. In most cases, the teachers are deficient. Olusoji (2012) provides a clue to this deficiency as he argues that 'the majority of the teachers who teach the language are incompetent' because the teachers are equally 'victims of incompetent teaching.' This presupposes that the problem is rather generational and requires drastic measures.

Lack of competence makes effective teaching a serious challenge for teachers. Some are grossly inept in both the knowledge of content and pedagogy. Others are simply too rigid to be effective. Many practising teachers are 'glued to the old method of teaching English transmitted across levels' (Olaofe, 2013). They lack the required ability to synthesize available materials and provide the students with the needed skills. Teachers of English still compartmentalize language skills in the era of integration and, as such, find it difficult to help the students achieve the desired communicative competence. Traditional literacy relied on the ability to read and write printed texts. Most English Language classrooms in Nigeria are characterized by large class sizes, limited instructional resources, examination-driven teaching, teacher-centered instruction and low student participation. These conditions often result in passive learning, where students memorize rules without meaningful engagement with language use. For instance, the learning of vocabulary takes place through a word-for-word translation from mother tongue to target language, or vice versa, when students would most usually memorize the translations by rote. Vocabulary is learned in context, often through demonstration and conversation. Although the approach allows for fluency and comprehension, being resource-intensive and relying on experienced tutors limits its application areas (Amir, 2025).

Due to increasing complexities and criticism of the methods used earlier, modern methods have evolved. With the development of technology, computer-aided learning has also gained popularity and is widely used in today's world, which is embarking on learning through technology. All these methods are proven to be effective according to time and era, and, over time, new methods have evolved to match changing needs (Sharma, Manjari and Joshi, 2024). Contemporary learners engage daily with digital environments such as mobile applications, online games, and interactive media. This creates a pedagogical gap between classroom instruction and students' lived digital experiences. As Prensky (2010) argues, digital-native learners require instructional approaches that align with their cognitive and technological realities.

The Case for Redefining Literacy

The integration of technology has been a game-changer in modern English Language teaching. Digital tools, including online platforms, digital games, language learning apps, and virtual classrooms, provide unprecedented opportunities for personalized and flexible learning. Tools such as Duolingo, Quizlet, and Zoom enable learners to practice at their own pace, access diverse resources, and interact with peers and instructors globally (Godwin-Jones, 2018). Future-ready literacy now includes interactive communication skills, critical thinking skills, multimodal literacy and digital literacy. One of such technologically driven learning approaches in teaching English Language is the use of digital games. Digital games offer an innovative bridge between traditional literacy and future-ready learning. They combine narrative, interactivity, feedback, and motivation, key elements that support effective language acquisition (Reinhardt, 2019). As technology is advancing, the definition of digital games has expanded beyond traditional electronic games to include emerging technologies that enhance digital audio and video experiences (Pinheiro, Oliveira, & Alturas, 2022). Digital games utilize computer technology to deliver interactive and immersive experiences, supporting online multiplayer gaming, web browsing, and digital game distribution without the need for physical media (Pinheiro et al., 2022).

Concept of Digital Games in Language Learning

Digital games are interactive tools that engage users via platforms such as computers, consoles, and mobile devices, offering experiences from simple puzzles to

immersive environments (Folahan and Omotunde, 2024). According to the authors, educational games such as Classcraft gamify integrate content within the confines of the classroom while serious games serve specific purposes, such as training or simulation (Folahan and Omotunde, 2024). Games like Minecraft, Duolingo, and Kahoot have been successful in teaching English by aligning gameplay with language objectives (Wang & Tahir, 2020). Huotari & Hamari (2017) define it as the integration of game design elements into non-game settings to enhance motivation and psychological engagement. These games incorporate mechanics such as points, levels, challenges and rewards to facilitate learning. In English Language teaching, digital games support: reading comprehension, vocabulary acquisition, grammar practice, speaking and listening skills. Digital games are one of the most underutilized yet powerful tools in language education. Their value lies not only in entertainment but in their pedagogical structure.

Reinhardt (2019) noted that games provide meaningful contexts for language use, making learning both engaging and purposeful. It refers to the use of digital games to achieve educational outcomes. For the teaching and learning of the English language, the incorporation of digital games provides immersive environments where students can practice reading, writing, speaking, and listening skills (Reinhardt & Thorne, 2016). The integration of such tools in teaching English language offers learners opportunities to apply language in authentic, interactive scenarios, making knowledge construction more relevant and effective (Boyle et al., 2015). In education, digital games like "Minecraft Education Edition" or "Duolingo" are designed to align with learning objectives. Games provide immediate feedback and encourage active participation, which enhances cognitive skills (Folahan & Omotunde, 2024).

In language learning, digital games improve vocabulary and communication skills by immersing students in authentic, interactive environments (Loewen et al., 2020). In understanding the concept of digital games and language learning, the constructivist theory is used. The constructivist theory of learning underscores the active role of learners in constructing knowledge through engagement and social interaction (Vygotsky, 1978). Learners can build understanding through experience, not listening to lectures. The theory assumes that knowledge is tied to real context; that means, learners learn language in use, not in isolation. Digital games align with this theory by creating an interactive environment that promotes experiential learning, critical thinking and problem-solving skills. Games also scaffold learning by gradually increasing difficulty, similar to Vygotsky's ZPD. Moreover, digital games are highly motivating, capturing students' interest and promoting sustained engagement, which is a key aspect of constructivist learning. Digital games give instant feedback and create a safe failure zone where learners will struggle to score a point and not give up, even when they fail. The constructivist theory supports the use of digital games in fostering active, socially enriched, and contextually meaningful language learning experiences for secondary school students in Nigeria.

Impact of digital games in the Nigerian English Language classrooms.

Digital games are one of the most underutilized yet powerful tools in language education in Nigeria. Their value lies not only in entertainment but in their pedagogical structure. Research indicates that digital games make learning more engaging and effective by providing interactive, problem-solving experiences that enhance critical thinking and retention (An & Cao, 2017). By providing engagement and motivation to learners, digital games naturally motivate learners through rewards, collaboration and immediate feedback. Unlike traditional drills, games make learning feel purposeful and

enjoyable. Traditional instruction often posits students as passive recipients of knowledge. Digital games reverse this by making learners active participants who make decisions, learn through experience and solve problems.

In Nigeria classroom, digital games offer potential benefits such as increasing motivation, making lessons interactive, supporting differentiated learning, promoting collaboration, promoting critical thinking and reducing learning anxiety. In English Language learning, reading comprehension improves when students engage with texts meaningfully. Digital games significantly increase behavioral and emotional engagement by making learning enjoyable and interactive. Hamari, Shernoff, Rowe, Collier, Asbell-Clarke and Edwards (2016) found that gamified environments improve persistence and motivation in learning tasks. Comprehension is enhanced through interactive texts, story-based missions, and contextual vocabulary exposure. Learners engage with reading materials as active participants rather than passive readers. In addition, repeated exposure to vocabulary within game contexts improves retention and recall. Meaningful repetition embedded in gameplay strengthens long-term memory (Reinhardt, 2019). Multiplayer and role-based games encourage collaboration, dialogue, and communicative competence, aligning with communicative language teaching principles

Smart Classrooms as Enablers of Game-Based Learning

With the advance of educational technology, the research and practice of smart classrooms became popular since 2012 (Yang, Pan, Zhou & Huang, 2018), which utilized digital technology to support flexible pedagogies, including Game-Based Learning. A smart classroom is a technology-enabled learning environment that integrates hardware, software and pedagogy to make teaching interactive, personalized and data-informed. It moves beyond chalk-and-talk to blend audio, video, animations, Artificial Intelligence (AI) and cloud tools so that students actively construct knowledge rather than passively receive it. A smart classroom is defined as an educational ecosystem that integrates advanced technology to enhance the teaching and learning experience, thereby making learning more immersive, engaging and effective (Extramarks, 2024).

Smart classrooms provide the infrastructure needed for digital game integration. These environments typically include: internet connectivity, tablets or computers, interactive whiteboards and digital learning platforms. In such environments, digital games become powerful instructional tools rather than external distractions. In all observations, smart classrooms represent the natural evolution of education systems that aim to remain relevant in the digital age. According to Liuxia et al. (2021), smart classrooms have high-speed Internet access, equipped with relatively complete network communication facilities, including wired communication devices, wireless communication devices, a stable and efficient server and controller. Digital games and interactive platforms within smart classrooms facilitate this construction by providing immediate feedback, situating contexts and learner autonomy (Gee, 2019). In a smart classroom, with Game-Based Learning, students could engage in learning by using quality game resources via digital or VR devices with broadband Internet access, hence enhancing the digital GBL experience. The physical environment of smart classrooms includes convenient learning facilities, high-speed Internet access, comfortable surroundings, flexible space layout, etc. (Paternò & Wulf, 2017). Convenient learning facilities include various types of learning terminals, display terminals, and real recording terminals, which can effectively support the presentation and sharing of learning content and learning results, and support the communication and interaction between teachers and learners. This can ensure a fluent game process and communication, allowing learners to have a

good gaming experience. In Nigeria, smart classroom applications of digital games can be used to teach reading comprehension, vocabulary, storytelling, and role-play simulations. Reading comprehension games could take the format of reading a short passage, answering questions via Kahoot or Quizizz and providing immediate feedback. In teaching vocabulary, students can be engaged with puzzle tasks and word-matching games. This encourages a healthy, competitive and group-based learning. In teaching storytelling, students can choose story endings and infer meaning from content. Role-play simulations that teach about particular things can be incorporated. Through games, students act out dialogues. This improves speaking confidence.

Challenges of Integration

Despite the advantages, smart classrooms face implementation barriers, especially in developing contexts such as Nigeria. Several challenges limit the use of digital games in English Language classrooms. These include:

1. **Infrastructure Constraints:** Limited access to electricity, internet, and digital devices remains a major barrier in many educational contexts.
2. **Teacher Competency:** Effective integration requires teachers to possess digital pedagogical skills, which are often lacking.
3. **Curriculum Rigidity:** Examination-driven curricula often discourage innovative instructional approaches.
4. **Perception of Games:** Some educators still perceive games as entertainment rather than serious learning tools.
5. **Teacher Preparedness:** Some teachers are not trained to integrate games effectively into lesson plans.
6. **Lack of integration between gaming and teaching:** There is a poor balance between the enjoyment effect and the education effect. Games are either too attractive but failing to reflect studying goals, or they can be too educational but failing to trigger interests among learners.
7. **Large class size:** overcrowded classrooms make individual digital engagement difficult.

A Balanced Integration Approach

Digital games address key Nigerian classroom challenges which can hinder communication, students' interest and engagement. The transition from traditional literacy to future-ready learning necessitates the intentional integration of digital games within smart classrooms. Such integration is not a departure from literacy goals but an evolution of them, positioning teachers as mediators who align gameplay with curriculum objectives, foster critical reflection and cultivate digital fluency, collaboration and adaptive problem-solving as core literacy outcomes for the 21st century. Nigerian English Language education must embrace digital game-based learning as a strategic necessity, not a luxury. An advocacy for a balanced and blended pedagogy is strongly recommended, where

1. **Traditional literacy**, which includes reading, writing, grammar and lexis, taught through textbooks and drills, built foundational decoding and comprehension skills. Traditional literacy approaches such as direct instruction, guided reading, shared writing, storytelling, and grammar practice have historically been effective in building comprehension, vocabulary, phonemic awareness, and critical and creative skills. However, they often struggle to maintain learner engagement in today's digital culture. Neither traditional literacy nor digital games alone is sufficient. Therefore, a blended

approach which leverages the strengths of both is encouraged. The integration of digital game-based literacy with traditional literacy instruction creates a dynamic, engaging, and effective pathway for developing essential literacy skills. By combining structure with interactivity and guidance with exploration, educators can foster learners who are not only literate but also motivated, critical, and prepared for the demands of a digital world.

2. Digital games enhance engagement and application. This is because digital games are powerful and move learners from passive learning to active participation to real-life application. They do this through psychological, cognitive, and pedagogical mechanisms. They give learners clear goals and missions which create purpose, provide immediate feedback which propels students to be persistent in learning and practice more without feeling forced. In addition, digital games develop students' communication skills, collaborative learning and peer feedback.
3. Teachers guide structured learning experiences: in a blended literacy pedagogy, digital games do not replace the teacher; rather, the teacher becomes the designer, facilitator, and scaffold provider who ensures that gameplay leads to real learning. Structured learning occurs when games are intentionally integrated into lesson cycles, aligned with curriculum objectives, which ensures that games serve as instructional tools, not distractions, and are supported by guided instruction. Through this guided approach, digital games become powerful tools for building meaningful and measurable literacy learning. This balance ensures that education remains structured while becoming more interactive and future-oriented. This paper proposes a simple model. Digital Game-Based Learning Cycle, which includes: introduction of learning objectives- game-based activity- student interaction and participation- feedback and reflection- assessment and reinforcement. This cycle ensures structured integration of games into lesson delivery.

Conclusion

The shift from traditional literacy to future-ready learning is not optional. It is inevitable. Digital games represent a practical and effective bridge between students' digital realities and classroom instruction. They transform traditional literacy into future-ready learning by enhancing engagement, comprehension, and motivation. In contexts such as Nigeria, where educational challenges persist, digital games offer a practical and innovative pathway for improving English Language outcomes. English Language education must evolve to reflect how students learn, communicate, and interact in the modern world. When integrated thoughtfully into smart classrooms, digital games can redefine what it means to teach and learn English. Their success depends on systemic investment in infrastructure, teacher training, and curriculum reform. Digital games should therefore be viewed not as supplementary tools but as central components of modern English Language pedagogy.

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