

Innovative Pedagogy and Technology for Driving Language Education and Sustainable Development in Nigeria

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Abstract

Innovative pedagogies and technology are critical drivers for enhancing language education and promoting sustainable development. Pedagogy plays an important role in preparing learners to acquire knowledge of the subject-matter presented to them during the teaching and learning process. This paper talks on the importance of the learner-centered approach which enhances language acquisition by promoting learners' participation, critical thinking, creativity, communication and problem-solving skills. Furthermore, this paper discusses the need for the adaption of new pedagogies such as, Project-Based Learning (PBL), Task-Based Learning and Gamification Language Learning Approach which are flexible and engaging for learners across diverse linguistic and socio-economic backgrounds. Complementing this, the paper emphasises on the integration of technologies in the teaching and learning of language. Effective use of technology can bridge the gaps in accessing quality language education. Also, this paper delves into the need for the integration of Artificial Intelligence (AI) into the field of language teaching and learning. This paper concludes by emphasising the need for the government to provide digital infrastructure in schools and see to the needs of learners in this technological driven era. By doing so, our educational system can unlock the transformative potential of language education; fostering social inclusion, and sustainable development. Some recommendations were proffered for effective integration of innovative pedagogies and technology in language classroom. This includes training of teachers on how to integrate new strategies in their language lessons and, on how to use technology to evaluate learners both in and outside the language classrooms. More so, the word 'language' is used in this paper to refer to the teaching and learning of English language in schools.

Keywords: Innovation, Pedagogy, Technology, Language Education, Sustainability

Introduction

The process of teaching and learning a language could be complex and multifaceted approach. Contemporary pedagogical strategies in teaching have recently emphasised on the learner-centered approach; where learners are fully engaged in diverse language activities and authentic use of the language. Khoury (2022) opines that learner-centered approach has a positive impact on learners' motivation, active engagement and improves learning outcomes. Nurassyl *et al.* (2023) further states that the learner-centered approach places the needs and interest of the learners at the center of learning which promotes learners' engagement, collaboration and autonomy. It is essential to upgrade teaching and learning methods in order to meet up with the trends

of change in education. A better understanding of innovative pedagogies is needed in order to address contemporary challenges in language learning and also, improve teachers' professional competence in the language teaching and learning process.

Innovation in education involves going beyond traditional pedagogies. There are different tools, techniques and resources which can help teachers build structured and interactive teaching plans that cater for the needs of different learners in the classroom. Likewise, understanding how and when innovative pedagogies work requires critical reflections on the purpose and the potentials of adaptive teaching. In this digital age, giving learners the opportunity to learn both in class and out of the classroom prepares them for global competitive workforce of the 21st century. The process of language teaching and learning through interaction between teacher and learners, and between learners can potentially help the learners to retain more information and process it at a deeper level. In addition to pedagogical training, it is important that teachers have opportunity to be trained on the use of educational technology as the demand for online courses has grown. Fasae *et al.* (2023) notes the dearth of digital literacy skills among language teachers in order to enhance both the teachers and learners' language teaching and learning as well as the learners' performance. Therefore, the adaption of technology is one of the most needed ways of enhancing learners' understanding when it comes to the implementation of active language learning. Thus, innovation pedagogies that are based on technology is necessary in driving the affairs of learning. Also, it is a valuable educational tool which can immerse learners into engaging real-world scenarios. Furthermore, technology enhances learners' development in problem-solving abilities which in turn guides the learners to understand and to face challenges; thereby breaking ineffectual social constructs and contribute generally towards a sustainable future. For sustainable future, Khirjah *et al.* (2024) emphasises on the need in integrating the Sustainable Development Goals into language teaching. Conversely, it is inherent to note that language materials presented to learners are designed to ensure that learners can comprehend and process language appropriately wherever they find themselves.

The Need for Innovative Pedagogy in Language Education

According to Lukin *et al.* (2016) conventional educational systems involve well-defined syllabi, instructor-based learning and actual classroom. These are the basic constituents of traditional learning environments, which is prevalent over the years. The main goal of the conventional system of education is to ensure that all learners undergo the same learning experience and cover all necessary topics. The standardisation is important in ensuring that there is equity in education with clear expectations. Holmes (2016) and Holmes *et al.* (2019) explain that the conventional methods can also be teacher oriented with fewer activities that allow learners to learn independently, and this may negatively affect the learners' critical thinking and problem-solving skills. Therefore, learning can be effective and efficient if teachers of English language acknowledge the impact of innovative strategies in education.

Hence, teachers of English language are expected to be exposed to the diverse learning needs of learners in this technology-driven world.

Innovative Pedagogies and in-class Language Learning Experience

With the emergence of new pedagogical approaches to learning in general and concerning language learning in particular, applied linguistics is finding a new direction towards the teaching of language. Alemi *et al.* (2010) state that dynamic view towards the nature of language turned scholars from static view to competence towards more interactive and dynamic views. So, a technological language classroom context that promotes self-initiation and many language activities and clear instruction is the key to effective language teaching and learning. Hence, innovative pedagogies can be a powerful tool for improving learners' outcomes in language education. Some research on the role of technology in language teaching and learning in real-time classroom interactions found that learners can practice interpersonal skills by interacting with other speakers of the target language in real-time via video, audio or text.

Furthermore, learners' ability to access online resources from any device, and from anywhere enhances flexible learning which reduces overcrowded classroom and overburden teachers. Learners learn differently; some, for instance, respond better to visual stimuli, while others understand by absorbing information from text source. Online platform can adapt to individual child's learning style. Through the cloud, teachers can create tailored- made language resources for learners from multimedia. Likewise, stimulated language teaching environment can draw learners into the heart of a subject allowing them to feel connected with the topic they are exploring.

It is pertinent to note that a technological language classroom cannot be effective without a technological-based teacher. Muhonen (2023) conducted a study on the relationship between teachers' pedagogical and ICT training and approaches to online teaching and the use of digital tools. The findings revealed that pedagogical training enhanced teachers learning-focused approach to online teaching and diverse use of digital tools. He further stressed that building an online teaching in which digital tools are used to promote interaction in online environment enhances learners' understanding. Teachers, therefore, need to be able to implement versatile pedagogical practices and incorporate digital tools, applications and materials into the language classroom to support learners in achieving the desired teaching outcomes.

The Project-Based Learning Approach and Language Education

The Project-Based Learning (PBL) is an approach that aims to enable learners to solve problems based on real-life scenarios; either individually or in pairs. Learning takes place through completing a project. For instance, the language teacher can create learning activities where learners use online searching or recording tools to document their writing, example a descriptive essay topic assigned to them to write

on. The aim of using such an approach is to enhance active learning in language classroom as well as to foster learners' critical analysis and higher-order thinking skills; especially in composition writing. In a study, Xiaohu et al. (2023) explore the impact of project-based language teaching on developing high school students' competence and the factors influencing the effects of project-based teaching on improving the students' competences in English as a foreign language. The results showed improvement on the students' use of the English language. More so, assignments given to learners using the PBL approach consists of multi-step problems that challenge their level of understanding and, enhance their interpersonal skills; helping them solve real-world problems. Learners' use of critical analysis, logical deductions and interactive techniques inspires teamwork, collaboration and peer learning; thereby transforming the learners' understanding through activity-based instruction in the language learning classroom.

Task-Based Language Teaching Approach

Similarly, Task-Based Language Learning is another pedagogical approach that bridges the gap between what learners learn in the language classroom and the practical usage of the language they learned outside the classroom. It is a pedagogical approach that emphasizes the importance of performance of meaning-oriented tasks in facilitating second language learning (Teng *et al.*, 2024). The approach focuses on the completion of language task that centers on real-life language use where learners are encouraged to engage in real world problem-solving activities. According to Lu (2023), effective task-based learning approach involves designing, progressing and sequencing of tasks to foster language acquisition. Assigning task to learners is usually from a simple task to a more complex task. For instance, a task can focus on vocabulary acquisition, followed by sentence construction then paragraph writing. By using this gradual approach, the learners' linguistic knowledge and understanding is expanded, hence building their confidence in learning the language. Another task could be learners going to interview people of various profession in order to gain experience through question format and active listening. This in turn enhances their language production. More so, assigning a topic to learners to complete outside the school helps learners to develop self-awareness, self-management, social awareness, social skills, self-confidence and decision making. Furthermore, the sequencing of the tasks enables the teacher to provide adequate support to learners at each stage of the learning; thereby helping learners to build their language use, as each task builds on the previous ones leading to a coherent and comprehensive language learning process.

Gamification and Language Education

Game-based teaching is another approach that accelerates the participation and engagement of learners in language teaching classroom where points, rewards and progress tracking are used to motivate the learners. Interactive exercises such as, pronunciation practice, vocabulary matching and sentence building can be used in a

gamified learning environment. For instance, learners can use speech recognition features to practice saying different types of sentences; for example, ‘‘I need a glass of water’’ and the like. Also, in composition writing classroom, topics on different professions can be written on papers and squeezed for learners to pick and speak or act. This makes learning fun while encouraging competition and engagement (Chen *et al.*, 2023). Meanwhile, the language teacher can use storytelling games like ‘‘Twine’’ for creative writing tasks or host a ‘‘Kahoot’’ quiz to review grammar or vocabulary learned in previous lessons. The aim of this approach is to capture the learners’ interest, improve their concentration level and enrich their learning experiences. The approach, further aids the cognitive development of learners while simultaneously fostering learners’ creativity and problem-solving skills.

Apparently, teacher-learner and learner-learner interaction is crucial during the game. The interaction provides opportunities to learners to practice and develop their language skills anywhere and anytime. Lu (2023) states that when role-play is integrated in a lesson and learners are allowed to participate fully, the practice of peer collaboration and interaction is strengthened in language learning classroom; as it encourages the learners to engage in meaningful communication in a relaxed atmosphere. Kallunki, et al. (2023) opine that creating diverse interactive language learning environments that supports language learning requires pedagogical skills. Teachers with formal pedagogical training invest more in aligning the design and implementation of their teaching, and consider the impact of teaching methods on the learners learning. Thus, by working together on various group activities, learners are compelled to navigate through linguistic challenges, often leading to an enhanced understanding of the language structure and usage, and negotiation of meaning. This shared learning experience not only builds a supportive learning community but also elevates the confidence of the learners. Therefore, the reciprocal nature of peer interaction through games plays a consequential role in driving motivation, and ensuring that the process of mastering a new language is not a solitary endeavour but a collective effort.

It is pertinent to note that the three approaches discussed above are learner-centered approach. Assigning new concept and topic from the course to the learners to discover is prominent. Afterwards, classroom discussion ensues where learners share their discoveries, ideas, views and findings within the class; supported by the teacher. These approaches promote self-paced learning, customized learning experience, active and engaging learning experience that is contextually relevant, skill gap analysis and freedom to express creativity.

Harnessing the Power of Artificial Intelligence (AI) in Language Teaching and Learning

The integration of technology in language learning environment has opened up new avenues for enhancing learners’ engagement and more exposure to the language they

are learning (Kettunen et al., 2013). In today's language classroom, the need for innovative pedagogy in the teaching and learning of language is important. The application of Artificial Intelligent (AI) in education is set to change the way teaching and learning is carried out. Kallunki *et al.* (2023) opines that the application of Artificial Intelligent (AI) can improve teaching and learning in schools. Similarly, Goel et al. (2017) state that AI has the potential of changing the face of current learning models; especially in language classroom; thereby making learning efficient and inclusive.

One of the AI approaches suggested by Santos et al. (2019) is the identification of learners' need while learning the language. The development of AI- driven solutions transform the existing language learning approach to an effective approach that meets the needs of the learners during the teaching and learning process. For instance, AI can provide personalized learning experiences that adapt to the individual pace and style of each learner. While traditional education often struggles with a one-size fits approach, AI can tailor educational content, methods and interactive feedback to suit different learners thereby enhancing engagement and adequate learning outcomes. More so, AI empowered educational platforms can enhance language lesson by providing customized exercises on grammar, vocabulary and sounds and, immediate feedback to reinforce the teaching and learning of the language. Dogan et al. (2023) asserts that AI is used in many dimensions of our lives; including education. In addition, Tuomi (2018) states that AI has shown significant promise in providing timely intervention for children with special educational needs, enriching both their learning experiences and daily lives.

Moreover, having a customised AI Language Laboratory could be a supportive tool to help learners develop their language skills through interactive learning methods. A well-equipped AI language laboratory utilises digital tools, software and audio-visual materials to enhance language acquisition. Hwang et al. (2024) study on using advanced AI to enhance the English language learning through video drama revealed that AI enhanced video drama can improve English language teaching; especially learners' writing and speaking skills. Thereby emphasised that AI is effective in language teaching.

Assessment plays a vital role in every language learning. It serves as a bridge between learners' understanding and production of the language which gives the teacher an insight on the level of the learner's understanding and use of the language. Foltz (2014) states that assessment is carried out in order to understand the role of feedback; to drive improvements in language learning as well as to support the learning process. For instance, AI based assessment such as, customised tests and quizzes with clearly defined learning objectives could be so effective in measuring the learners' level of understanding in the English language classroom. Hence, integrating assessment with AI could assist learners to know their performance through immediate feedback, and

the aspects that require improvement in real-time; thus, enhancing learning and teaching.

The adaption and use of innovative pedagogies and technological approach in the teaching and learning of language depends on the support and training programmes given to language teachers. It is necessary that teachers of language at all levels of learning receive quality knowledge on AI applications. Conversely, the workload in the language curriculum can be mapped out and topics generated and taught through AI.

However, the aim of this paper is not to condemn or compete with the conventional approach to teaching language, rather emphasises the need to integrate innovative pedagogies and technology in the teaching and learning of language. The adoption of new approaches into language teaching and learning can augment the conventional approach which is in existence for long.

Language Education and Pedagogy Innovation for Sustainable Development

Education for sustainable development (ESD) integrates critical thinking, collaboration and transformative learning approaches into curricula. Language education as part of ESD can advocate for environmental stewardship through materials and curricula centered on climate change literacy, facilitate long life learning by making educational content accessible to learners of all ages; especially the vulnerable communities and, build resilience communities through communication skills that enables effective disaster preparedness and conflict resolution (Manyas, 2024).

Hence, language education and innovative pedagogy play a pivotal role in promoting sustainable development by fostering intercultural understanding and equitable access to education (Muneer *et al.*, 2022). These elements are interconnected and contribute to the broader goals of the societal transformation, economic progress and environmental sustainability. Language is the key driver for social cohesion, cross-cultural communication and economic participation. It enables individuals to access information and share knowledge. For a sustainable development, language fosters inclusion and equity; ensuring that marginalized groups like the girl child and the physically challenged have access to education. Furthermore, the integration of innovative teaching methods in language education enhances learners' engagement, effectiveness and adaptability to modern world's needs. Technology-enhanced learning use digital platforms and AI language tools and virtual classroom to create language experiences which enhance learners' exploration of the language. Akgun *et al.* (2022) explains that the use of Artificial Intelligence in education could help improve learners' digital skills and language use. This can also help learners to acquire skills for cross-cultural communication which is needed to develop sustainability (Yishu *et al.*, 2022). However, establishing benchmarks to measure the impact of language education on sustainable goals, including increased literacy rates

is necessary. Implementing such a practice ensures that learners are effectively equipped with linguistic proficiency.

Conclusion

In conclusion, the pedagogical approaches discussed in this paper emphasise the need for the adoption of new strategies in the teaching and learning of language in our schools. The digital transformation could mark a significant step towards quality language education; thereby demonstrating the power of technology in overcoming some of the challenges faced in language teaching and language context. Integrating these various teaching approaches can bridge gaps, personalised learning, and help in improving learning outcomes. Effective language learning is not about smarter classrooms, but learner-centered where learners explore the subject-matter and where interaction is prominent. This can enhance the development of learners' spoken and written language. Learners are motivated and encouraged to constantly develop different learning skills and build their engagement capacity; as much as they come in contact with the resources presented to them. This can be achieved through active language teaching and learning practices instead of just providing learners with auxiliary classroom resources.

Additionally, the use of technology in the language classroom; such as language-learning apps, interactive whiteboards, language laboratory and online resources introduce learners to a variety of spoken and written language inputs. The positive effect of pedagogical training on teachers' concepts, teaching practices, reflective skills and confidence can contribute immensely in building and shaping the language skills of learners. This can further reinforce the learners' understanding and retention which helps them to navigate multimodal landscape of real-world language use. More so, this view not only informs pedagogical decisions, but also gives room for continued innovation in language teaching practices, ensuring that learners are equipped to stand the demand, and the challenges they may face in real-world. The adoption of technology facilitates professional development for teachers; equipping them with digital literacy skills necessary for 21st century classrooms. Also, by integrating innovative pedagogical strategies in education, the goals of sustainable development become a transformative tool for empowering individuals and communities. Therefore, all educators concern should fuel innovation in language education; ensuring no learner is left behind.

Recommendations

1. To ensure that learners are comfortable and proficient with technological tools, there is need for comprehensive and technical training programmes.
2. To bridge the gap between pedagogy and sustainability requires teacher training and capacity building. Equipping teachers with skills to integrate

sustainability concepts and interactive methodologies into language teaching could transform the delivery of language teaching and learning.

3. Educational institutions and AI developers can jointly create tailored learning approaches and forms of evaluation.
4. Language teachers should extend their methods of content delivery which geared towards new trends in the teaching and learning of language.
5. Government, school administrators and policy makers should make language teaching and learning more effective for learners by providing the necessary innovative materials that will help schools to keep up-to-date with latest language teaching strategies.
6. There should be collaboration between educators and researchers to improve awareness on quality education in order to achieve the Sustainable Development Goals through language education.

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