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DESIGN AND DEVELOPMENT OF THE IGBO LANGUAGE LEARNING MULTIMEDIA PACKAGE (ILLMUPAC): CONCEPTUAL AND THEORETICAL FOUNDATIONS

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Abstract

This study focused on the design and development of an effective interactive multimedia courseware for teaching and learning of the Igbo language in Nigerian educational institutions. The courseware, titled *Igbo Language Learning Multimedia Package (ILLMUPac),* was developed by integrating *Keller's ARCS Model of Motivational Design* and the *ASSURE Instructional Design Mode*. The development process was structured into two major phases: the conceptual phase and the engineering phase. This paper presents the conceptual and theoretical foundations underpinning the design of the courseware. The conceptual phase comprised four interrelated components: the conceptual framework, theoretical framework, model framework, and the design and development processes. These components provided the pedagogical and technological foundations for the development of the multimedia package. By applying established instructional design theories and models to a real-life educational context, the study demonstrates how instructional multimedia can be effectively designed to enhance indigenous language learning. The resulting instructional design framework has the potential to serve as a prototype for future developers of instructional technologies, particularly those focusing on Nigerian indigenous languages. Based on the foregoing, recommendations and conclusion for the study were made.

Keywords: Interactive multimedia courseware, instructional design, indigenous language education, Igbo language, software development, educational technology.

Introduction

The Igbo language is predominantly spoken by the people of southeastern Nigeria and is estimated to have between 18 and 27 million native speakers worldwide (Grimes, 2000; Lewis, 2009). However, a substantial number of Igbo speakers reside outside their ancestral homeland due to migration and globalization. Prior to contact with Western civilization, Igbo language and

literature were largely preserved and transmitted through oral traditions, storytelling, folklore, songs, and other forms of verbal communication (Okudo, 2016). These indigenous mechanisms played a critical role in preserving the cultural heritage, values, and identity of the Igbo people across generations.

The rapid advancement of educational technologies has transformed teaching and learning processes across the globe, creating innovative opportunities for language education. As one of Nigeria's three major indigenous languages, the Igbo language should not be excluded from these emerging technological developments. Sustained efforts are therefore required to ensure that Igbo retains its status as a major Nigerian language while simultaneously enhancing its relevance, attractiveness, and usability in both local and global communication contexts. In support of this position, Ajepe and Ademowo (2016) pointed out that foreign language should remain a language for relating with the outside world, but given less importance in the day-to-day activity of the citizens. Also, that the continued dominance of European languages, reinforced by colonial legacies and globalization, poses a significant threat to the survival and development of Igbo and other indigenous Nigerian languages.

Nigeria is one of the most linguistically diverse countries in the world. Estimates of the number of indigenous languages spoken in the country vary considerably, ranging from approximately 397 languages (Crozier & Blench, 1992) to 527 languages (Lewis, 2009), while Ikegbunam (2009) reported a total of 525 languages. Among these, Igbo, Hausa, and Yoruba are recognized as the three major Nigerian languages, each with over 18 million speakers. The remaining languages are generally classified as minority languages. In addition to these indigenous languages, English serves as Nigeria's official language and occupies a dominant position in formal domains such as education, governance, commerce, media, and international communication (Oyelami, 2008).

The preferential use of English over indigenous languages has conferred greater prestige and socioeconomic value on the English language. This situation has largely been influenced by political, educational, and economic considerations. Nevertheless, promoting the learning and use of the Igbo language remains imperative. Increased proficiency in Igbo can facilitate language maintenance, cultural preservation, and identity formation among native speakers while also providing opportunities for language immersion and intercultural exchange among non-native learners, both within Nigeria and in the global diaspora. Recognizing the strategic importance of language in nation-building, the National Policy on Education (Federal Republic of Nigeria [FRN, 2013) emphasizes language as a vital instrument for promoting social interaction, national cohesion, and cultural preservation. Consequently, the Igbo language occupies an important place within Nigeria's educational system and is taught at the primary, secondary, and tertiary levels of education (FRN, 1998, 2004, 2013).

Despite the National Language Policy on Nigerian Indigenous Languages provisions and educational initiatives, significant challenges continue to hinder the effective teaching and learning of the Igbo language. Although Igbo is studied in schools and higher institutions both within and outside Nigeria, concerns persist regarding its declining popularity and limited

development as a language of modern education. Previous studies have identified inadequate human and material resources, c oupled with widespread apathy among some Igbo speakers toward their language, as major factors contributing to this situation (Okudo, 2013; Okudo, 2017).Thus, Sustained efforts are therefore required to ensure that Igbo retains its status as a major Nigerian language while simultaneously enhancing its relevance, attractiveness, and usability in both local and global communication contexts.

Furthermore, (Okudo, 2013; Okudo, op. cit) carried out researches and provided empirical evidence that the teaching and learning of Igbo at the junior secondary school level in Lagos State, Nigeria is constrained by several instructional and environmental factors. The studies revealed that the predominant use of conventional teacher-centred methods resulted in minimal learner participation, reduced classroom interaction, and limited opportunities for students to develop communicative competence in Igbo. The findings further showed that many schools lacked adequate instructional materials and language laboratory facilities, while learners exhibited poor vocabulary development, weak oral proficiency, and low levels of motivation toward studying the language. Consequently, students recorded poor academic performance in classroom assessments and external examinations.

The studies therefore concluded that the persistent poor achievement of students in Igbo language is largely attributable to ineffective pedagogical practices, inadequate instructional resources, and insufficient learner engagement. The studies recommended the adoption of learner-centred and technology-enhanced instructional strategies capable of promoting active participation, increasing motivation, and improving students' academic achievement in the Igbo language.

Given these challenges, there is a pressing need to explore innovative pedagogical approaches capable of enhancing students' engagement, motivation, and achievement in Igbo language learning. One promising approach is the integration of multimedia technologies into language instruction. Interactive multimedia learning environments have the potential to transform conventional classroom practices by incorporating text, audio, graphics, animation, and video into a learner-centred instructional framework. Such environments can provide clear instructional guidance, promote active participation, facilitate knowledge construction, and improve learning outcomes.

Although several online platforms and websites have been developed to support the learning and promotion of the Igbo language, including LearnIgboNow, Young Igbos, Igbo language discussion groups, and Microsoft's indigenous language initiatives, these resources are generally not aligned with the instructional objectives and content requirements of the Junior Secondary School Igbo Language Curriculum. Consequently, there remains a significant gap in the availability of curriculum-based multimedia instructional resources specifically designed for formal classroom instruction.

Against this backdrop, the present study seeks to develop an interactive multimedia courseware for Igbo language instruction through a conceptual and empirical-based design process. Specifically, the study aims to design and develop an effective multimedia instructional

package that can serve as an innovative alternative to the traditional teacher-centred instructional paradigm commonly employed in Nigerian secondary schools. The courseware is intended to enhance learner motivation, improve academic achievement, and promote meaningful engagement with Igbo language content.

The outcomes of this study are expected to provide a methodological framework for future research and development in indigenous language multimedia courseware design. Furthermore, the instructional design model developed through this research may serve as a prototype for the teaching and learning of other Nigerian indigenous languages. By providing a theoretically grounded, learner-centred, and empirically validated multimedia instructional package, the study has the potential to contribute significantly to addressing the shortage of qualified Igbo language teachers while improving the quality and accessibility of indigenous language education in Nigeria.

The Conceptual Approach

The present study adopted a conceptual framework derived from two widely recognized instructional design models: *Keller's ARCS Model of Motivational Design (Keller, 1988) and the ASSURE Model of Instructional Design (*Heinich, Molenda, Russell, & Smaldino, 1999). The integration of these models provided both the motivational and pedagogical foundations for the design and development of the Igbo Language Learning Multimedia Package (ILLMUPac).

Keller's ARCS Model and Interactive Multimedia Instruction

The ARCS Model of Motivational Design offers a systematic framework for enhancing learner motivation and engagement throughout the instructional process. Since motivation is a critical determinant of successful learning outcomes, the model emphasizes maintaining learners' interest and active participation during instruction. Effective learning is unlikely to occur when learners are distracted, disengaged, or unable to sustain attention on instructional tasks. Consequently, the design of the multimedia courseware incorporated the four major components of the ARCS model:

Attention: The instructional materials were designed to capture and sustain learners' attention through the use of stimulating multimedia elements.

Relevance: To enhance the meaningfulness of learning, instructional content was carefully aligned with learners' experiences, needs, and educational objectives.

Confidence: The courseware was designed to build learners' confidence by providing clear expectations, structured learning pathways, and opportunities for successful task completion. Continuous feedback mechanisms were incorporated to monitor learners' progress, reinforce achievement, and encourage persistence in learning activities.

Satisfaction: Learner satisfaction was promoted through the provision of positive reinforcement, immediate feedback, and rewarding learning experiences thereby strengthening their motivation for continued engagement with the Igbo language.

Application of the ASSURE Instructional Design Model in the Development of the Igbo Language Learning Multimedia Package (ILLMUPac)

The ASSURE model is a classroom-oriented instructional design framework comprising six systematic stages of instructional design intervention. Application of the ASSURE Model in Courseware Development was incorporated during the development of ILLMUPac followed established procedures for creating, integrating, and implementing digital instructional materials within educational settings. Specifically, the six stages of the ASSURE instructional design model as proposed by Heinich, Molenda, Russell, and Smaldino (1999) were adopted throughout the design and development process.

The ASSURE model was particularly suitable for this study because of its emphasis on the systematic integration of media and technology into classroom instruction. The model focuses on selecting and utilizing instructional media in ways that maximize the achievement of intended learning outcomes. Furthermore, the ASSURE framework has gained widespread acceptance in educational technology literature as an effective model for implementing technology-enhanced instruction (Al Musawi, 2011; Faryadi, 2012; Heinich & Smaldino, 2002; KENPRO, 2010; Shelly, Cashman, Gunter, & Gunter, 2006).

The acronym ASSURE represents: Analyze Learners, State Objectives, Select Methods, Media and Materials, Utilize Media and Materials, Require Learner Participation, and Evaluate and Revise. The model provides a structured approach for planning, implementing, and evaluating technology-enhanced instruction.

Analyze Learners: The first stage of the ASSURE model involves a comprehensive analysis of the target learners. This includes identifying learners' age, prior knowledge, abilities, learning characteristics, and language competencies. In the present study, the target population consisted primarily of Junior Secondary School students of Igbo parentage. Most of the learners had previously studied the Igbo language for at least one academic year and possessed varying degrees of foundational knowledge and communicative competence in the language. Understanding these learner characteristics was essential for designing instructional materials that were developmentally appropriate and responsive to learners' needs.

State Objectives: The second stage focuses on the formulation of clear and measurable instructional objectives. The objectives adopted for this multimedia courseware were derived from the approved *Unified Scheme of Work developed in line with the New Nine-Year Basic Education Curriculum* of the Nigerian Educational Research and Development Council (NERDC). The objectives emphasized the acquisition of linguistic knowledge and communicative skills in the Igbo language.

Specifically, students were expected to: Listen to and comprehend different educated varieties of spoken Igbo presented at a natural rate of speech; Communicate effectively in spoken Igbo and be readily understood by other speakers of the language; Read non-technical texts in Igbo with reasonable fluency and comprehension; and Express themselves effectively in written Igbo using appropriate conventions of spelling, punctuation, and grammar. These objectives

served as the foundation for content development, instructional activities, and assessment procedures incorporated into the multimedia package.

Select Methods, Media, and Materials: At this stage, appropriate instructional strategies, media resources, and learning materials were selected to facilitate effective learning. The multimedia courseware utilized a combination of instructional elements, including text, graphics, images, audio narration, animation, and interactive activities.

Utilize Media and Materials: The utilization stage involved the systematic presentation and integration of instructional content through multimedia formats.

Require Learner Participation: Active learner participation constituted a central component of the instructional design. Various interactive activities were incorporated to assess learners' understanding and academic achievement. Learners were required to select learning activities from the available instructional modules, study the content, complete assigned tasks, and respond to assessment exercises. The design allowed learners to progress through the modules at their own pace, revisit previous lessons, or proceed to subsequent learning activities based on their performance and learning needs.

Evaluate and Revise: Evaluation and revision formed an integral and continuous component of the instructional process. Learners' performance was assessed at various stages of the programme through embedded exercises and assessment activities. Feedback obtained from these evaluations provided valuable information for improving instructional effectiveness and refining the courseware. Consequently, evaluation was not viewed as a terminal activity but rather as a cyclical process that informed ongoing revision and enhancement of the instructional package.

The ASSURE model is particularly for classroom instruction and supports systematic instructional planning and ensures alignment among learner characteristics, instructional objectives, learning activities, and assessment procedures. Its applicability to the present study stems from the nature of language learning itself. The learning of the Igbo language typically begins with the linguistic competencies learners already possess and progressively develops additional communicative skills required for effective participation within their communities. Consequently, the pedagogical processes embedded in the courseware incorporated appropriate teaching methods, strategies, and learner interactions designed to foster meaningful language acquisition. The expected outcomes extended beyond academic achievement to include cultural appreciation, community participation, and national development through the preservation and promotion of indigenous language heritage.

Structure and Content of the Igbo Language Learning Multimedia Package (ILLMUPac)

The instructional content of ILLMUPac was organized into five modules, each addressing specific aspects of the Junior Secondary School II Igbo Language Curriculum:

Introduction Module: An orientation section designed to familiarize learners with the programme structure, navigation procedures, and learning objectives.

Module 1 Family – Types, Members, and Functions: This module introduces learners to family structures, family relationships, and the roles and responsibilities of family members within the Igbo cultural context.
Module 2 Reading Time in Igbo: This module focuses on the expression of time-related concepts in Igbo, including seasons, months, days of the week, and time-telling conventions.
Module 3 Numbering System: Learners are introduced to the Igbo numbering system and its practical applications in everyday communication.
Module 4 Types of Animals: This module presents different categories of animals, distinguishing between wild and domesticated species using visual illustrations and audio descriptions.
Module 5 Parts of the Human Body: The module teaches the vocabulary and identification of various parts of the human body through interactive multimedia presentations.

Multimedia Features of the Courseware

The courseware integrates diverse multimedia elements, including illustrations, photographs, audio narration, text, animation, and interactive exercises, to facilitate the acquisition of Igbo language skills. These multimedia components were synchronized within a structured instructional environment to create meaningful and engaging learning experiences.

The package employs a narrative-based instructional approach in which textual information, graphics, audio recordings, and other learning objects are integrated and sequenced within the software timeline. The courseware provides rich visual representations and interactive multimedia features that engage multiple sensory channels, particularly sight and hearing. Furthermore, the design supports non-linear navigation, enabling learners to move freely among modules, lessons, activities, and assessment components according to their individual learning preferences and needs.

Production and Development of ILLMUPac

The production process involved collaboration with specialists in Educational Technology and professionals from the Federal Radio Corporation of Nigeria (FRCN). Prior to recording, the instructional scripts and lesson plans were thoroughly rehearsed to ensure clarity, accuracy, and effective presentation.

The instructional scripts and lesson plans incorporated into the multimedia package were developed by the researcher using topics selected from the approved JSS II Igbo Language Unified Scheme of Work for Lagos State. To ensure content validity and linguistic accuracy, the instructional materials were reviewed and edited by an expert in Igbo language education.
The voice narration for the multimedia package was provided by the researcher, who possessed extensive professional experience as a broadcaster, producer, and presenter in the Igbo Service Unit of Bond 92.9 FM, Federal Radio Corporation of Nigeria, Ikoyi, Lagos. This expertise contributed significantly to the quality and authenticity of the audio components incorporated into the courseware. The completed multimedia package was organized into five instructional

modules featuring synchronized text, audio narration, motion graphics, visual illustrations, and interactive learning activities. The multimedia design was intended to stimulate learners' visual and auditory senses, thereby enhancing comprehension, retention, and overall learning effectiveness.

Description of the Application Modules

Login Module: The Login Module serves as the entry point into the system. Upon launching the application, learners are required to enter a username provided prior to the commencement of instruction. This process authenticates users and grants access to the learning environment.

Activity Selection Module: Following successful login, learners proceed to the Activity Selection Module, where they choose the instructional activity or topic they wish to study. This module provides access to all available learning units within the programme.

Learning Activity Modules: These modules contain the instructional content associated with each selected topic. Learning activities were developed from prescribed topics in the JSS II Igbo Language Unified Scheme of Work for Lagos State.

To begin a lesson, learners select a topic and activate the audio narration by clicking the sound icon. The instructional content is then presented through synchronized multimedia elements.

Test Module: The Test Module assesses learners' understanding and mastery of the content presented in each instructional unit. Learners' complete assessment tasks designed to evaluate the achievement of specified learning objectives.

Correction and Feedback Module: The Correction and Feedback Module provide learners with immediate feedback on their responses. It allows users to review correct answers, identify areas requiring improvement, repeat assessment tasks where necessary, or proceed to subsequent learning activities.This feature promotes self-assessment, reinforces learning, and supports continuous improvement in language proficiency.

Conclusion

The Igbo language remains one of Nigeria's major indigenous languages and an important medium for preserving the cultural heritage, identity, and values of the Igbo people. However, despite its official recognition in the National Policy on Education and its inclusion in the school curriculum, the language continues to face numerous challenges arising from globalization, the dominance of English, inadequate instructional resources, and the persistent use of traditional teacher-centered instructional methods. These factors have contributed to declining learner interest, poor communicative competence, low motivation, and unsatisfactory academic performance among students studying Igbo, particularly at the junior secondary school level.

Consequently, there is a compelling need to integrate learner-centred and technology-driven instructional strategies into Igbo language education. The development of an interactive multimedia courseware offers a practical and innovative solution for improving classroom

instruction by promoting active learning, increasing learner motivation, enhancing language proficiency, and improving academic achievement. Furthermore, the instructional design framework developed in this study provides a valuable model for the development of multimedia instructional packages for other Nigerian indigenous languages, thereby contributing to the preservation, revitalization, and sustainable development of indigenous language education in Nigeria.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Igbo language teachers should adopt learner-centred and multimedia-based instructional strategies that actively engage students and promote meaningful language learning rather than relying solely on conventional lecture methods.
2. Curriculum developers should integrate curriculum-based multimedia instructional resources into the Junior Secondary School Igbo Language Curriculum to enhance teaching effectiveness and improve students' learning outcomes.
3. Teacher education institutions should incorporate training in multimedia instructional design and educational technology into pre-service and in-service teacher development programmes to improve teachers' digital pedagogical competencies.
4. Software developers, linguists, and instructional designers should collaborate in developing curriculum-aligned interactive multimedia courseware, mobile applications, and digital learning resources for the teaching of Igbo and other Nigerian indigenous languages.

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