

Leveraging Broadcast Media as Effective E-learning Tools for Enhanced Instructional Delivery in Nigerian Primary Education

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Abstract: With the increasing demand for effective and easily accessible teaching particularly in developing countries like Nigeria, broadcast media have become important e-learning tools in primary education. This paper is on the use of broadcast media such as radio and television as a dependable tool for enhancing teaching in Nigerian primary schools. We discuss the concepts of e-learning, the development of ICTs, educational broadcasting and the use of radio and television for formal, non-formal and informal learning. The study indicates the potential of broadcast media to reach students in remote areas, to extend educational opportunities, to provide access to good quality teaching resources and to make teachers more effective. It then describes the advantages of educational radio and television, such as better visualization of concepts, increased diffusion of knowledge, student engagement, and support for remote learning. However, poor infrastructure, inadequate finance, low electrical supply, lack of digital literacy among educators and lax regulations on ICT integration hinder the effective implementation. The study suggests that broadcast media, especially at the elementary level, should complement, not replace, classroom teaching. It also encourages curriculum adaptation, investment in educational broadcasting infrastructure, teacher capacity building and improved technology support systems to scale up e-learning delivery and promote equitable access to quality education in Nigeria.

Keywords: Broadcast media, E-learning, Educational Technology, Instructional Delivery, Primary Education.

Introduction

Generally, education is the process of transmitting cultural traditions, information and skills from generation to generation through instruction, training or study (Agbamuche, 2015). Today, the technology world demands education to equip countries such as Nigeria with creative people who are innovating the methods of teaching and learning (Martin et al., 2020; UNESCO, 2023). In a broader sense, education is any experience that helps to develop a person intellectually and personally.

From the social point of view, it is the conscious transfer of acquired values, information and skills between generations (Wikipedia, 2010).

E-learning is not a new concept in the world, but it has been a driving force in the progress of education in many fields. Some Nigerian universities as reported by Sarumi and Ojedeji (2024) have adopted e-learning for remote learning and lifelong learning. E-learning is the use of electronic tools to assist in teaching, to monitor student performance and to measure progress (Sale, 2002). Hedge and Hayward (2004) define it as an innovative approach of developing interactive and learner-centered learning environments delivered electronically anywhere and anytime through digital platforms in accordance with sound instructional design. In brief, e-learning is computer aided learning either offline through media like CD-ROMs or online over the internet. Online learning can be audio or audio-visual or a combination of both. Typically, online learning takes place through a web browser, such as Google Chrome, Mozilla Firefox or Internet Explorer. E-learning is a mix of digital devices and technology-enabled instruction. It includes computer-based, web-based and virtual classroom learning and digital collaboration. Educational content can be delivered through the Internet, intranet/extranet, satellite TV, video or audio cassettes and CDs (Afolabi et al., 2021; UNESCO, 2023).

The Growth of Information and Communication Technologies (ICTs)

In industrialized countries, ICTs have resulted in the emergence of completely digital institutions known as virtual universities (Haleem et al., 2022). However, traditional universities in Nigeria are slowly embracing the use of ICT in academic activities while full scale e-learning is still limited due to lack of infrastructure. But the growing reliance on ICT presents a significant opportunity to improve access to remote learning (Kundu & Bej, 2021).

Understanding Broadcasting and Broadcast Media

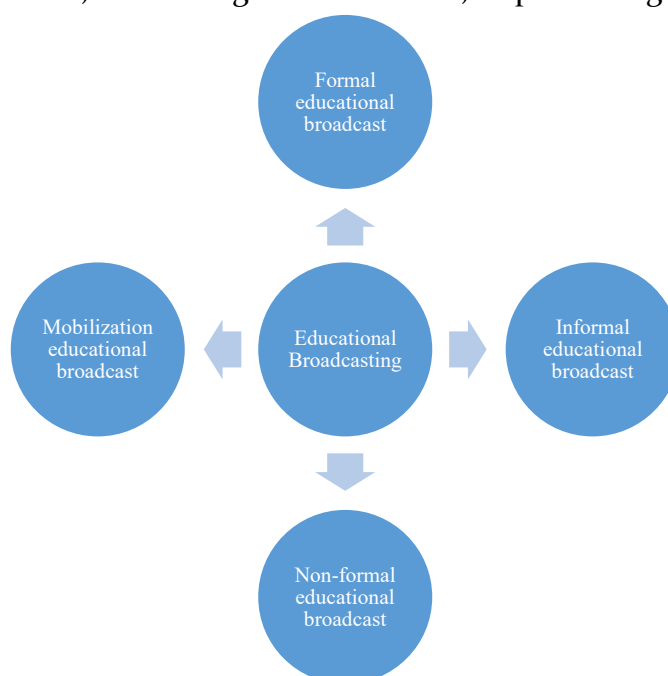
According to Russell as cited by Etim (2006), it is the transmission of powerful electromagnetic impulses through the air. Phelan (2022) states that it is the popular use of electronic devices for spreading information by sound and visual means. Broadcast media are the ways in which messages, information and knowledge are communicated to particular audiences in particular places. Educational broadcasting refers to the use of broadcasting for educational purposes, either in a formal setting within institutions or informally through public awareness campaigns on family planning, agriculture, or health (UNESCO, 2023; World Bank, 2021).

Forms of Educational Broadcasting

Although some researchers have identified four modalities of educational broadcasting, Iwu and Ezeako (2010) and Otuya-Asohro and Ijeh (2024) have proposed

a new description of educational broadcasting that can be illustrated with a graphic representation:

1. Formal instructional broadcasting: It has schedules, certification, grading schemes, and set curricula to enable organized learning.
2. Non-formal educational broadcasting: targets adults, focusing on socially beneficial information and facilitating skill development without disrupting their regular job routines.
3. Informal educational broadcasting: is the regular exposure to news, dramas, and conversations on radio and television that help in the acquisition of knowledge through experience and observation.
4. Mobilization educational broadcasting: Public service announcements, or jingles, are often utilized to deliver predetermined messages aimed at changing public behavior, advocating certain actions, or promoting certain notions.



Radio and television are the two principal media for educational broadcasting. Not all of the broadcasts are overtly educational, but a lot of shows, even entertainment shows, help viewers learn by giving insights into culture and the environment (World Bank, 2021).

Educational Television Broadcasting

Educational television is the broadcast of programmes with specific educational goals (Akude, 2004). These programs may target adults in non-formal settings (e.g. workers or farmers) or students in formal settings. Farrant (1980) quoted in Abidoye et al. (2011) that television is a 'window to the world' through which pupils can travel fast or virtually visit places like operating rooms. Because of this combination of visual and audio elements it is one of the most effective teaching tools. Akude (2004) has noted its wide use in education especially in the form of instructional television

which is planned audiovisual programming with the intention of achieving specific learning goals. Haleem et al. (2022) classify the instructional television broadcasts into three categories as:

1. Open Broadcasts: Regularly scheduled instructional programming.
2. Open-Circuit Television: Signal received simultaneously at several premises or points of viewing. Such a strategy has been successfully deployed in places such as Glasgow, Scotland and Wisconsin, USA.
3. Closed-Circuit Television (CCTV): A system of coaxial cables linking viewing locations to a central production unit. The system is constrained by the length of the cable and is only present in an institution.

Educational Benefits of Television

According to the World Bank (2021), television has several benefits on education including:

- Using multimedia and colorful displays to improve education in the classroom.
- Bringing audiovisual education to the masses.
- Allow multiple schools in transmission distance to share the experience of outstanding teachers.
- Saving time and effort for both educators and learners.
- Use of closed-circuit television (CCTV) to prepare teachers with video recording to allow micro teaching assessment.
- Medical education can live-stream surgeries to classes without crowding operating rooms using carefully placed cameras.

Radio as an Educational Tool

Radio remains one of the most accessible mass communication tools for educational purposes due to its expense, wide coverage, and ability to reach learners outside traditional classroom settings. Educational radio, with its curriculum-based lessons, continues to be a valuable tool in improving teaching and learning in many developing contexts, particularly for students in remote, disadvantaged and resource-poor communities. The UNESCO Global Education Monitoring Report (2023) points out that interactive radio instruction is still an important educational tool for reaching hard-to-reach students. Several countries are using radio-based approaches to improve learning outcomes in areas where digital connectivity is poor.

Recent studies demonstrate that radio remains relevant for improving learning outcomes. Educational radio grants students access to expert opinion, structured learning materials, and supplementary explanations outside the classroom. It also benefits educators by providing them with better ways of teaching, more content on the subject matter, and different teaching methodologies (Sanusi, et.al. 2021).

Benefits of Radio Broadcasting for Education

Recent studies reveal the following educational advantages of radio broadcasting:

1. **Cost-effective reach:** Radio provides an economical means of delivering standardized lessons to large numbers of learners across geographically dispersed communities, especially where access to digital technologies remains limited.
2. **Access to current knowledge:** Educational broadcasts can disseminate updated information, including developments in science, technology, health, and social issues, thereby extending learning beyond textbooks.
3. **Emotional and cognitive engagement:** Radio shows can engage listeners' emotions and improve understanding through the use of storytelling, drama, conversation, interviews, and sound effects.
4. **Additional learning support:** Radio lessons serve as additional resources that promote revision, complement classroom instruction, and offer additional clarifications on challenging concepts.
5. **Expert instruction:** Radio enables learners in disadvantaged areas to access lessons developed or delivered by subject specialists, reducing inequalities caused by shortages of qualified teachers.
6. **Accessibility and flexibility:** Because radio receivers are relatively affordable and easy to operate, radio remains useful for learners in communities with limited technological resources.
7. **User-friendly learning experience:** The familiarity of radio as a communication medium makes it easy for students, teachers, and communities to adopt for educational purposes.

While newer digital platforms are expanding educational opportunities, radio remains an inclusive way to reach students who may not otherwise have access to formal and digital learning options.

Techniques for Educational Broadcasting

Leave (2004) noted that the educational situation gave rise to several approaches:

- **Teacher substitution:** If there are not enough teachers, the media can provide children with a full course of instruction.
- **Supplementary/ Enrichment role:** Classroom instruction supports supplemental or enrichment role programs that align with the curriculum and audience preferences. Teachers are encouraged to integrate these in their lesson plans to improve learning.
- **Distance learning:** Success is contingent on logistic and environmental factors but broadcast media can reach students in their homes.

The Use of Broadcast Media in Primary Education

Hubalovska's (2015) study in the Czech Republic identified the essential components of successful e-learning in primary schools:

- (i) Motivation: Students should be motivated to engage fully.
- (ii) Independence: Students should be able to schedule their schedule and manage their time.
- (iii) Technological literacy: Knowledge of e-learning tools is a must.
- (iv) Access to technology: There must be sufficient and reliable equipment.

E-learning in primary schools is best implemented in a blended learning approach because young children (ages 5–12) often do not have the independence for self-directed learning (Martin et al., 2020; UNESCO, 2023). Broadcast media should supplement, not substitute for, classroom instruction.

Ruflat and Davies (2004) classify types of e-learning resources for classroom use as shown in Table 1:

E-learning Type	Application for Instruction
1. Knowledge database	Websites offering lesson explanations and step-by-step task guidance; highly interactive.
2. Online support	In form of forums, chat rooms, email, or instant messaging for real-time Question and Answers.
3. Asynchronous training	Involves Self-paced learning via discussion boards, emails, or bulletin boards; includes reference links instead of live sessions.
4. Synchronous training	It involves real-time instruction where teachers and students interact online; sessions last from one class to several weeks, using websites, video conferencing, or two-way broadcasts.

Case Example: Educational Television in India

Educational Television (ETV) is targeted at children in India aged five to eleven years. The Central Institute of Educational Technology (CIET), and its state level partners (SIETs), develop and evaluate programmes. These programmes are telecast by Doordarshan in regional languages through satellite. Children are watching on street sets. Each 45-minute ETV slot is made up of two 20-minute items with a 5-minute break in the middle. The first is for ages 5–8 (grades 1–3) and the second for ages 9–11 (grades

4-5). The content is based on the main curriculum and contains difficult or attention-grabbing subject matter. Programs made in Hindi are dubbed in to four other languages. There are special programmes for the regions concerned in Delhi and Bombay, while in the Hindi speaking states the broadcast is in Hindi.

Problems of Education in the Broadcast Media

Broadcast media can be useful for education but there are still several obstacles to its effective use in Nigeria. Recent research has identified the main barriers to the effective integration of educational technology as the lack of infrastructure, limited human capacity, financial constraints and weak institutional support.

- (i) **Limited technology infrastructure:** Lack of reliable electricity, broadcasting facilities, digital devices, internet connectivity and ICT infrastructure is one of the major barriers to technology supported learning. UNESCO (2023) highlights that inequalities in access to educational technologies are widening learning gaps, especially in low- and middle-income countries with poor digital infrastructure.
- (ii) **Shortage of trained personnel:** There is a shortage of qualified staff. Teachers, program developers, and administrators of education must possess adequate digital literacy and instructional technology skills to effectively use broadcast media for instruction. Akinwale and Akinbobola (2022) observed that teachers are not adequately trained in designing and implementing technology-enhanced instructional strategies.
- (iii) **Resistance to Technology-Based Instruction:** Some teachers and learners are hesitant to adopt technology-assisted instruction instead of traditional classroom instruction due to lack of confidence, unfamiliarity with digital tools, or fear of changing conventional teaching approaches (Ogunode, 2021).
- (iv) **Inadequate Funding and Resource Allocation:** The sustainability of educational broadcasting programs is hindered by insufficient funding for broadcasting infrastructure, content development, educational technology, and maintenance. According to World Bank (2021) a lack of sufficient funding continues to hinder the expansion of digital learning systems in many poor countries.
- (v) **Dependence on government funding:** Many educational broadcasting projects are heavily dependent on government funding that may restrict their ability to be innovative, continue, and grow. More cooperation between governmental, private, telecommunications and educational institutions is needed for sustainable educational media development (UNESCO, 2023).

- (vi) **Poor coordination of ICT initiatives:** Fragmentation and lack of strategic coordination reduce the efficiency of educational technology programmes and the impact of investments. There is potential for broadcast media to become a more reliable vehicle for delivering education in Nigeria if infrastructure is strengthened, the capacity of teachers increased, investment increased and policies coordinated. Effective planning, policy alignment and monitoring procedures are needed to ensure broadcast media initiatives support more holistic digital learning strategies (Federal Ministry of Education Nigeria, 2022).

While many barriers remain, there is potential for broadcast media to become a more reliable vehicle for delivering education in Nigeria if infrastructure is strengthened, the capacity of teachers increased, investment increased and policies coordinated.

Conclusion

Broadcasting plays a vital role in education. The use of media such as radio, television, and internet-based media is essential to the success of instruction at all levels, with many broadcasters streaming online. The spread of radio and TV stations in Nigeria and the unending problems of the educational system make the useful role of broadcast media not an alternative to overlook. However, for e-learning to succeed especially in primary schools, the curriculum needs to be revisited to include content that can be delivered digitally.

Recommendations

Some of the suggestions for improving educational broadcasting in Nigeria include:

1. Revision of the curriculum in elementary schools to include online learning instructional materials.
2. Allow the National Educational Technology Center to expand its educational television programmes and establish a separate national broadcasting network so that there will not be so much dependence on the Nigerian Television Authority (NTA).
3. Reinforce Government's efforts to ensure stable power supply across the country which is vital for the success of e-learning.
4. Provide media or technical laboratories with quality radio receivers and functional recording equipment to reproduce ETV teachings in each elementary school. Schools should be provided with schedules of broadcasts beforehand and should use available teaching guides, lesson notes and scripts.
5. Keep school library catalogs of digital audiovisual resources stored in cloud-based systems for easy access and playback.

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