

THE ROLE OF DIGITAL PEDAGOGY IN ENHANCING TEACHER EDUCATION IN NIGERIA

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Abstract:

In recent years, digital technologies have revolutionized various sectors, including education. This paper explores the role of digital pedagogy in enhancing teacher education in Nigeria. As the country strives to improve its educational system, it is essential to understand how digital tools and techniques can support the professional development of teachers. Furthermore, this paper will identify potential challenges faced by teacher educators and policymakers in integrating digital pedagogy into teacher education. This paper also highlights some of the challenges such as limited infrastructure, lack of digital literacy skills, and resistance to change. Recommendations will be provided to address these obstacles and ensure the effective implementation of digital pedagogy in Nigeria teacher education.

Keywords: Digital Pedagogy, Teacher Education, Technology and Educational Outcomes.

Introduction

The digital age has increasingly ushered in the growing need for Information and Communication Technology (ICT) application in all facets of life. In fact, technology plays a vital role in teacher education. It is penetrating every nook and cranny of human existence. No wonder Akabogu (2016) stated that the computer technology will remain a key component to almost everything one does in this 21st century. The use of modern technology is not left out in teacher education. In the classroom, the usual instructor-learner based approach (face-to-face) is gradually changing with the advent of ICT to collaborative learning or e-learning environment where learners interact with learning materials, their instructors and other learners from various locations at different times using network technologies in an online environment. It is also believed that the use of Educational Technology (ECT) in hardware and software's like: computers, instructional Aids projectors, video clips and models.

According to Cope and Ward (2017), will provide positive effect on learners achievement, and makes teaching and learning more effective. With the rapid expansion of knowledge and the challenges teaching and learning is facing in our society, the need for teachers to incorporate modern technologies (digital technology) becomes necessary. These challenges tend to ask teachers to continuously retrain themselves and acquire new knowledge and skills while maintaining their jobs Carlson & Gadio, (2015). This however, placed more demand on colleges of education to learn how to use these modern technologies in training their teachers because they can provide more flexible and effective ways of connecting both teachers and learners to the global teacher community.

Digital pedagogy is the use of contemporary digital technologies in teaching and learning. This has its origins in distance learning which took the form of correspondence courses delivered by mail during the early twentieth century. Digital pedagogy looks critically at digital tools as potential means for teaching and learning. Carter, (2014). Digital pedagogy considers digital content and space as valuable sites for information and knowledge, in addition to traditional medium such as books or classroom. With the current rise in use and high application of technologies, pre-service and in-service teachers undergoing teacher education training should be provided with learning opportunities that help them to understand and

practice the skills of pedagogic planning and the evaluation of the educative possibilities using technological tools available. Digital technologies are electronic tools, systems, devices and resources that generate, store or process data. Well known examples include social media, online games, multimedia and mobile phones. Digital learning is any type of learning that uses technology. It can happen across all curriculum learning areas. Digital Pedagogy is not only about using digital technologies for teaching and learning but rather approaching digital tools from a critical pedagogical perspective. So, it is as much about using digital tools thoughtfully as it is about deciding when not to use digital tools, and about paying attention to the impact of digital tools on learning

Teacher training in Nigeria Education all over the world is seen as a process of transmitting the cultural heritage, stabilizing the present and improving or changing the future of the people. The school system in this regard is generally accepted as a major agent of education Adaka, (2017).

The paper is mainly centered on the role of digital pedagogy in enhancing teacher education in Nigeria. Attempts were made to review the brief history of digital pedagogy, concept digital pedagogy, concept of teacher education and the role digital pedagogy plays in teacher education. The knowledge that will be obtained from this study will be of great relevance to student-teachers, teacher preparation institutions and researchers in the field of education.

Brief History of Digital Pedagogy

Digital pedagogy has evolved significantly over the years. Here's a brief history according to Fouts, (2002).

1. Early Adoption (1950s-1970s): The use of computers in education began in the 1950s with mainframe computers. Early efforts focused on computer-assisted instruction (CAI) which used punch cards and late interactive terminal to deliver educational content
2. Emergence of personal computers (1980s-1990s): The introduction of personal computers in the 1980s brought new opportunities for educators. Software like word processors and educational games became prevalent in school.
3. Internet Era (1990s-2000): The advent of the internet in the 1990s led to the development of online learning platforms and digital resources. Distance education and e-learning started gaining traction.
4. Learning Management System (LMS) (2000s-2010s): LMS platforms like Blackboard and module allowed educators to create and manage online courses. This era saw the rise of blended learning, combining traditional and digital teaching methods.
5. Mobile and Apps (2010s): The proliferation of smart phones tablets led to the growth of mobile learning apps. This made education more accessible and personalized, with platforms like Khan Academy and Duohngo becoming popular.
6. Gamification and Virtual Reality (2010s-Present): Gamification techniques and virtual reality (VR) started to be integrated into education to engage students in immersive learning experiences.
7. Remote Learning Boom (2020s-Present). The COVID-19 Pandemic accelerated the adoption of online and remote learning worldwide. Video conferencing tools like Zoom and Google meet became essential for virtual classroom
8. Adaptive Learning and AI (2020s-Present). Artificial Intelligence and machine learning are being used to personalize learning experiences, offering tailored content and assessments to students.

9. Augmented Reality (AR) and mixed Reality (MR) 2020s-Present. AR and MR technologies are being explored to enhance hands on learning through virtual overlays and interactive simulations.

Digital pedagogy continues to evolve with a focus on accessibility inclusivity and the integration of emerging technologies to meet the diverse needs of learners in the 21 century.

Concept of Digital Pedagogy

Digital pedagogy is the study and use of contemporary digital technologies in teaching and learning. Digital pedagogy may be applied to online, hybrid, and face-to-face learning environments. Digital pedagogy also has roots in the theory of constructivism. Digital pedagogy is the application of technological media to facilitate teaching and learning. It is also considered as the use of technological tools for exploring knowledge, support learning by construction to improve the effectiveness of teacher education Januszewski, (2015). The Association for Educational Communication and Technology (AECT, 2017) describe Digital pedagogy as complex, integrated process involving people, procedures, idea, devices and organization, for analyzing problems, devising, implementing, and evaluating teaching and learning. In another dimension,

Wodi, (2012) stated that Digital pedagogy include various techniques of shaping behavior applied to material use on audio records, computers, and video disk which increases the overall impact in teaching and learning that takes place in the classroom. Albert, (2016) described Digital pedagogy as the application of appropriate Information and Communication Technology (ICT) tools, which facilitate learning by stimulating the sensory, and cognition to enhance of the learner. It has a multi-faceted nature comprising a cyclical process using an a collection of tools (both physical and conceptual), and a multiple-node relationship between learners and facilitators of instruction, as well as between learners themselves. This definition according to Aziz has five components namely: Considered application, appropriate tools, techniques, or processes, facilitates the application of senses, memory, and cognition, enhance teaching practices, and improve learning outcome. Digital pedagogy therefore involves the application of ICT facilities in the teaching and learning which stimulates learners' interest, and promotes self-paced learning. These technologies involve numerous media that deliver text, computer-assisted instruction, software like word processors and educational games, internet, smart phone, video conferencing tools like zoom and Google, computer-based learning, as, web-based technologies, Artificial intelligence (AI) and so on.

Based on the different submissions on the definition of digital pedagogy, it can briefly stated that digital pedagogy is powerful instrument that can help improve education in various ways, such as making it easier for instructors to generate instructional materials and providing new methods for people to learn and collaborate

Concept of Teacher Education

Teacher education refers to policies and procedures aimed at providing prospective teachers with the knowledge, attitudes, behaviours, and skills they will need to perform their duties effectively in the classroom, school, and community (Yusuf, Afolabi & Oyetayo, 2014). Teacher education can also be defined as a programme of education, research, and training for people who want to teach at all levels of education, from pre-primary to higher education (Westbrook, et al., 2013; Akindutire & Ekundayo, 2012).

It is a programme aimed at improving teacher proficiency and competence in order to enable and empower teachers to meet the demands of their profession and face the challenges that they encounter. Teacher education is often divided into three stages: initial teacher training/education, induction, and teacher development or continuing professional

development (Yusuf, 2012a; Ronald, 2009). Although it should ideally be conceived of and organized as a seamless continuum, it is often divided into these stages. Initial teacher training/education encompasses teaching skills, sound pedagogical theory and professional skills (Ronald, 2009). Teachers will benefit from an induction programme that includes mentoring and is designed to provide support, guidance, and orientation to new teachers as they begin their careers in the classroom.

These programmes assist new teachers in their first year of teaching by encouraging ongoing dialogue and collaboration among teachers, which improves the effectiveness of new teachers and improves students' achievements. It is critical to conduct an orientation programme (induction) for new teachers prior to the start of the instructional term, which should be supervised by the mentor teacher; the mentor observation of the beginning teacher's classroom teaching skills; and weekly meetings between the mentor and the beginning teacher to discuss the beginning teacher's performance and any needed improvements should be prioritized (Fareo, 2013).

Teacher development, also known as continuing professional development, refers to activities that improve a teacher's skills, knowledge, expertise, and other characteristics (Yusuf, & Dada, 2016; Jekayinfa, 2000). It is important to remember that development can come in a variety of forms, from formal to informal. It can be made available through external expertise in the form of courses, workshops, or formal qualification programmes, a collaboration between schools or teachers across schools (e.g. observational visits to other schools or teacher networks), or collaboration within the schools where teachers work.

In this last case, development can be provided through coaching/mentoring, collaborative planning and teaching, and the sharing of good practices. If teacher preparation was to meet global best practices and have a positive impact on the quality of curriculum transaction in classrooms, as well as pupil learning and larger social transformation, the focus of teacher preparation has to shift from training to education. The aspects that need greater emphasis are; the length of academic preparation, the level and quality of subject matter knowledge, the repertoire of pedagogical skills that teachers possess to meet the needs of diverse learning situations, the degree of commitment to the profession, sensitivity to contemporary issues and problems and the level of motivation. This would be impossible if teacher preparation was solely focused on training because holistic teacher development is required, teacher education must take precedence over mere training.

Role of Digital Pedagogy in Enhancing Teacher education in Nigeria.

There is emerging evidence that the use of digital pedagogy can help improve instructional delivery and raised standards of teacher education in Nigeria. Some of role digital pedagogy play in enhancing teacher education in Nigeria according to Frederick, (2015) are as follows;

1. **Access of Resource:** It can provide access to a vast array of educational resources including online courses, videos, and research materials making it easier for teachers in Nigeria to stay update with the latest teaching method and content.
2. **Interactive Learning:** Digital pedagogy encourages interactive and engaging learning experiences, allowing teachers trainees to actively participate in lessons, collaborate with peers and develop practical teaching skills.
3. **Flexibility:** It offers flexibility in learning, enabling teachers to access educational content at their own pace and convenience which is particularly valuable in a diverse country like Nigeria with varying access to traditional educational institution
4. **Global Perspective:** Through online platforms and resources, teacher trainees can gain a broader, global perspective on education, which can help them adapt teaching methods to local contexts and incorporate innovative approaches.

5. **Teachers Collaboration:** digital platforms can facilitate collaboration among teachers, both within Nigeria and internationally, enabling the exchange of ideas, best practices and experiences.
6. **Assessment and Feedback:** Digital tools can provide efficient assessment and feedback mechanism, helping teachers educators in Nigeria assess the progress of trainees more effectively and tailor their support according.
7. **Cost-Effective Training:** Online teacher education programs can be cost-effective, reducing the financial burden on both trainees and institutions, potentially increasing access to quality education.

There are several challenges associated with the implementation of digital pedagogy in enhancing teacher education in Nigeria. These challenges according to Albert (2016), are as follows:

1. **Divide Digital:** Access to technology and the internet is not uniform across Nigeria, with significant disparities between urban and rural areas. Many potential teacher trainees may lack the necessary infrastructure and devices to engage in digital learning effectively.
2. **Limited Internet Connectivity:** Even in areas with internet access, the quality and reliability of internet connections can be inconsistent, leading to disruptions in online learning
3. **Infrastructure and Power support:** Inadequate electricity support and unreliable power grids can hinder the use of digital tools and online platforms for teacher training.
4. **Digital Literacy:** Many teacher trainees may not be proficient in using digital technologies or may lack basic digital literacy skills, making it challenging to navigate online learning platforms.
5. **Content Quality:** Ensuring the quality, relevance and appropriateness of digital educational content can be a challenge. Low- quality or outdated materials can negatively impact the effectiveness of teacher education
6. **Teacher Preparedness:** Teacher educators themselves may not be adequately prepared to effectively integrate digital pedagogy into their teaching method limiting the impact of technology on teacher education
7. **Cost:** Implication: while digital pedagogy can be cost effective in some ways, there are initial costs associated with acquiring and maintaining technology infrastructure and creating high quality digital content.

Conclusion

The importance of using digital pedagogy in enhancing teacher education in Nigeria cannot be over emphasized. The use of digital pedagogy in the delivery of instruction in teacher education in the 21st century in Nigeria is a sure way of thinking of the future by providing knowledge-based education in line with international best practices for a competitive workforce. However, much need to be done on human capital building for teachers though continuous professional development training workshops, seminars, and course collaboration with National and international institutions. Although providing these avenues for professional development of teachers is costly, the benefits are much felt in improving the quality of teaching, enhancing the image of the institution and making learning more effective.

Recommendations

Despite the role digital pedagogy played in enhancing teacher education in Nigeria. It is yet to fully adopt this innovation for teaching and learning. Effort should be made toward integrating digital pedagogy in our Teacher training institute in the country through the following measure:

1. Lecturers in the teacher training Institute should be encouraged to go for ICT training and capacity building workshops rather than just possess the qualification on paper for promotion sake.
2. Government should wake up to her responsibility by ensuring that digital pedagogy Policy statement are translated and necessary funding provided.
3. All teacher training institute in Nigeria should be made to benefit from the ICT project regardless of location and ownership through procurement of ICT facilities and providing the enabling environment for ICT integration.
4. The government should work towards stabilizing power supply in Nigeria rather than paying lip service to it to fast track ICT facilities installation in most of the teacher training institute so as to function effectively.

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