

Assessment on Mode of Instructional Technology and Use of Media in National Open University of Nigeria: A Historical Perspective

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Abstract

The National Open University of Nigeria (NOUN) has experienced significant growth and development in its use of instructional technology and media over the past two decades, yet there is a dearth of research on the trajectory of this evolution. This study therefore addresses this gap by analyzing NOUN's use of instructional technology and media from 2003 to 2023. The study employed a mixed methods approach, combining qualitative and quantitative data collection and analysis methods. The instruments adopted and validated for the study were official documents and structured questionnaire tagged, Questionnaire on Mode of Instructional Technology and Media (QMITM) with the reliability coefficient ($r=.89$). Qualitative data were analysed thematically while quantitative data were analysed using mean ranking. The findings of the study revealed that there was a clear progression in the instructional technology and media employed by NOUN, with online study materials being the most widely adopted mode, achieving a mean score of 0.93. The study concluded that without deliberate efforts to strengthen institutional capacity and enhance policy execution, the goals of accessibility, quality assurance, and sustainability in open and distance education will remain unattainable. The study therefore, recommended that NOUN should invest more in improving internet accessibility and the stability of its online learning platforms to accommodate all learners, regardless of location.

Keywords: Historical Analysis; National Open University of Nigeria; Instructional Technology; Media.

Introduction

The importance of instructional technology to distance education practice cannot be over-emphasized. Braimoh (2015) stated that technology enables individuals to gain access to education, information and resources at anywhere, place and time. The increase in information and communication, according to (COL, 2000), as they are applied to educational process, has created a new set of students, who are not merely restricted to the brick-and-mortar classroom (Ojo, Ogidan and Olakulehin, 2000). Adekanmbi (1992) asserted that media are the materials and equipment used in communicating didactic information between the tutor and learner in distance education, while Adeosun (2015) stated that technological infrastructures should include adequate internet bandwidths and effective internet access such as functional workstation, instructional website and internet server portal. The emergence of computer-network communications in the 1980s and 1990s, and recent technological advancement in the areas of video transmission, e-mail, the internet as well as the World Wide Web greatly influenced tutor-students' interaction in distance education (Oyeomi, 2018). Many people gained access to computer-linked telephone lines. With the use of computer conferencing on the World Wide Web, tutors and students present text, pictures, audio, and video. File sharing and communications tools like e-mail, chats and audio and video conferencing are integral to the Internet mode. Despite the initial pessimism in U.S.A., Holmberg (2008) revealed that with the introduction of Information and Communication Technology that enhanced online communication, many distance learning and virtual universities emerged all over the globe. These institutions employ the internet to deliver classes and seminars. Thus, they conduct teaching-learning majorly online to opportune students whose computer system meets technological requirements of the institution to earn certificate. There are now virtual universities which are fully online. Moreover, Michigan Virtual University (Olayinka, 2015). The U.S. Centre for Education Statistics reported that about 75% of public 4-year institution and 62% of public 2-year institution offered DE courses in 1997-98 with more than 1.66 Million enrolments in more than 54 distance education courses. Technologies with higher fixed costs and lower variable costs such as radio can be inexpensive if they serve large numbers of students and recurrent costs are managed. Studies have shown that Interactive Radio Instruction (IRI) in primary schools can deliver learning more cost-effective than textbooks or



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increased teacher training. Technologies with higher variables cost such as personal computers, may increase quality but are unlikely to bring any cost advantage (Holmberg, 2008). Ameritech (1996) and Porter (1994) contended that “as resources shrink and learning requirements expand, many educational institutions depend on communication technologies, such as distance learning to enhance the effectiveness and efficiency of education”. Morrison (1996) also asserted that telecommunications software and internet have eliminated walls and boundaries in distance education. He stated that “an increasing number of students want and need non-traditional, flexible schedules”. Porter (1994) also emphasized enhancement of independent learning materials through the use of interactive communication technologies and tutor mediation. Omoniyi (2006) also mentioned that effective use of technology can decrease interpersonal relationship and create comradeship and intimacy among students. On the other hand, instructional media refers to various or different channels by which instruction is passed from the tutor to the learner. However, the interactive media in distance education identified by Holmberg (2005) are non-contiguous communication and face-to-face sessions. The available media for non-contiguous interaction are usually the written, recorded, computerized telephone conversation, television and computer conferencing. Correspondence completely dominated the scene until the end of the twentieth century and in most parts of the world, whereas electronic mail and telefax to a considerable extent now replace postal communication (Holmberg, 2005). Distance education instructional media are classified by Adelakun (2010) as print, face-to-face contact, electronic, audio-visual and computer. (i) Print (Postal, Books, Journals, Magazines, Monographs, Postal services); (ii) Face-to-face during contact session (Writing Boards, Demonstrative/ Instructional tools – hand, mouth); (iii) Electronic-audio (Instructional Radio, Audiotape recorder and cassette, Telephone Tutoring, Audio graphics, Educational Radio, Audio Conferencing); (iv) Audio-visual (Video cassette, Video Discs, Interactive Video Conferencing, Educational Television); (v) Computer (Games, Computer-Assisted instruction, Web-Based Instruction, Computer-Mediated Instruction and Computer Conferencing).

Print Materials and Distance Education: Printing press and the postal services really paved the way for well-planned and systematic approach to flexible ODL programme. Print materials served as the fundamental element of distance education: radio, broadcast television, video tape, telephone, satellite television, and cable are latter developments (Moore and Kearsely, 1996). Rowntree (1992), Moore and Kearsley (1996) established that print is the most common form of instructional delivery in distance education institutions. This assertion was further stressed by Bates (1993) who submitted that in spite of the more influential institutions that made use of other media such as television and audio at the end of 1980's, the vast majority of distance education institutions throughout the world was still primarily print-based'. Holmberg (2005) also observed that reading from texts is found to be easier than reading from the computer screen. Having surveyed institutions across many continents, Perry (1984) discovered that distance education institutions in Africa made 100% use of correspondence and print materials in their programmes while Asia and Latin America made use of 93% and 72% respectively. It must be mentioned that this finding is no more applicable to the accredited distance education providing institutions in Nigeria. The institutions now employ multimedia technology in addition to print. Moore and Kearsely (1996) however attributed the predominant reliance and use of print technology to being inexpensive, easy distribution through the public mail or private delivery services. Adekanmbi (2004) also posited that the continued use of print in Africa and many other developing countries is due to its cheapness and easy accessibility. Peters (1998) equally submitted that print permit great economics of scale through industrialized methods of producing standard course packages, which permits individualization of learning. Adekanmbi (2004) further explained that despite the challenges of print, there is still constant romance with it and the transformation, in its context. It is now improved in terms of better prepared texts, high quality course material developmental process, and improved desktop development practices. Even, with regards to the United Kingdom Open University (UKOU) which has a major information and communication technology element, UNESCO (2003) asserted that printed materials continue to be the mainstay of distance learning provision for programmes, and plays multiple roles either as a lead or supporting medium and suitable to combine with variety of other media. Radio and Distance Education: Radio is ranked next by scholars to print media in distance education due to general low cost and availability. Radio is most often used as a supplement, in conjunction with other instructional delivery modes. It is pedagogically considered as a hard teaching medium where skills, or difficult ideas and concepts, or systematic and comprehensive development of knowledge is required. It is pedagogically considered as a hard teaching medium, where skills or difficult ideas and concepts, or systematic and comprehensive development of knowledge is required.



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Ojokheta (2010) also established that in recent times, the use of non-broadcast audio-visual media appears to be on the increase, particularly audio cassettes which have proven to be extremely popular as well as cost-effective. This is applicable in Nigeria due to erratic power supply. Perry's survey found that 42% of African, 38% of Asian, 70% of Australian, and 24% of Latin American distance education institutions make use of audio cassettes to complement teaching and learning. In another study, Bates (1996, 2005) pointed out that audio and video cassettes have radically affected the ratio between fixed and variable costs for audio and video learning. Thus, distance education institutions with relatively small enrolments, less than 1000, should be able to take advantage of audio-visual teaching methods since cassettes represent lower fixed costs relative to variable costs than broadcast methods or media.

Information and Communication Technologies (ICT) such as the internet access, e-mail, CD-ROMs, telephone, online data base, library services are paramount to learning at the National Open University of Nigeria (NOUN). Access to information through ICT increases the information accessible to students to support them in trying new strategies, thinking and creativity that are reflective in practice (Ololube, 2006). ICT provides opportunities students and academic and non-academic staff of NOUN to communicate with one another more effectively during formal and informal teaching and learning (Yusuf, 2005). According to Yusuf (2006), successful distance education cannot be achieved without the use of effective communication and technological tools such as e-mail, fax, internet, television, radio etc. Higher education institutions across the world have been adopting ICT teaching and learning technologies in an effort to create an enabling environment for both students and their instructors to engage in collaborative learning and gain access to information (Ife, 2006 in Ololube). ICT can be used in distance learning to simplify administration, course design, development of materials, course delivery, evaluation and assessment. Despite the adoption of distance education by the federal and state governments in Nigeria, the low penetration of ICT has impeded proper implementation of the programme by institutions of higher learning (Ololube, 2006a). Ololube (2007) also established that an assessment conducted of the available resources conducted in August 1999 for delivering distance education at the CDLCE indicated that there were inadequate facilities for both present and future needs (Moja, 2000). Computer Technology and Distance Education: Computer technology offers the opportunity to search on the World Wide Web (www). It is a good medium for tutor-learner interaction, exchange of views and experiences among a group of students, organized synchronous conference, mock-up of work process etc. (Holmberg, 2008). The highly interactivity of computers distinguishes them from all previous technologies (Omoniyi, 2006).

Web and Distance Education: Moore and Kearsely (1996) stated that recent technology include Computer-Based Instruction (CBI) which uses the computer as a self-contained teaching machine to present individual lessons, electronic mail, computer conferencing and world-wide web applications. The web includes various audio or video capabilities, textbooks, study guides; workbooks and course syllabi that are available on the web rather than in the traditional format. Mobile Phones and Distance Education: Interactions on mobile phones help students to obtain oral dialogue to supplement written explanation of tutors (Drunica, Bush, Garz, and Deiterschule (2003). Mobile technologies such as phones, tablets, electronic readers etc., according to UNESCO (2012), are currently assisting educators by aiding their works with students or by helping the tutors to improve their own pedagogical and content knowledge. Mobile phones have the potentials to expand educational access to population of tutors and students outside the reach of traditional education, provide a portal to guide educational content, send educational content to socio-economically disadvantaged learners, help to providing educational opportunities to families living in marginalized waterside communities, improve educational administration, enhance teachers' professional development and so on. Despite the evident progress in instructional technology and media utilization at the National Open University of Nigeria (NOUN), accessibility and effectiveness of these online study materials in enhancing teaching and learning outcomes remain an issue. Although online resources have become the dominant instructional mode, disparities in digital literacy, internet connectivity, and user engagement may limit their full potential. Moreover, the reliance on online platforms raises concerns about content quality, learner support, and the inclusiveness of technologically disadvantaged students. Hence, it becomes imperative to critically examine how the increased adoption of online instructional media translates into improved learning experiences and academic performance among NOUN students.



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Research Objective

The study aimed to historically analyse the modes of instructional technology and media that were available in the National Open University of Nigeria from 2003 to 2023

Research Questions

1. What was the historical perspective of modes of instructional technology in the National Open University of Nigeria?
2. What types of media technology were available in NOUN within the period 2003 to 2023?

Methodology

The study adopted descriptive survey research design within mixed method. Historical research method was also adopted for the study. This is because the researcher assessed and explained past events concerning National Open University of Nigeria. According to Saidu (2014), historical research involves investigating, recording, analyzing and interpreting the events of the past for the purpose of making generalizations that are helpful in understanding the past, the present and to a limited extent, in anticipating the future. Historical researchers could make use of two major sources of information namely: primary and secondary sources. The primary sources are data provided by the eye witnesses to the incident. It is also regarded as firsthand information. The secondary sources are records or accounts prepared by someone other than the person(s) who participated in or observed an event. Secondary source is also known as second hand information (Abdulrahman, 2012). Both sources of information were used in carrying out this study. This study being a historical research type employed both primary and secondary sources of information to gather data used. The primary source of information for this study included one instrument. The two instruments were used for the study. These were:

1. Historical documents
2. Interview Schedule for Stakeholders of National Open University of Nigeria (ISSNOUN)

The cross validity of the instruments was achieved and authenticity of historical sources were established in their own peculiar ways and these generally involve the rigorous dual process of external and internal criticisms. According to Osokoya (1996), the external criticism of historical sources affirms the authenticity of the data collected. It concerns itself with determining whether the document is a true one and not a forged one. The internal criticism establishes the reliability, accuracy, authenticity, and worth of the data obtained. In validating the historical facts of this study, the data were verified by comparing secondary sources with primary information. Where discrepancies arose among the sources, the investigator established the accuracy of the facts based on their overall plausibility, considering internal consistency, independent corroboration, general compatibility, and agreement with other known and accepted facts. The Cronbach Alpha formula used to determine the reliability of the questionnaires on development of NOUN yielded reliability coefficient of 0.96. With the help of five research assistants who are graduates of NCE were given 1-day training on how to approach, interact, relate and administer the research instruments to NOUN's staff and students visited all the selected sample locations for formal introduction and sought their cooperation in the course of administration of the questionnaire. The questionnaire were thereafter administered to the sample. Furthermore, the researcher personally visited the National Open University of Nigeria Study Centres for official documents and administration of questionnaire. Other places of visit were Federal Ministry of Education and National University Commission (NUC). With regard to the secondary data, the researcher made use of relevant textbooks, journals, articles, thesis and reports on National Open University of Nigeria (NOUN). In history, data are usually analyzed by adducing facts and interpreting evidences available to the researcher. Therefore, the qualitative data obtained for this study were analyzed using thematic analysis to be in line with historical style of data analysis as stated earlier while, the quantitative data for the study were analyzed using descriptive statistics of mean, percentage, frequency count and mean ranking.

Presentation of Result

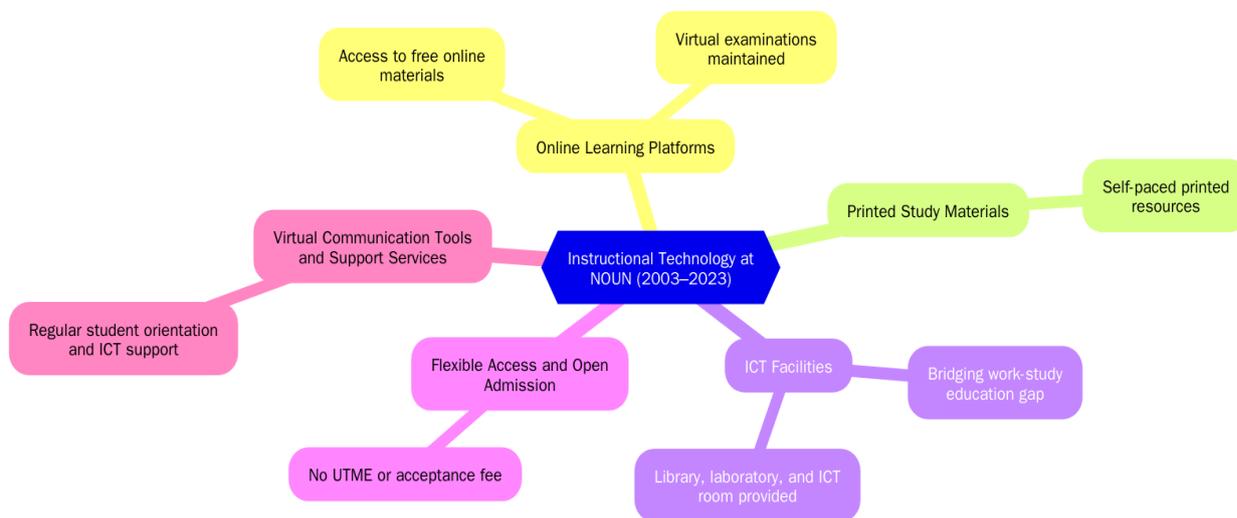
Research Question 1: *What was the historical perspective of modes of instructional technology in the National Open University of Nigeria?*

To address the research question on the historical perspectives of modes of instructional technology and media that were available in the National Open University of Nigeria (NOUN) from 2003 to 2023, both descriptive (for the survey) and thematic (for the interview) analyses were conducted.

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Thematic findings

In addition, to the survey findings, the assertions of Stakeholders of NOUN including coordinators, facilitators and administrators were analysed and five themes emerged as the modes of instructional technology and media available in the National Open University of Nigeria from 2003 to 2023



Source: Saidu & Saliu, (2025)

Figure 1: Thematic Map on Modes of Instructional Technology and Media (2003-2023)

Between 2003 and 2023, the National Open University of Nigeria (NOUN) adopted a variety of instructional technologies and media that fostered flexible and accessible education. A major **Online Learning Platforms (figure 1)**, theme that emerged is the use of which enabled students to access educational resources remotely and at no cost. As highlighted by an administrator, *“It is not compulsory to come to school, there are materials online and it is free” (Excerpt 20)*, affirming the shift to digital accessibility. Further emphasizing this transformation, a coordinator noted that *“virtual examinations were implemented and have remained a consistent feature of academic assessments” (Excerpt 21)*, demonstrating the institution’s commitment to remote learning infrastructure.

Printed Study Materials (figure 1), In addition to digital platforms, NOUN maintained the use of which allowed learners to study independently and at their own pace. A facilitator acknowledged this flexibility, stating, *“You can learn at your own pace, unlike other universities” (Excerpt 21)*. This approach ensured inclusivity for students who may not have consistent internet access, aligning with the institution’s mission of open and distance learning. The availability of ICT Facilities further supported the learning process. According to one administrator the university was specifically designed *“to bridge the gap between those who are working and need to be educated, to make learning easy for them” (Excerpt 30)* ICT infrastructure, including libraries, laboratories, and ICT rooms, were provided to support academic engagement, with students receiving regular orientation on examination procedures and ICT-related matters.

Flexible Access and Open Admission (figure 1), Another significant aspect which removed traditional entry barriers to tertiary education. A facilitator explained that *“There is nothing like UTME and Post UTME in NOUN. There is no acceptance fee” (Excerpt 20)*, underscoring the **Virtual Communication Tools and Support Services** university's inclusive admission policies. Also, the theme of reinforced NOUN’s commitment to continuous student engagement and support. As one facilitator observed, *“regular orientations were conducted” (Excerpt 18)* to address academic and technical concerns, ensuring that learners remained guided throughout their educational journey.

In general, between 2003 and 2023, the National Open University of Nigeria (NOUN) embraced a range of instructional technologies and media that promoted flexible, inclusive, and accessible education. The institution transitioned from traditional print-based correspondence to integrating online learning platforms and multimedia resources, allowing students to access materials remotely and study at their own pace. This digital shift was supported by virtual assessments and robust ICT infrastructure designed to accommodate diverse learners, including those balancing work and study. NOUN’s open admission policies further removed barriers to higher education, while continuous student support through orientations and



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virtual communication ensured sustained engagement. Together, these approaches reflect NOUN's commitment to evolving distance education that meets the needs of its learners across the country.

Research Question 2: What types of media technology were available in NOUN within the period 2003 to 2023?

Survey Findings

Selected items from the administered survey were analysed. These items focused on the evolution of instructional models, current delivery strategies, and compliance with national policy on instructional technology use. Responses from students and staff were scored and analysed using mean rank order to determine the extent of adoption and usage of each instructional mode. Table 1 below presents the ranked results, reflecting the most to least prevalent instructional technologies and media employed by NOUN over the two-decade period

Table 1: Mean Rank Order of Instructional Technology and Media Modes that were available in NOUN (2003–2023)

Instructional Technology/Media Mode	Mean Score	Rank
Online study materials	0.93	1
Multimedia/Integrated Model (print, audio, video, computer-based learning)	0.91	2
Distribution of printed study materials	0.90	3
Flexible Learning Model (Internet-based, IMM, computer-mediated communication)	0.86	4
Face-to-face interaction	0.86	5
Weekend seminars	0.84	6
Tele-learning Model (audio/video conferencing, radio)	0.82	7
Computer-mediated learning in study centres	0.80	8
Use of audio tapes, video tapes, CD-ROMs	0.78	9
Intelligible Flexible Learning Model (interactive, campus portal, WWW)	0.79	10
Induction approach	0.73	11
Period of practical field work	0.71	12
Correspondence Model (postal, print, journals)	0.75	13

Table 1 revealed a clear progression in the instructional technology and media employed by the National Open University of Nigeria (NOUN) from 2003 to 2023. The most widely adopted mode was online study materials, with a mean score of 0.93, followed closely by multimedia/integrated models (mean = 0.91) and distribution of printed study materials (mean = 0.90), indicating a strong shift toward digital and blended learning environments. While earlier methods such as the correspondence model (mean = 0.75) and the use of audio/video tapes and CD-ROMs (mean = 0.78) were still in use during the early years, they have gradually been replaced by more flexible and interactive technologies such as internet-based learning platforms and computer-mediated instruction (mean = 0.80). The continued use of face-to-face interaction (mean = 0.86) and weekend seminars (mean = 0.84) suggests that blended learning remained a key strategy to support student engagement. Overall, the data reflects NOUN's transition from traditional distance education methods to a more modern, technology-driven instructional model aligned with global trends in open and distance learning.

Discussion of the Findings

The study revealed that a clear progression in the instructional technology and media employed by NOUN, with online study materials being the most widely adopted mode, achieving a mean score of 0.93. This implies that instructional technology and media play a pivotal role in content delivery and learner engagement. This finding supports the assertion by Braimoh (2015), who highlighted that technology enables individuals to access education, information, and resources anytime and anywhere. In line with this, NOUN (2018) reported that the institution delivers education through various distance learning methods, including self-instructional materials, face-to-face facilitation, online tutorials, and radio/television broadcasts. The study provided that tutorial, prompt feedback and comments on assignments were the most significant aspects of student-support services of NOUN. These services include technical support, learning guides, academic mentoring, peer interaction, and access to learning resources, aimed at supporting a diverse learner population. This finding agrees with Jegede (2004), who noted that only 15% of qualified students gain admission into conventional universities in Nigeria, and viewed NOUN's existence as a means of extending educational opportunities nationwide. NOUN (2022) further corroborated this by reporting that the university's directorate offers guidance and counselling on academic programme selection, challenges of distance learning, social issues, and course or examination registration. Since study centres serve as the main points of interaction between the university and its students, most learner support services



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are provided at these centres. The study revealed that the most frequently reported issues were poor programme and policy implementations, inadequacy of media technologists for production and delivery of learning materials. NOUN (2013) similarly acknowledged that inadequate funding remains a major challenge confronting the university.

Conclusion

The National Open University of Nigeria has made significant strides in adopting and integrating instructional technology and media into its teaching framework. The dominance of online study materials, as indicated by the mean score of 0.93, underscores the university's commitment to digital transformation and flexible learning. However, while this progression is commendable, its effectiveness depends largely on the quality of digital content, students' technological readiness, and the institutional capacity to provide consistent technical support. Therefore, continued evaluation and refinement of these online systems are necessary to ensure they meet the diverse needs of learners across Nigeria.

Recommendations

Based on the finding, the following recommendations are proposed:

1. NOUN should invest more in improving internet accessibility and the stability of its online learning platforms to accommodate all learners, regardless of location.
2. Academic and technical staff should receive training in instructional technology design, multimedia content creation, and digital pedagogy.
3. The institution should regularly assess and update online materials to ensure relevance, interactivity, and alignment with current academic standards.
4. Strengthen digital literacy programmes and provide technical assistance to students struggling with online learning tools.

References

- Abiri, J. O. O. (2010). The roles of commissions in the development of education in Nigeria. In J. O. O. Abiri & A. A. Jekayinfa (Eds.), *Perspectives on history of education in Nigeria* (pp. 35–45). Ilorin: Bamitex Printing and Publishing Enterprises.
- Adekanmbi, G. (1992). The transformation of correspondence education to distance education in Nigeria (1927–1987) [Unpublished doctoral dissertation]. University of Ibadan.
- Adelakun, A. A. (2010). Effects of instructional media techniques on social studies learning outcome of Nigerian certificate in education distance learners in Ogun State [Master's thesis, University of Ibadan].
- Ademola, A. E. (2003). Education of special target groups. In G. O. Abodunrin & D. O. Iyiola (Eds.), *Foundational course in education* (Vol. II, pp. 191–198). Oyo: OYSCE Publication Series, Immaculate City Publishers.
- Aderinoye, R. A. (1992). Retention and failure in distance education: The Nigeria Teachers' Institute experience [Unpublished doctoral dissertation]. University of Ibadan.
- Aderinoye, R. A., & Ojokheta, K. O. (2004). Open-distance education as a mechanism for sustainable development: Reflections on the Nigerian experience. *International Review of Open and Distance Learning*, 5(1). Athabasca University.
- Adeyemi, M. (2011). The development of distance education in Nigeria: Challenges and prospects. *Turkish Online Journal of Distance Education*, 12(1). <https://doi.org/xxxx>
- Akinwumi, S., & Oyekan, O. A. (2012). Quality control measures as predictors of quality university education in Nigeria. *West African Journal of Open and Flexible Learning (WAJOFEL)*, 2(1), 121–133.
- Ambe-Uva, T. N. (2007). National Open University of Nigeria (NOUN): A historical perspective and challenges. *Turkish Online Journal of Distance Education*, 8(1), Article 6.
- Bates, A. (1996). Theory and practice in the use of technology in distance education. In D. Keegan (Ed.), *Theoretical principles of distance education* (pp. xx–xx). London: Routledge.
- Braimoh, D. (2015). Education and the emerging issues of globalization, knowledge creation, access and improvement in developing countries: Let's conclude the struggle. Paper presented at the 2nd Distinguished Lecture and Stakeholders' Forum 2015, Distance Learning Centre, University of Ibadan, August 6–7, 2015.
- DiMaggio, P. J., & Powell, W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147–160.
- Dorsey, J. (1957). A communication model for administration. *Administrative Science Quarterly*, 11(3), 307–324.
- Holden, J., & Westfall, P. J. L. (2010). Instructional media selection for distance learning: Implications for blended learning, featuring an introduction to virtual worlds. United States Distance Learning Association (USDLA).



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- Holmberg, B. (2003). *Distance education in essence: An overview of theory and practice in the early twenty-first century* (2nd ed.). Oldenburg: Bibliotheks- und Informationssystem der Universität Oldenburg.
- Holmberg, B. (2005). *The evolution, principles and practices of distance education*. Oldenburg: BIS-Verlag der Carl von Ossietzky Universität.
- Holmberg, B. (2008). *The evolution, principles and practices of distance education*. Oldenburg: BIS-Verlag der Carl von Ossietzky Universität.
- Jegede, O. (2003, February 28). Taking the distance out of higher education in 21st century Nigeria. Paper presented at the Convocation Ceremony and 10th Anniversary Celebration, Federal Polytechnic, Oko, Anambra State.
- Katzell, V., & Kahn, R. (1966). *The social psychology of organizations*. New York: John Wiley.
- Katzell, V., & Oscar, G. (1971). *The application of open systems theory and organizational development to higher education: A position*. National Laboratory for Higher Education, Mutual Plaza, Durham, NC.
- Keegan, D. (1996). *The foundations of distance education* (3rd ed.). London & New York: Routledge.
- Kishore, S. (1998). Student support and quality indication in distance learning. *Indian Journal of Open Learning*, 7(2), 205–209.
- Makhalina, O. M., Makhalin, V. N., & Yaroshchuk, A. B. (2020). Overview of perspective educational services of the “green” digital future: Online, lifelong and remote learning. In *Digital future: Economic growth, social adaptation, and technological perspectives* (pp. 291–299). Cham: Springer International Publishing.
- Meyer, H. D., & Schiller, K. (2013). Gauging the role of non-educational effects in large scale assessments: Socio-economics, culture, and PISA outcomes. In H. D. Meyer & A. Benavot (Eds.), *PISA, power and policy* (pp. xx–xx). Oxford: Symposium Books.
- Miller, A. (1970). *Escape: E-solutions for creative assessment in portfolio environment*. Technology Education Research Unit, Goldsmiths College, London.
- Muhammed, A. (2023). Pattern of electronic databases utilization by undergraduates in the study centres of National Open University of Nigeria. *Library and Information Perspectives and Research*, 5(2), 2672–5886.
- Ojokheta, K. O. (2000). *Analysis of selected predictors for motivating distance learners towards effective learning in some distance teaching institutions in Nigeria* [Unpublished doctoral dissertation]. University of Ibadan.
- Ojokheta, K. O. (2009). Rethinking successes in distance education: New directions for programme implementation in Nigeria. *International Journal of Literacy Education*, 6(1), 106–123.
- Olayinka, A. I. (2016). Vice-Chancellor’s address at the 2015/16 matriculation ceremony of the Distance Learning Centre, University of Ibadan.
- Osuji, U. S. A., & Salawu, I. O. (2006). Revitalization of our educational system through the open and distance learning mode. In M. Omolewa (Ed.), *African Journal of Historical Science in Education*, 2(1).
- Peters, O. (2000). Distance teaching and industrialized production: A comparative interpretation in outline. In D. Stewart, D. Keegan, & B. Holmberg (Eds.), *Distance education: International perspectives* (pp. xx–xx).
- Peters, O. (2009). The contribution of open and distance education to lifelong learning. In P. Jarvis (Ed.), *The Routledge international handbook of lifelong learning* (pp. 223–237). London: Routledge.
- Saliu, K. A. (2025). *Historical development of National Open University of Nigeria (2003–2023)*. (Unpublished Doctoral dissertation, University of Ilorin).
- Saidu, A. (2014). *Trends in the development of Nomadic Education in Nigeria: 1988–2011*. (Unpublished Doctoral dissertation, University of Ilorin)
- Scott, M. J. (2012). *Distance education literature review* [Master’s thesis, United States Military Academy, West Point, NY].
- Jaschik, S. (2010). The faculty and the fourth estate. *Academe*, 96*(5), 35–37. <https://www.aabri.com/manuscripts/10677.pdf>
- Youngman, L., Driscoll, M. P., & Nelson, D. W. (2004). The past, present and future of research in distance education: Results of a content analysis.
- Yusuf, M. O. (2006). Problems and prospects of open and distance education in Nigeria. *Turkish Online Journal of Distance Education*, 7(1), Article 2.
- Yuzhuo, C., & Johannes, M. (2015). The use of institutional theory in higher education research. In J. Huisman & M. Tight (Eds.), *Theory and method in higher education research III* (pp. 1–25). Bingley: Emerald. <https://www.researchgate.net/profile/Yuzhuo-Cai/publications>