



PERSPECTIVES ON...

## Adoption of Digital Preservation Methods for Theses in Nigerian Academic Libraries: Applications and Implications



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## ABSTRACT

Graduating students of higher institutions in Nigeria usually write and submit theses, as a requirement for the award of diplomas, undergraduate and postgraduate degrees. This paper examines the importance of students' theses to research, industrial and economic development of the nation and therefore advocates the need to preserve them. It discusses the intricate dimensions of the preservation of theses in academic libraries and notes the urgent need to address the worsening deteriorating state of students' theses in academic libraries in Nigeria. The paper also discusses the current traditional preservation methods practiced among academic libraries and observed that these methods are not adequate. It recommends that academic libraries in Nigeria should digitize theses and adopt the cloud computing preservation model through the operations of institutional repositories. The paper further identified digital divide and poor technological infrastructure, inadequate funding, data security breaches and issues revolving around copyright as challenges of digitization and cloud computing, and made recommendations.

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## INTRODUCTION

Academic Libraries exist to support their parent institutions in their teaching, learning and research functions. These libraries acquire, process and preserve information resources; in addition, they also provide access to information resources in their holdings. Student theses are among the important information resources stored in academic libraries.

The writing and submission of theses are essential requirements for the award of undergraduate and postgraduate degrees in academic institutions like Colleges of Education, Polytechnics, Universities and the like. Egonu (1999) posited that projects, theses and dissertations refer to bound copies of research reports produced for the award of a certificate, diploma, first degree, masters, or doctorate degrees. The names 'projects', 'theses' and 'dissertations' are used rather discriminately and can be virtually synonymous (Nweze, 2010). The word 'theses' as used in this study is the plural form of 'thesis' which is synonymous with student's project or dissertation. Nweze (2010) further asserted that thesis is the first expression of graduates' maturity and mastery in a field of study. Lang (2002) argued that a thesis should be publishable or a source of publishable material. Libraries collect and preserve copies of these works. According to Okoro (2003), the reason for procurement, preservation, and management of theses is that these unpublished

sources contain important information useful for economic, academic and research purposes. Johnson and Kallaus (1987) noted that these works are collected and preserved to assist departments in communicating with each other and the outside world, to provide a record of the past, and to supply data useful for legal purposes. In addition, students, scholars and researchers also consult them for study and reference purposes. Theses also contain vital research findings which are useful to industries and important sectors of the economy of a developing nation like Nigeria. Thus, they are important parts of an academic library collection which must be protected and preserved from deterioration for both current and future use.

Provision of adequate space and facilities to house and preserve theses is a herculean and assiduous task, especially as the collection grow larger. ACKCITY (2014) reports that Nigeria produces about 400,000 graduates annually, each of which should have written and submitted a thesis to his or her institution. This implies that Nigerian academic libraries receive about 400,000 theses annually. These materials by the nature of their loose bindings are prone to quick deterioration. In recognition of the usefulness of theses, academic libraries have always evolved techniques and strategies from time to time to preserve them from deterioration. However these preservation techniques have proved inadequate as the collection increases in number (Kiondo, 2004). This informs the rationale for special emphasis on theses in this paper.

## LITERATURE REVIEW

Deterioration of important information resources including theses has been a source of concern to libraries globally and a phenomenon

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to which they must always respond if their objective of meeting the information needs of users must be achieved. Information resources in many academic libraries in Nigeria are stored under very poor environmental conditions (Olatokun, 2008). Consequently, vital information meant to be kept for posterity has been routinely wiped out (Popoola, 2003). The negative impact of deterioration of theses on the education, research and economic sectors of any nation cannot be overemphasized. Vital information needed for the transformation of these important sectors of the nation may be lost (Adebayo, 2012). Deterioration of theses begins as a result of natural aging process and other factors such as poor storage environment, activities of biological agents, improper handling and chemical composition of the materials with which they are made (Edhebe, 2004).

In librarianship, preservation is the process through which deterioration of library materials is curtailed. Eden (1998) defined preservation as 'all managerial, technical and financial considerations applied to retard deterioration and extend the useful life of (collection) materials to ensure their continued availability'. Over the years, libraries have adopted preservative measures based on location and environmental factors (Olatokun, 2008; Popoola, 2003). Library collections are always on the increase as more and more information resources are acquired. Collections of theses in academic libraries grow larger annually as graduating students write and submit their theses to their libraries. As the collection grows larger, libraries invest huge amount of their meager budgets in preservation processes without achieving complete success (Sunil & Kumar, 2009). Kiondo (2004) observed that the methods and techniques practiced by academic libraries in Africa (Nigeria inclusive) for the preservation of theses are inadequate and inefficient. There is therefore an urgent need to review current preservation practices, with a view to adopting better and sustainable methods and techniques. Njeze (2012) noted that Nigerian academic libraries need to deploy better ways of preserving information resources, in order to attain the same height with their counterparts in the developed world. UK Theses Digitisation Project (2009), among others, has shown that theses can be better preserved through digitization. The project which involved a group of University libraries and the British Library had successfully digitized about 10,000 theses in June, 2009 and new theses are added on a continuous basis. Few academic libraries in Nigeria have attempted some forms of ICT based preservation techniques with little or no success, due to incessant challenges which they could not resolve. For example, the University of Nigeria, Nsukka has made attempts to digitize its institutional research output with little success, due to poor electricity supply and inadequate qualified manpower (Ezeani & Ezema, 2011). However, Ezeani and Ezema (2011) concluded that with the provision of necessary infrastructure, digitization of theses can be successfully implemented in Nigerian libraries.

#### DETERIORATING NATURE OF THESES

The nature of the materials with which theses are made, fastens their deterioration process. The constituents of these materials include paper, card board, ink, adhesives, and leather. The pages of theses are loosely bound by local bookbinders who have little or no professional training. The type of paper used in the binding process is very low in archival quality. The paper is made using ground wood fibers, which retains impurities like resins, tannin and lignin. Lignin accelerates acidic reactions, when exposed to heat, light, high humidity, or atmospheric pollutants. This causes the pages of theses to become brittle and deteriorate quickly. Adverse environmental conditions are the root causes of deterioration of theses. The environmental conditions of sub-Saharan Africa in general and Nigeria in particular are primary factors that aid deterioration of theses. The most important factors in environmental control are humidity, temperature and light; others include dust and air pollution (Ifjeh, 2012). Mahapatra and Chakrabarti (2003) outlined

the following as the physical and chemical causes of deterioration of print materials (including theses):

- natural aging of paper, since most of its constituents are organic in nature.
- oxidizing agents present in the constituents of papers.
- alkalis used in the manufacture of paper, which encourages the growth of fungi.
- dust particles discolor paper, invite chemical impurities and accelerate biological growth.
- heat and exposure to light make paper brittle and fade in color.

Library staff and users who mishandle theses also contribute to the degeneration of the materials. Pests like rodents which feed on papers can be classified as agents of deterioration.

#### CURRENT ORGANIZATION, STORAGE AND PRESERVATION METHODS IN NIGERIA

Nweze (2010) reported that most academic libraries in Nigeria keep their theses in designated storage rooms. The names given to such rooms vary from library to library. However, 'Project Room' appears most common. Some libraries keep theses along with other important information resources in their 'reserve sections'. The common characteristic of these storage rooms is that theses stored in them are kept in 'closed access'. This implies that patrons can only make use of these materials within the storage room. The theses are arranged on shelves, in accordance with their broad subject areas. They are neither classified nor catalogued, based on any known classification scheme. Some libraries create indexes to the content of theses in order to facilitate access.

Preservation methods adopted are based on location, weather and environment. Air conditioners are installed in the rooms to control temperature and humidity. Fire outbreak may be prevented by banning smoking in the library, while inflammable articles like fuels and waste papers are kept outside. Electric wirings are enclosed in metal conduits to reduce the effects of sparks and fire extinguishers are installed at strategic points. Paraprofessionals are trained to help users in handling the materials so as to minimize damage to them. Theses which are infected by fungi and other microorganisms are fumigated with recommended chemicals (mostly pure reagents). Fumigation is also used in the control of pests and insects. When materials are physically damaged, they are sent to the bindery for repairs. Some libraries also use vacuum cleaners to clear off dust from the materials periodically.

As earlier stated, the current preservation methods have their limitations. One of the major limitations is that for the theses to remain preserved, these methods would have to be repeated over and over again. The boring and monotonous nature of these preservation methods has promoted neglect and total abandonment of theses over the years. Another limitation is the inadequacy of storage facilities. As more theses are received every year, the problem of space for storage becomes inevitable. Consequently, as new theses are received, the older ones are removed from the shelves to create space for the new. Unfortunately, the old theses become inaccessible, neglected and damaged. In a bid to overcome this problem, some libraries receive only postgraduate students' theses, exempting those of the undergraduate students (Nweze, 2010). Except appropriate measures are taken, the storage conditions of theses will continue to degenerate. Expectedly, vital information and research findings will be lost.

#### INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) AND PRESERVATION: WHAT ROLE?

The advent of information and communication technology (ICT) has revolutionized library operations. Information and communication technology has made significant impact on all library services. The *International Encyclopedia of Library and Information Science* (2003) defined information communication technology as the application of

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