Deterioration of Library Materials in Nigeria: Causes and Remedies for Librarians

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ABSTRACT

It is true that deterioration is as old as librarianship. It is also no longer news that as soon as an item is manufactured it also starts to depreciate so also printing materials. If this concept is known should librarians fold their arms watching their valuables destroyed? This paper takes a cursory look at causes of deterioration of library materials. It also discusses the concepts of deterioration to the library, librarianship and librarians. The paper argues that some of the causes include lack of environmental sanitation of library surroundings, lack of trained preservators, faulty storage and book arrangement on the shelves, the library illumination etc. The paper calls for collective responsibilities in order to rescue the library materials by abiding with library hygiene, the use of air conditioners to control reading room temperature, good ventilation, the use of right insecticides and the use of incandescent light that is least destructive. Window blinds and plastic coatings can be used to control direct sunlight. Training of the staff on books shelving is also advocated .Upon the whole the paper says "prevention is better than cure" Deterioration can be reduced to the barest minimum if it is nipped in the bud before it becomes uncontrollable.
Keywords: *Deterioration, library materials, librarianship, books shelves*

INTRODUCTION

Deterioration is a state of depreciation in value or in quality. Therefore if this is applied to library materials it is known to be a state in which library materials in a state of depreciating in value as well as in quality. Deterioration begins the very day a material is invented or a book is published. The history of books or library materials deterioration is as old as the history of books invention. Deterioration in library concept is a complex subject considering different materials used in making of prints and non-prints materials in the library. Deterioration occurs due to natural causes for example moisture, dryness, acid, alkalis, dust, heat, cold and ultra-violet radiation. It can also due to chemical reactions used on these materials. Also it can be biological as in insects, bacteria, fungi etc.

Generally deterioration can be classified into physical, chemical, biological and environmental factors. Arogundade (1984) as cited in Madu and Adeniran (2005) sees deterioration as degeneration, decaying or aging of materials. While Madu and Adeniran (2005) opine that different materials have been used as writing surfaces through ages with the exception of stones and metals and all these are susceptible to deteriorating factors. They further highlight that clay is to worms, papyrus to insects and moisture, bark, wood and palm leaves to termites and other insects, leather and linen to rat and clamp and finally

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paper to light, acidity, moisture, insects etc. Library materials can also experience deterioration due to climatic factors, internal degradation, catastrophes, improper handling, poorly designed storage areas, use of untested materials which have done more harms than good to documents and to crown it all lack of trained staff. This is known as advanced state of deterioration as express by Madu and Adeniran (2005).

Causes of Deterioration: Materials deterioration is as old as library itself as earlier stated above it started when writing started, to more specific it started with the invention of books therefore it is not new. According to Madu and Adeniran (2005), everything in library collections is deteriorating today, was deteriorating yesterday and will continue to deteriorate tomorrow although wrought to retard the process. There are a lot of conditions that can make library materials to deteriorate. It is possible for two copies of a book to deteriorate at different times; this could depend on the handling, storage condition. No wonder an Emperor as early as 12th century declared the prohibition of the use of paper because he had a phobia that "it was too perishable". The primary assignment of librarians is dissemination of information and before this can be achieved conscious efforts must be made to preserve books and other library materials.

Going by the objectives of the library, a library is established to preserve and conserve materials acquired in usable conditions for posterity. The library preserves our thoughts, intellectuals, artistic creations and man's historical records for the upcoming generation. Aguolu (1983) stresses the importance of preservation of library materials when he says that "the universities and indeed all types of libraries have an important role to play in the preservation of oral traditions which constitute available sources for the reconstruction of the past especially in historical, biographical, literary and anthropological studies. So we can pave for a better future and improve past achievement". Deducing from the above it is high time for librarians to take the issue of deterioration seriously bearing in mind that it is the primary duty of librarians to preserve library materials. As earlier highlighted, library materials are deteriorated through so many factors like physical, environmental, biological, chemicals etc. The cost to cure at times could be much more expensive than when it is prevented. Deterioration can also be caused by common enemies of libraries, librarians and information materials which can be classified into people, air, light and darkness, heat, moisture, insect, rodents, fungi and acid.

Acidity: The quality of any paper depends on acidity content used in the production of the particular paper. Since the middle of 19th century the production of paper ingredients include ground wood pulp and it contains lignin and other complex organic compounds that break down into acidic components. Acidic contents of papers can cause deterioration and decay and during manufacturing of paper the additives introduced further cause deterioration and structural integrity of wood pulps. By 1840, the addition of alum to the paper production so as to make it handy and keep paper from absorbing ink and the use of sulphuric acid started weaken the molecular structure of the cellulose in the paper thus making it brittle.

Generally, books deterioration is of two major sources: chemical composition in which the paper is produced, glues, and other elements of construction. Secondly is environmental condition in which the books are subjected to. But the greatest deterioration effect on books is the level of acidity found in paper manufacturing. Mass production method of paper can also cause books deterioration. The tradition materials of production of papers were rags, cotton, linen and strong fibers. These were on the stable medium in the 11th century around 1940-1980 even before the middle of 19th century, but during the early part of 19th century when there was high demand of the strength started coming down by using wood pulp and chemicals.

Deterioration also occurs in paper made from mechanically ground wood pulp. The rate of deterioration in such paper is very high because, the cellulose fibers in it are shortened and their capacity to bond together reduced during manufacturing processes. This therefore results to weak papers productions that stand the risk of decaying easily. It is obvious that library collections are deteriorating today was deteriorated yesterday and will continue to deteriorate tomorrow but conscious efforts must be made to reduce it to the barest minimum. An author once wrote that "a library materials lost through any agent of deterioration is just like the death of an old man in the family"

Another agent of books deterioration is people. Human beings are mostly to be found guilty when it comes to books deterioration. Ranging from handling, to the use of dangerous chemical, photocopy, lamination, improper storage and other synthetic adhesives, books mutilation, back folding of books defacing books etc. If care is not taken to educate the users of books a lot of damages will be done to books and these can also affect the loss of information and the society will stand the great risk of losing its valuable and profitable written heritage.

Light and Darkness: These twins have insidious effect on library materials. Prolonged exposure to ultra violet light causes paper to brittle and loses its strength (Madu and Adeniran, 2005). High temperature, relative humidity and the presence of air pollutants make light to have a great effect on paper. Fading is the effect of light on paper. This is traced to the use of fluorescent light and the effect of direct sunlight. Flourescent lights though provide more illumination, emits quantities of ultra violet radiation than the use of bulbs in the libraries and they are least destructible than flourescent light. Light discolours make books to fade. Akussah (2006) says that paper documents, over time, get discoloured as a result of the interplay of several factors. He further agrees that the reaction is caused if lignin is found to be present in the paper. Discolouration changes papers from its original colour to brown or yellow and this reduces the legibility and makes reproduction difficult. Sun emits ultraviolet and blue violet rays which cause paper deterioration. Burchberg (1983) declares that certain portions of the light spectrum are more injurious than others but the blue violet light is the most deleterious. It is therefore pertinent to filter ultra violet rays from the domestic light in the libraries and resources learning centres so as to hinder rapid deterioration of information materials.

Insects and Other Animals: Several studies have shown that the extent in which insects and animals damage library materials cannot be under estimated. The effect of these creatures can cause serious damage to library resources. However, the major insects to take guide against are: Termites, Cockroaches, Book worms and Silver fish. Animals and pests that are dangerous to the library materials and its environs include Rats, Lizards, Rodents, Bats and Snakes. Termites are highly injurious to library materials. They can eat up books and wooden furniture. Their effect may not be visible. They are silent destroyers. Cockroaches feed on adhesives and glues used to bind books and consequently this process damages books. Also the dark liquid emits from cockroaches also damages books. Book worms and silverfish perforate pages of books thereby destroying information on the pages of books. The activities of Rats and Rodents could be nauseating. They can build nests inside books and outside the shelves. Their wastes also constitute nuisance to the library reading rooms and environments. They eat up and tear books. Lizards, Snakes and Bats have no hazardous effects on books but they can cause distractions and commotion in the library. Snakes make the library environment unsafe for both the users and the staff of the library.

HANDLING OF BOOKS BY LIBRARY USERS

Poor handling of books by users can also cause deterioration. This span through mutilation like ripping off pages, scribbling on books, staining to folding the edges towards handling library materials make for rapid deterioration. The climatic conditions such as temperature, relative humidity, rainfall, wind direction, and sunshine promote the growth of biological substances which deteriorate information resource materials. Nwokedi and Nedosa (1999) carried out investigation on micro organisms associated with the deterioration of library materials in Jos, Nigeria and its environs. The investigation reveals that the presence of Bacillus sp, Lactobacillus sp and micro-organism depend mostly on the temperature and the environment. Bad shelving of books also brings about books deterioration. If books are too tightly shelved it can cause damages. When books are forced against book ends, it will make the paper to rip-off.

Temperature also has deteriorated effect on library materials. Each material in the library responds differently to heat or high humidity. If temperature is high it can speed up the rate at which chemical reactions take place thereby causing the rate at deterioration to increase in the library resource materials. Avery good example is the decorative action of acid hydrolysis on paper. Unomah (1988) asserts that the greatest single factor of deterioration of library materials in Nigeria is high temperature and humidity. As the rate of chemical activity increases, thus the rate of at which paper deterioration doubles says Thomas (1987).

Relative humidity is the rate of water in a volume of air expressed as a percentage of the maximum amount the air could hold at the same temperature, the warmer the air, the more moisture it is capable of holding. The increase in relative humidity causes paper deterioration, also at the same time if it is too low it poses a danger for paper based information materials in the library. If the relative humidity is below 45% the paper gets brittle.

CONCLUSION AND RECOMMENDATIONS

It is no longer news that librarians are aware of deterioration. Deterioration comes with the advent of paper making when the libraries and writing started. It is a common knowledge that as long as we have libraries all these agents of deterioration will still lives along side with the libraries. What then is the next line of actions to rescue our materials? Alegbeleye (1996) recommends that for library materials that are still in good condition should be well stored in an environment in which both temperature and humid levels are controlled. He therefore recommends the installation of air-conditioners in the library as the most efficient and effective method of storage. There should be an improvement in our environment. Library environment calls for hygienic condition, and this should be monitored and sustained. For a library to be free from insects, fumigation should be done quarterly. This could be done on weekends, when people would be away for the weekends.

The use of chemicals like Hydrogen Cynanide, Carbon Disulhide or Methyl Bromide is recommended. For these chemicals have been tested and they are found to be alright to eradicate pests and insect in the library as it was done in the Universities of Ibadan and Ghana to checkmate books deterioration. To control dust effects on library materials, it is recommended that the library should be well ventilated and installation of air conditioners can step down the effect of dust. The effect of climate and weather deterioration on library materials can be reduced drastically if library temperature is kept low .Temperature between 60% - 75% and relative humidity between 50% - 60% are ideal for books preservation. Vemer ,(1968) "Air admitted to libraries and information centres should be free from contaminated aerosols and noxious gases to minimize the chemicals deterioration of such invaluables". While Thompson (1965) opines that the most practical way to control temperature at the same time clean the air is by central air conditioning. He further gives four functions of air-conditioning: (i) ventilation, (ii) filtration, (iii) temperature control, and (iv) humidity control

Light is good in the library for it gives illumination but library materials are light sensitive. Photosensitized deterioration occurs in the ultra violet and low visible light range. Both the ultra violet and visible lights can cause paper discolouration and fading to library and information resources materials. While incandescent light is less destructive, artificial light takes a little longer to degrade tinted glass, plastic coatings can be used to control direct sun light. Alegbeleye (1996) stresses that positive effects of climate control on libraries is worth investing on. Though this climate control is undramatic in the short run but is significant in the long run. Alegbeleye also advocates that it will be a good thing if there is a Preservation Librarian and Officer in the staff of the library. The job description and responsibilities will include care of library materials. This thought is quite laudable for if you want your job to be done at do it yourself. The inclusion of a Library Preservator will go a long way to minimize materials deterioration in the library. This will not only cut the cost of replacing materials but will also enhance our effectiveness and efficiency. Members of library that are shelving and shelf-reading books should be well orientated about the danger of tight shelving books.

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