THE LIBRARIAN AS INFORMATION SCIENTIST: A COMPARATIVE REVIEW OF OPINIONS AND CONSTRUCTS.

By

Rosemary ODIACHI. Ph.D, CLN.
Benson Idahosa University, Library
Benin City, Nigeria
08064402336
romaodiachi@gmail.com

&

Enite A. URHEFE-OKOTIE. Ph.D, CLN.
Fed. University of Petroleum Resoures Effurun,
Delta State, Nigeria.
07069731683
anitaurhefe@yahoo.com

ABSTRACT

The salient contestation of the professional to be addressed as (an) "information scientist" and the place of a "Librarian" in this global dispensation is a motivating ideology for this article. The article ontologically drew inferences from past and present opinions of authorities as regards the constructs/ variables of the topic. Systematic Literature Review (SLR) research method was adopted for the study. The paper justified the place of librarian as the (an) "information scientist" as it comparatively analyzed the training curricular, functions, services, attitudes etc. of the librarian in tandem to other professions in the information management environment.

Key Words: Librarian, Information scientist, Information centers, Library, Professionals, Information and Communication Technology.

INTRODUCTION

Managing information is an act, a process and a science that entails the fusion of series of independent activities aimed at ensuring the ultimate satisfaction of the information manager and consumers/users of information. To manage information requires the ability of the individual(s) saddled with such responsibility to discern the needed/ required information, source of the information, quality of the information, methods of preserving/ storing the information, mediums of storing the information etc. Remarkably, and of great interest is that all actors in the information associated profession such as mass communications, journalism, information and communication technologists, library and information scientist etc. arrogate themselves the appellation of being information scientists. Though they may have characteristics of being an information scientist due to some taught course in their learning curriculums, but practically, the paper is situating that there exists visible dichotomy from the practices of an information scientist and others.

THE INFORMATION SCIENTIST.

Information scientists are those professionals who are guided by information policies in carrying out assigned duties and responsibilities. This group of professionals considers:

1. Information resources acquisition policies,
2. Information resource processing policies,
3. Information resources handling policies,
4. Information resources retrieval and dissemination policies, and
5. Information resources use policies.

Information scientists deal with the database of knowledge available at any given organization and make sure that this information is accessible to the people that need to get hold of it at any given time. In the words of Okpokwasilli (2008), in what it takes to be an information scientist "courses that are necessary to be taken are gathering and evaluating information, systems analyzing, environmental information, behavior of information users, community organizations, information transfer, and basics of computerized retrieval systems" she further posited that students (intending information scientists) can get credit loads from working practically in information centers which will prepare them for their prospective carrier opportunities. Interestingly, Igberaese and Obinyan (2011) in duties and ethics of an information scientist summed that information scientists occupy positions of thrust and their duties require constant exercise of prudence out good judgment.

The convergence of information and telecommunication facilities and its novel application in libraries by librarians, in conjunction to the radicalization of library school curriculums all over the world in the later 20th and present century have properly re-defined the role and practices of librarians and the library as an institution. On its part, librarianship as a profession has transformed from manual (process) to an automatic (technology) driven processes, hence librarians presently apply convergent technologies (Information and Communication Technologies) such as cloud technologies, big data

applications etc, in rendering services to clientless and performing assigned tasks. Ontologically, the inter-marriage of new technologies, techniques and practices and previous manual practices of librarians in libraries such as cataloging and classification, book finishing, charging and discharging of information resources, stock taking, weeding, selective dissemination of information (SDI) services etc have heralded novel appellations such as library and information scientist, cybrarian, system librarian and electronic librarian.

JUSTIFICATION /PURPOSE FOR THIS PAPER.

The onus of the paper is to provide clarity to the following listed constructs:

1) Who are Librarians and an Information scientist?
2) Are Library Educator (Teachers in library schools), an Information scientist?
3) Can the individual with certification in computer science, mass communication (journalist), information and communication technologists, library and information scientists be called an information scientists?

In a study embarked upon, " the librarian and information scientists" by Aharony (2006), the findings indicated that the perception of 118 undergraduate information science students perceived manual library functions similarly to a librarian, whereas they regarded library tasks associated with ICTs as functions performed by information scientists. The study further stated that the student's thoughts that information scientists are better placed in the society. Attempt at justifying who the information scientist is amongst array of information professionals is key enthusiasm for the opinion paper given the fact that all information professionals in various forums situate themselves as the information scientist. In line with the above views, the writer will be examining and corroborating literatures with opinions in a bid to situate the discipline/ profession that is the information scientist

METHODOLOGY

The article adopted the Systematic Review of Literature (SLR) as a study method. This method enabled the researcher to diligently revise past and present literatures relating to the key variable or concepts of the study in relation to the practice of librarianship as a profession. In the words of Patti and Lorusso (2017) SLR is a systematic way of collecting, critically evaluating, integrating and presenting findings from across multiple research studies on a research question or topic of interest.

REVIEW OF LITERATURES RELATED TO THE CONCEPTS OF INFORMATION SCIENCE, INFORMATION SCIENTISTS AND LIBRARIAN.

The concept "information scientists" evolved from the use of the term "information" and "information science". Incidentally, some authorities view information as the outcome of processed data/ by-product of formatted data, and information science as the science that investigates the attributes of information. Foremost authority, Bork (1968) posits that information science is that science which investigates the properties and behavior of information, the forces governing the flow of information and the means of

processing information for optimum "accessibility and usability". Information science as that which is concerned with the body of knowledge relating to the origination, organization, storage, retrieval, interpretation and utilization of information. However, Williams (1988) Conceptualized Information Science as that discipline that brings together and uses the theories, principles, techniques and technologies of different disciplines towards solving of information problems. She further identified these disciplines to include computer science, cognitive science, psychology, mathematics, logic, information theory, electronics, communications, linguistics, economics, classification science, systems science, library science and management science.

The views as posited in the literatures above Borko (1968) and Williams (1988), buttressed further the professional objectives and roles of a library and librarians. Thus, making it a misplaced theorem to posit disciplines such as mathematics, engineering, psychology, computer science, technologists, e.t.c as information scientist. Although there is a school of thought that librarians while processing information uses skills and knowledge of other disciplines.

Interestingly, Saracevic (2009), posited information science which is a core in librarianship as a profession as the science and practice dealing with the effective collection, storage, retrieval and use of information interestingly, librarians function in line with that definition above, locate, select, acquire processes, store, retrieve and disseminate information to the library clientless, using both manual and virtual techniques and tools. Arguably, the novel antecedent of ICT availability and use in libraries have projected librarians further than expected into the information business environment. Hence librarians presently are entangled in a beautiful web of new appellations and applications such as digital librarian, e-librarian, library and information science e.t.c, with the later, (library and information science) further justifying the librarians claim to the appellation "information scientist". Interestingly, the affinity of information science and librarianship as a profession and practice Reitz (2018) in the Online Dictionary for Library and Information Science (ODLIS) described information science as the systemic study and analysis of the sources, development, collection, organization, dissemination, evaluation, use and management of information in all its forms, including the channels. Similarly the New World Encyclopedia (2015) described information science (also information studies) as an inter-disciplinary science primarily concerned with the collection, classification, manipulation, storage, retrieval and dissemination of information. Objectively, in light of the preceding depiction of information science, the paper provides reasoning to support the notion that individuals engaged in librarianship should be regarded as professionals who have emerged from the educational pursuit of library and information science, assuming the role of information scientists. This perspective emphasizes that the field of librarianship has undergone a transformation and has become more aligned with the principles and practices encompassed within the discipline of library and information science. The paper argues that the knowledge and skills acquired through this specialized course of study are essential for practitioners to effectively fulfill their responsibilities as information scientists

in the evolving landscape of librarianship.

Librarians are radicalized information resource managers given the scenario that recent library school curriculums have been re-constructed to include novel theoretical and practical courses such as web site designs, internet search mechanism, introduction to information and communication technologies, library automation, digitization of library resources, online cataloguing and classification, modern trends in information, information theories and policies etc. Similarly, library services to its patrons have evolved to include online internet search services, Bibliography/indexing/abstracting services etc. These services are information services that cannot be rendered or carried out without being conversant with information architecture, policies, constructs, durability, nature of its consumer, channel/ mode of storage and transfer. Incidentally, as established from literatures, librarians (persons with trainings in library and information science) working in the various libraries are the "information scientists". Yan (2011) described an information scientist as one amongst other related activities develops alternate designs to resolve problems in input, storage and retrieval of information. Similarly, the information scientist also develops and designs methods and procedures for collecting, organizing, interpreting and retrieval of specific information from computer, utilizing knowledge of symbolic language and optical pattern recognition principles. It is fact that librarians study the concept and construct of information as a philosophy, the same information they effortlessly, select and manage using established tools and channels both manual and digital in a bed to ensure easy access and retrieval.

THE LIBRARIAN: CONCEPT AND PRACTICE.

Today librarians are faced with overwhelming challenges of how to create and provide access to relevant and needed information sources that will meet and satisfy the yearnings of its ever increasing community of users, who now request for on-time or real time information. These challenges are being tackled in libraries and by librarians occasioned by their use of novel technologies and skills. This cycle of a librarians function critically justifies the librarian as an "information system worker", hence an information scientist. Further buttressing the concept "librarian", Shonhe (2017) stated thus "These are professionals tasked with the mandate to manage information or documents throughout their life cycle". This meant individuals or a person who manages information resources from the time an information source is created to the time it is disposed or discarded.

LIBRARY AND INFORMATION SCIENCES AS TRANSDISCIPLINARY

LIS is an area (or profession) of research and practice that includes information generation, management, and usage. However, unlike other areas that are constrained by their subject matter, LIS is heavily reliant on the subject to provide context. LIS disciplines span from the humanities to the hard sciences, with varied degrees of form to content and experts to generalists. While non-LIS areas need subject matter knowledge, LIS is concerned with information in context. For example, most professionals and academics in a certain field are constrained in some way, such as topic matter. Doctors and attorneys, for example, specialize in the disciplines of medicine and law, respectively.

Although there may be some crossover with other subjects, experts generally keep within their respective areas of specialization. For example, doctors aiming to enhance medical technology may pursue bioengineering or computer programming, but geography would be of little value to them. LIS, on the other hand, is a transdisciplinary rather than a monodisciplinary field. The capacity of LIS to operate inside the informational boundaries of other domains contributes to the existence of such a diverse spectrum of professions, institutions, and applications. Libraries, archives, and museums (together known as LAMs) are just a few of the institutions linked with LIS, whereas academic communication, information architecture, and intellectual property are just a few of the topics addressed by the LIS community. The broad reach and applicability of information throughout various areas under a single umbrella is what distinguishes LIS as transdisciplinary.

LIBRARY AND INFORMATION SCIENCE AND SYSTEM THEORY

The fact that LIS is a trans-discipline is the fundamental reason why developing a single theory is challenging. There must be a theory that accommodates the inclusive aspect of a trans-discipline within the greater framework of information and its many components. Given the vast array of themes, disciplines, institutions, professions, and general specialties available in LIS, system theory encompasses these disparate epistemologies (Lee, 2017). This section will look at why system theory is important in the library and information sciences, as well as the benefits of LIS becoming more holistic. Finally, this presentation will take a quick look at how system theory may be used to drive the field of LIS. There are a few approaches to system theory that, although offering a framework for understanding some aspects of LIS, should be mentioned in order to explain why these theories cannot be applied to LIS as a whole. Two theories stand out among the LIS metatheories that take into account its transdisciplinary character. The first is cybernetics, a branch of system theory that is linked to LIS in that it covers communication between animals, man, and machines through regulatory controls. Ranulph (2013) noted that cybernetics is a theory that attempts to explain the more technical aspects of LIS-related human-computer interactions, such as the stock-flow dynamics of goods that enable a system to work. In other words, if system theory investigates inter-systems relationships, cybernetics investigates intra-systems theory.

Following that is Sren Brier's cyber semiotics, which not only incorporates system theory and cyber semiotics, but also semiotics (the study of signs/symbols) to build a theory that studies inter- and intra-systems connections with a special purpose towards cognition and communication. While this theory may be valuable in giving a framework for users or other thinking person's striving to comprehend their information environment/society, it is less appropriate in other technical or mechanically-driven LIS components such as ILS (integrated library systems) or cataloging.

THE ROLE OF INFORMATION SCIENTIST AND LIBRARIAN

An information scientist is someone who collects, selects, and organizes information and materials (Paul,

Rajesh, Chaterjee & Ghose, 2013). They provide a good scientific information dissemination system for content and data distribution using scientific methods and technology. Surprisingly, an information scientist is sometimes mistaken for an information technologist. The key distinction between them is that an information scientist is primarily concerned with technologies and information basics, whereas an information technologist is exclusively concerned with technologies and engineering elements. According to Paul, Rajesh, Chaterjee and Ghose (2013) noted that an information scientist is a scientist who studies information, data, knowledge, and other aspects using scientific procedures and mechanisms. In another meaning, an information scientist is a professional who collects, organizes, and manages information and other content using conventional knowledge organization techniques as well as modern technological gadgets such as: database, network devices, computer, nodes, switch and routers, search engine etc. While the traditional role of librarians is amongst other things, to acquire, evaluate, process, preserve and disseminate information to the public.

Furthermore, Obaseki (2017) identified roles played by the combination of this librarians to include; collaborate with all other professionals in other disciplines in ensuring a developmental society, interacting with library users and directing them on the use of the library, helping users in finding information by teaching them searching methods, safekeeping of users properties, continually fine-tune measures to be implemented to make information easily retrievable due to obvious information overload, provide important counsel on workable and wise policies and practices, dealing with sensitive people who are disabled and organization of training programmes for users. Olatunji and Adeboye (2017) assert that librarians are the key persons of service delivery and such serve as the primary contact with clients. They are key players in disseminating information. This implies that the library personnel have a crucial role to play in ensuring quality education in the university system. The functions of the librarians as stated by Okosu, Eruaga, Odiachi, and Idahosa (2018) involves selective information transmission, classification and cataloging of library books and resources, and providing regular services to readers, such as simple reference and information. Other responsibilities include supervising and managing library stock, overseeing journals and other publications' circulation, indexing periodicals, and producing bibliographies and reading lists.

Consistently, Frederick (2022) believe that librarians need to strengthen their science related skill and knowledge and begin to promote themselves as information scientists, because we live in the information era, in which the advancement of information technology and communications networks is followed by a growth in knowledge and a quick flow of information.

CONCLUSION

The traditional fundamental abilities associated with librarians/information scientists, such as information management skills, training and facilitation skills, assessment skills, and customer care, are all still essential. Cataloguing, classification, indexing, inquiry work, and user education are all tasks that, if managed by librarians, will assist to make the Internet simpler to browse.

In conclusion, the topic of "The Librarian as an Information Scientist: A Comparative Review of Opinions and Constructs" explores the role of librarians in the context of information science. Through a comparative analysis of various opinions and constructs, the discussion sheds light on the evolving nature of librarianship and its intersection with information science.The review reveals that there are diverse perspectives on the librarian's role as an information scientist. Some argue that librarians are inherently information scientists due to their expertise in organizing, managing, and retrieving information. They possess a deep understanding of information resources and play a vital role in facilitating access to knowledge for users. Librarians employ scientific methods and techniques to categorize and classify information, making it more discoverable and usable. On the other hand, there are contrasting opinions that suggest librarianship and information science are distinct disciplines with different objectives. While librarians are skilled in information management, they may not necessarily engage in the scientific inquiry and research characteristic of information scientists. These viewpoints emphasize that librarians' primary focus is on user services, including reference assistance, collection development, and user education. Despite the varying perspectives, it is evident that librarians and information scientists share common ground in their commitment to effective information organization, dissemination, and user support. Librarians often incorporate principles and techniques from information science to enhance their practice and provide innovative services. They may leverage technologies, adopt metadata standards, or utilize data analysis methods to improve information access and retrieval. Moreover, the review highlights the evolving role of librarians in the digital age. With the proliferation of digital resources and advancements in technology, librarians are increasingly involved in managing electronic collections, developing digital repositories, and implementing information retrieval systems. This shift necessitates a broader skill set that encompasses both traditional library practices and emerging information science methodologies. In summary, the comparative review demonstrates that the librarian's role as an information scientist is a topic of ongoing debate. While there are differing opinions on the extent of overlap between the two fields, it is clear that librarians possess valuable skills and knowledge that align with the principles of information science. As the information landscape continues to evolve, librarians will continue to adapt and embrace new methodologies, strengthening their position as key contributors to the field of information science.

REFERENCES

Aharony, N (2006). The Librarian and the Information Scientist: Different Perceptions among Israeli Information Science Students. Library and Information Science Research, 28(2). 235-248.

Borko, H. (1968) information science: what is it? American documentation,17(3). Available at, http://assist.org/about/what-is-information-science/. Retrieved 12/3/2020.

Frederick, D.E.(2022). "Why librarians need to develop their information scientist identity in the age of COVID 19", *Library Hi Tech News*, https://doi.org/10.1108/LHTN-04-2021-112.

Igaberaese, D.E and Obinyan, G.A (2011) Duties and Ethics of Information Scientists. In Handbook of Research on Information and Communication Technology Policy "Trends, Issues and Advancement. IGI global. Pp.106- 120. Dol:10.4018/ 978-1-61520-847-0.ch008. Available at https://www.igi-global.com.

Information Scientist (n.d). Job Description and Jobs. Available at, http://doi-job-descriptions.careerplanner.com/INFORMATION-SCIENTIST.efm

Information Scientist: Job Description. Available at, https://www.allaboutcarreers.com/careers/job-profile/information-scientist.

Lee, H. (2017). The Importance of the Intersection of Library and Information Sciences with System Theory. *Journal of Critical Library and Information Studies,* 1 (1). DOI: 10.24242/jclis.v1i1.23.

Leigh S. E. (2010). "Library and Information Science," in *Encyclopedia of Library and Information Sciences*, 3rd ed. CRC Press :Boca Raton, http://www.tandfonline.com/doi/abs/10.1081/E-ELIS3-120044044.

New world encyclopedia (2015) Information Science. Available at, https://newworldencyclopedia.org/entry/information_science. Retrieved 3/12/2020.

Obaseki, T. I. (2017). *Essentials of the library profession in the new century: The mystifying librarian role and opportunities in the 21st Century*. Ekpoma:Uyi Printing Press.

Okpowasili, N.P. (2008) What it takes to be an Information Scientist. Journal of Vocational Science and Educational Development, 8(1). Pp.25-32. Available at, https://www.reseaechgate.net/publication/275349428.

Okosun, H. E., Eruanga, C., Odiachi, R. A. & Idahosa, M. E. (2019). *An introduction to the use of the library, study skills, and information communication technology (ICT)*. Benin City, Nigeria: Folasmark.

Patti, D and Lorusso, L.N (2017). How to Write a Systematic Review of Literature. Health Environments Research and Design Journal 11(1). Available at, http://www.doi.org/10.1177/193758.6717747384

Paul, P.K; Rajesh, R; Chaterjee, D & Ghose.M (2013). Information scientist: technological and managerial skill requirement in 21st century: an overview. *Indian Journal of Information Science & Application*, 19 (1). Pp. 29-36.

Reitz, J.M.(2018) Information Science. Online Dictionary for Library and Information Science (ODLIS). Available at, https://products-abc-clio.com/ODLIS/odlis_about.aspx. Retrieved 3/12/2020.

Ranulph G. (2013). "Cybernetics: Thinking Through the Technology," in *Traditions of Systems Theory: Major Figures and Contemporary Developments*, ed. Darrell Arnold (New York: Routledge, 2013), 45–77.

Saracevic (2009) Information Science in M. J. Bates (ed). Encyclopedia of Library and Information Sciences (3rd ed). New york: Taylor and Francis. Pp.2570-2580. Available at, http://assist.org/about/what-is-information-science/ Retrieved 12/3/2020.

Shonhe , L (2017) A Literature Review of Information Dissemination Techniques in the 21st Century Era. Library Philosophy and Practice (e-journal). Available at, https://www.digitalcommons.unl.edu/libphiliprac./1731.

Wikipedia(N.D)Introduction Scientist. Available at, https://en.wikipedea.org/w/index.php?title=information_scientist&0ldid=937198910.

Williams, M.E. (1988) Defining Information Science and the Role of ASIS. Bulletin of the American Society of Information Science 14(2). Pp.17-19. Available at, http://asist.org/about/what-is-information-science/ Retrieved 12/3/2020.

Yan, X (2011) Information Science: Its past, Present and Future. Information(2). Pp.510-527. doi:10.3390/info2030510. Available at, www.mdpi.com/journal/information. Retrieved 3/12/2020.