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**The Interdisciplinary, Multidisciplinary and Transdisciplinary Natures of
Library and Information Science: An Analysis**

By

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Abstract

The term Library and Information Science (LIS) was borne out of the need to merge two closely related fields – Library Science (LS) and Information Science (IS) – that deal with the management and handling of information. This paper discusses the context of LIS by using the Crossing Path five (5) metrics of identifying interdisciplinary, multidisciplinary and transdisciplinary disciplines. It further argues that LIS is an interdisciplinary, multidisciplinary and transdisciplinary branch of knowledge because its theories and practices required learning from other areas, shares areas of common interest with other fields, have a range of disciplines working together, converges approaches from separate areas and has areas seen as inherently interdisciplinary. It concludes that LIS is a discipline which its domains are not limited to the realm of libraries, but extended to every academic field, centers, organizations, corporations, institutions that collect, generate, acquire, process, organize, store, preserve, retrieve, share, disseminate and utilize information in various formats and media and recommends that curricula in the field of LIS should be continuously and consistently reviewed, with the motive of incorporating new trends, themes, knowledge and practices that will equip students and practitioners in performing excellently in discharging their professional duties.

Keywords: Information, Information Handling, Information Management, Information Science, Interdisciplinary Field, Library Science, Library and Information Science, Multidisciplinary Field, Transdisciplinary Field.

Introduction

The ongoing debate on the nature and relevance of the LIS profession is dominating the information landscape. The debate is generating diverse and vast amount of opinions among individuals who feel that LIS profession is solely limited to the context of libraries alone. Although, in some quarters dominated by the learned individuals and experts in other fields, LIS is recognized as a profession that is all encompassing, versatile and flexible in nature to accommodate other professions that deals in the information landscape.

However, the LIS discipline is a profession, without any gainsaying, that is very complex in nature. This is because on one hand, one may think it is limited to libraries and their services alone, and on the other hand, if one is opportune to be aware of what it entails, one will know

that it overlaps beyond libraries, as its components, practices, activities and values it uphold transcend the domain of Librarianship alone.

Be as it may, it is easy for laymen to conclude that in its whole essence, LIS profession is about working in the libraries only. Nevertheless, is it not worrisome to note that some professionals in the field itself also find it difficult to identify and describe the context and scope their profession possesses? At least, in a simple term, professionals should be able to convince laymen that the profession they serve as its ambassador is one that offers them the opportunities to holistically explore information in its cycle, format and context.

Or by adopting another approach: Can't we acclaimed professionals or paraprofessionals orientate the confuse public by giving them a brief, separate definition or explanation of what Library Science (LS) and Information Science (IS) are, before exposing them to the interrelationships of and associations between the two disciplines, which make them to be suitable to operate together?

Putting this into the right context and perspectives can occur by describing library as a building, storehouse or reservoir of information in different formats; collected, organized, stored, disseminated and utilized to satisfy the information needs of the users. But IS is a discipline that deals with the efficient and effective management and handling of information resources in all forms, the factors influencing the information landscape and the necessity of controlling information to achieve desired results.

With the definitions of the two concepts given above, it is safe and tract to assert that while LS deals with information in libraries; IS deals with information in all ramifications, be it in its formats, stages and sources which library is part of. This extrapolation made Issa, as cited in Abowha (2019), to submit that Information Science is a bigger picture which Library Science is just a part of.

Thus, this paper will focus on explaining the independent, distinctiveness and separate nature of both LS and IS, the familiarities they share that make them to be condensed and converged as one interdependent discipline – Library and Information Science – and the qualities that make them to fit into the realm of interdisciplinary, transdisciplinary and multidisciplinary field.

Statement of the Problem

Library and Information Science is one of the professions that have been ever-relevant from the evolution of man and will continue to be an ever-present, important component of social development and progression, as long as information maintains its status as the most important factor of production, problem solving and decision making. However, there is a growing misconception among the populace about the relevance, scope and context of LIS, which has made the populace to see LIS within the precinct of Librarianship alone. This notion among the populace becomes a misnomer to the operational, functional and structural purview of LIS, which this paper intends to address.

Objectives of the Paper

This paper is written with the following objectives:

1. To correct the perception that LIS profession is only limited to working in the Libraries,
2. To reveal the depth and breadth of the values integrating IS to LS has added to the LIS domain,
3. To use the Crossing Path (2016) Report Indicators by the British Academy to analyze the Interdisciplinary, Multidisciplinary and Transdisciplinary Natures of LIS,
4. To advocate for qualitative services that align with professional standards expected of LIS professionals in the contemporary times.

Nomenclature of Library Science (LS)

Before we provide what LS is in details, it is good to give a brief description of its evolution and some terms like Library, Librarian. Scholars have posited that Library is derived from the Latin word "Liber," which means books. They affirmed that Library is a building that houses books and other information resources collected, organized, preserved, maintained and used to serve the reading, referencing, recreation and research purposes of the users.

In the same vein, Reitz (2004), define Librarian as a professionally trained person responsible for the care of a library and its contents, including the selection, processing and organization of materials and the delivery of information, instruction, and loan services to meet the needs of its users, while LS is seen as the profession devoted to applying theory and technology to the

creation, selection, organization, management, preservation, dissemination and utilization of collection of information in all formats (Reitz, 2004) in Libraries. Imeremba (2000) also argued that LS is a profession that emerged from library practice...library as a social element responsible for the collection and preservation of the records of human culture from generation to generation.

This brief definition above, which is a paraphrasing of positions of different scholars who viewed Libraries, Librarian and Librarianship from the traditional perspective because contemporary Libraries are housing more than books due to the advancement in the information and communication technology. Though, scholars didn't deviated from describing Library as a repository of information where in it alone, all the cycle of information – generation, creation, origination, organization, storage, retrieval, dissemination and utilization – are practiced. But what their positions have emphasized is that Library, Librarian and Librarianship are concepts that are mostly applicable to the domain of LS, which is the study of theory and technology of creation, selection, organization, management, preservation, dissemination and utilization of collection of information in all formats in Libraries.

The first attempt all over the world, to propagate and formalize the growing popularity of LS was initiated by an American Librarian, Melvey Dewey, in the University of Columbus, in 1887 when he established the first-ever Library Science School. It was aimed at training and educating students on the norms and standards of library operations and services. The efforts served as the backbones that offered intellectual support to learning, research and the standardization of knowledge in the field of LS and subsequently paved the way for Library Science Schools in other continents and further facilitated the advancement of LS training beyond the undergraduate level initially initiated by Melvey Dewey.

The scope of LS can be best understood through the lens of the famous Indian Librarian, S.R. Ranganathan's Five Laws of Librarianship which postulated that:

1. Books are for use
2. Every book its users
3. Every user his/her book
4. Saves the time of the users

5. Library is a growing organism (Kolawole and Igwe, 2016a; Igwe, Saidu, Edam-Agbor, 2019).

It is important to stress that the Laws of Librarianship, which were formulated in the 1930s limited its postulations to the realm of libraries and Ranganathan couldn't be faulted for that because during the time when the theory was propounded, books were the major sources of information and were mostly housed by libraries because libraries have been an instrumental information dissemination institutions in the civilized nations as at that time.

It is, therefore, not right to conclude that Libraries and Librarianship are archaic concepts that may not fit into the realm of both the conventional and emerging information landscapes. Libraries and Librarianship are ever relevant and inevitable phenomena in the information ecology that will always be shaped by the nature of information media available to Librarians and the Librarians' impact will be felt by the quality of services rendered to the community of users they are meant to serve.

Nomenclature of Information Science (IS)

Information Science is sometimes synonymously used with Information Studies, Information Management and Informatics (Igwe, Sadiku and Edam-Agbor, 2019). IS is a dynamic and flexible discipline that encompasses all the information professions. As a dynamic discipline, it is a branch of knowledge, field of study or discipline that uses scientific knowledge to investigate the landscape of information, factors influencing the sharing of information and the process of exploiting the values of information; while as a flexible discipline, it is a branch of knowledge whose scope and breadth extend to all aspect of human knowledge.

According to Borko, as cited in Igwe, Sadiku and Edam-Agbor (2019), IS is a discipline that 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. It is a body of knowledge concerned with the origination, collection, organization, storage, retrieval, interpretation, transmission, and utilization of information (Reitz, 2004).

Saracevic (2009) also opined that IS is the science and practice dealing with the effective collection, storage, retrieval and use of information. It focuses on recordable information and

knowledge, and the technologies and related services that facilitate their management and use. Specifically, IS is a discipline of professional practice and scientific inquiry addressing the effective communication of information and information objects, particularly knowledge records, among humans in the context of social, organizational, and individual need for and use of information.

Uzuegbu (2019) also corroborated the positions of scholars on the broadness of IS when he posited that IS is a broad discipline whose variance in its definitions and interpretation has significantly shaped its scope and themes. At the moment, some obvious themes covered by IS, across disciplines, include: Human Computer Interaction, Groupware, the Semantic Web, Value-sensitive Design, Iterative Design Process and Information Generation and Use.

This is to infer that IS involved the analysis of information in all forms. It is a discipline that is concerned with how people of various classes generate, find and utilize information with or without the help of new technologies like computers and Internet. Thus, IS encapsulates fields such as Library Science, Data Science, Computer Science, Information Communication Technology, Archival Science, Mass Communication/Communication Studies, Publishing, Telecommunication Science, Records Management, Knowledge Management, etc.

The different fields inherent in the purview of IS make it difficult to attribute its evolution to a particular historical period, but to acknowledge the essence each discipline played in stabilizing IS' standards, through the methods, systems, procedures and practices they added to it. For example, the major scenario in the evolution of IS was recorded in the field of Publishing when the Royal Society of London published its "Philosophical Transactions" in 1665 (Kolawole and Igwe, 2016a) which happened to be the first academic journal ever published globally.

Another major landmark in the standardization of IS was in 1895, when the two Belgian bibliographers, Paul Otlet and Henry La Fontaine established the International Institute of Bibliography. This made it possible for scholars and practitioners alike in the field of information creation, generation, processing, dissemination and utilization to assemble under one umbrella and advocate for the propagation of IS as an academic discipline.

Qualities that Make Library and Information Science an Interdisciplinary, Multidisciplinary and Transdisciplinary Field

Interdisciplinary, multidisciplinary and transdisciplinary are tripartite articulation which without them, LIS is very difficult to define and explain. Hence, this paper considers it paramount to make a clear distinction of the three components and bridge their relevance in the pool of LIS practices, by using the five (5) metrics of identifying interdisciplinary, transdisciplinary and multidisciplinary fields as shared by Future Learn (2020).

But before doing that, let's delve briefly by discussing the fundamentals of interdisciplinary, multidisciplinary and transdisciplinary fields. Interdisciplinary means the art of sharing relationship between two or more disciplines. This happens when a discipline maintains a degree of connection with other disciplines. According to the British Academy (2016), interdisciplinary fields are disciplines that integrate insights, information and perspectives from more than one disciplinary standpoint. Interdisciplinary fields open up new sources, interfaces and methodologies beyond those found in a single discipline, they are disciplines whose one of their major features is that whether or not one discipline dominates them, they draw on information, ideas or methods from other disciplines.

Multidisciplinary standpoint of LIS can be viewed from the angle that the profession is concerned with multiple disciplines within its operational spectrum. LIS is multidisciplinary in nature because its practices, procedures, systems, methods, approaches and styles of creation, collection, organization, preservation, protection, retrieval, dissemination and utilization of information are not limited to the domain of Librarianship alone, but from other related fields like Computer Science, Archival Science, Records Management, Office Technology Management, etc.

LIS is also transdisciplinary because its themes, trends, situations and approaches notably involved where its goals cannot be accomplished within its disciplinary boundaries, unless it transcend its parent discipline. LIS is transdisciplinary because, as posited by the International Bureau of Education [IBE] (2021), its approach to curriculum integration dissolves the boundaries between the conventional disciplines and organizes teaching and learning around the construction of meaning in the context of real-world problems or themes.

As initially stated, interdisciplinary, multidisciplinary and transdisciplinary fields have five (5) major characteristics which are discussed below, as those characteristics affect LIS:

1. **Interdisciplinary, Multidisciplinary and Transdisciplinary Fields Learn from Other Areas:** Interdisciplinary, multidisciplinary and transdisciplinary fields don't exist in isolation because they evolved and designed to receive training and cultivate skills from other fields that are related to them. This is to say that the interdisciplinary, multidisciplinary and transdisciplinary nature of LIS revolved around acquiring knowledge from various disciplines to equip Librarians and Information Scientists on efficient information services delivery to all users, in their desired format. For instance, practitioners in the field of LIS go to the fields of Management to learn theories, procedures and practices on the management of Libraries and information centers.
2. **Interdisciplinary, Multidisciplinary and Transdisciplinary Fields Have Areas of Common Interest:** Interdisciplinary, multidisciplinary and transdisciplinary fields maintain areas of common interest to bridge their boundaries. This implies that LS's and IS's major area of common interest is information; the two fields are concerned with the identification, gathering, availability, processing, preservation, dissemination, distribution and utilization of information in all formats, information processing and handling institutions.
3. **Interdisciplinary, Multidisciplinary and Transdisciplinary Fields Are Range of Disciplines Working Together:** Interdisciplinary, multidisciplinary and transdisciplinary fields comprises number of disciplines that are concerned with theories, ideas and concepts that are incorporated to serve as one. LIS possesses this attribute because it works with Mass Communication, Communication Science, Law and other information professions to uphold the ethical standards and practices of the information field. A typical example of this assertion is the Ethics of the Information Profession. The conditions of the ethics are not limited to Librarians alone, but all other professionals that engage in the domain of information cycle.
4. **Interdisciplinary, Multidisciplinary and Transdisciplinary Fields Converge Approaches from Separate Areas:** LIS as an interdisciplinary, multidisciplinary and transdisciplinary field integrates theories and practices from other fields. For instance, Information Policy is an aspect of Law which is concerned with legal provisions

governing the cycle of the information landscape; Information Technology is a branch of Computer Technology, Knowledge Management is a sub-discipline to the field of Management, while Theory of Knowledge/Epistemology is a branch of Philosophy. However, all the subjects aforementioned are taught in the field of LIS to nurture the mind of both practicing and emerging library and information workers on the diversity and cross relationship of knowledge.

5. **Interdisciplinary, Multidisciplinary and Transdisciplinary Fields Have Areas Seen As Inherently Interdisciplinary:** Interdisciplinary, multidisciplinary and transdisciplinary fields are naturally related in scope and contexts. Library and Information Science falls in this category because there are some theories, themes and practices that are naturally ingrained and difficult to separate. A typical example of such theories and themes is Information Theory, Information Resources/Sources, etc. Information Theory is a concept that is inherently applicable to all branches of knowledge, because undoubtedly, every discipline uses information and it is the application of Information Theory that makes them exploit the values of information.

Nomenclature of Library and Information Science (LIS): A Review

The term LIS was borne out of the need to merge two closely related fields – Library Science and Information Science – that deal with the management and handling of information and the first institution to envisage that the nature and principles of handling and managing information must be transformed by merging the two disciplines was the University of Pittsburgh, Pennsylvania, who changed the title from LS to LIS in 1964. This set the ground for the application and integration of theories, principles and practices of information processing and handling from the domain of IS to libraries' and information centers' operations and services.

Library and Information Science is a discipline that is broad to be described in nature, both as an academic field and professional practice. It is a branch of academic disciplines that deals generally with the principles, skills, training and nurturing of both potential and practicing Librarians and Information Scientists in the organization, access, collection, and protection/regulation of information, whether in physical (e.g. art, legal proceedings) or digital forms (Bates and Maack, 2010) in libraries and other information managing institutions.

Kolawole and Igwe (2010a) explain LIS as a profession that is concerned with the application of theories, principles, technologies and knowledge of acquisition, organization, storage, preservation, retrieval and dissemination of information to information users in the society. It is a multidisciplinary, transdisciplinary and interdisciplinary field that offers both intellectual supports and lifeline to enhance the artistry, creativity and utility of information in other professions.

Library Science and IS are intersecting and closely related disciplines that deal primarily with the organization and retrieval of information in libraries, documentation and information centers. The application of the term IS to LS has aided the expansion of the scope, contexts, relevance, services and depth of Librarianship from managing and maintaining paper-based information in the libraries only, to also focus on other information formats and media housed in other information and documentation centers.

Aina (2013) argues that there is generally no distinction among LS and IS, just that they emerged in response to rapid social and technological development. This is to say that as the information environment of man is becoming complex, the LIS is designed to prepare both practicing and budding LIS professionals to cultivate the skills and competencies needed to meet the information needs of users in the format they desired.

Information Science extends the frontiers of LS by covering the scope of library without walls (Uzuegbu, 2019) and shifts libraries' services from "just in case to just in time," from the traditional angle to a contemporary one. IS brings to discussion and study, the necessary and related library services that go on outside the four walls of the library. For instance, prior to the emergence of LIS, what libraries were doing was to have information housed in them. However, since the integration of IS to LS, libraries and information centers have devised various systems and processes of making information available, accessible and delivered to users, with or without being physically present in the library.

Amongst the seven varied, distinct, but intertwined themes and scopes which IS is presently concerned as posited by Uzuegbu (2019), information generation and use constitute the LS' frame for discourse on IS. The author further argues that IS covers knowledge creation without which the library will have no collections to serve clients; deals with the provision of

information services, as against a focus on book collection; deals with several systems through which information is generated, stored, retrieved and disseminated.

Information Science aids LS in the identification of information users in libraries (and society); studies and facilitates the provision of specific information to different individuals, at different places and at the same time and studies users' behaviors and reactions towards information presented to them in varying forms, contexts and environment. LIS presently centers on how information resources are organized to serve the needs of selected user groups, how people interact with classification systems and technology and how information materials are acquired, evaluated and applied by people in and outside of libraries and information centers.

Conclusion

Library and Information Science is a discipline which its domains are not limited to the realm of libraries, but extended to every academic field, centers, organizations, corporations, institutions that collect, generate, acquire, process, organize, store, preserve, retrieve, share, disseminate and utilize information in various formats and media. It is a field of study that develops its strength and relevance to man's information environment by incorporating theories, principles, practices, technologies and knowledge from different disciplines, either because of their interrelationships or by entirely relinquishing its own domains and boundaries in order to gain insights, perspectives and information that will be beneficial to prudent, efficient and effective information management and handling in libraries, information and documentation institutions.

Recommendations

Based on the knowledge shared and insights gained from writing this paper, we hereby recommend that:

1. Librarians should always endeavor to cultivate the requisite, emerging information collection and handling skills, most especially those related to ICT, because doing so is what will attest to the fact that they worth being referred to as "Information Scientists," because of their incontrovertible roles disseminating information in this digital era.
2. There should be continuous and consistent review of curricula in the field of Library and Information Science, with the motive of incorporating new trends, themes, knowledge

and practices that will equip students and practitioners in performing excellently in discharging their professional duties.

3. Librarians and Information Scientists, through their various Associations and Institutions should always sensitize the populace on the paradigms of the Library and Information Science discipline and advocate for the employment of professionally trained Librarians and Information Scientists in all institutions housing information.

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