The Capability of Information Technology on Advance of Library and Information Science

Article · February 2022

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The Capability of Information Technology on Advance of Library and Information Science

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Abstract

Nowadays library and information science are the twin in which both have countless impact on technological innovation. Why researchers inspire to write this paper is, there is misinterpretation about this discipline. When discourse about the library, societies intention is about building and reading substantial inside. However, it covers qualified activities such, information organization, technology innovation, resource management, human skill building, infopreneur and participate on change of new information settings. Besides, information science is a multidisciplinary field, studies about in information behavior, information seeking, information organization, information retrieval, information literacy, information policy, information society, knowledge management, software design, information management and interacts other disciplinary fields such information systems, bibliometrics, computer science, statistics, psychology and others. The

objectives of the study, to realize evolutional change of library and information science, identify tasks of librarian and information science professional, to identify disciplines interrelated to library and information science and to create awareness on inspirations of library and information science. The study undergone through literature analysis methods and peer-reviewed. Results displayed library and information science are multi-disciplinary fields unified with diversity of valid philosophies and research approaches. Whereas, information technology is the knowledge domain enhance to librarians and information experts. Whatever, these disciplines have substantial to technology innovation, there is challenging issues on the area, such researchers have no permission on their research output as open access. If new investigator needs to do research on extent, no sufficient literature and still there is confusion about librarian profession around.

Keywords: Library, Information Science, Librarian, Information Expert and Information technology

Introduction

The 21st century is an era of information explosion that desires informatics discipline being as input of every scientific discipline around the globe. In each part of educational discipline needs information as resource. Library and information science are specialized activities of the collection disciplines, information organization, librarianship, archiving and records organization(Bawden & Robinson, 2016). Recently the prevalent value of information science in higher education has gone acceptance as a multidisciplinary field of study as worldwide. Its informative value, together as self-determining scientific discipline and as a cross-disciplinary offers new and meaningful ways to interpret the world around us and to approach problems. Thus, this review is concern on roles of widespread use of informatics socializing through computing knowledge. Nowadays extremely viable information economy are challenged with exponential rises of information that is accessible at the click of button on a desktop, laptop, tablet and smartphone, driven by new technologies are constantly evolving at a phenomenal rate (Kivunja, 2015). The technology involves generation of facts and processes to develop systems enhance to solve problems and extend human capabilities (Agbo, 2015). At present library professionals are becoming increasingly apparent, consequently, working inside the technological environment needed strong information technology skills which extended beyond expertise in use of automated library running systems for general housekeeping purposes (Ganapathi, 2018). Accordingly, through the perspective of Ganapathi (2018), the actual nature

and level of these informatics was less clear and specified us computing, and library services had been integrated. In those service area with strong information technology focus, distinctions between computing services and information services were starting to distortion, through library professionals tending to be deployed on basis of skills, rather than professionals' qualifications. The large scale digital libraries offer users opportunities to explore a vast amount of information using relatively uniform mechanisms, such as keyword-based or faceted searches (Bar-ilan et al., 2016). In contemporary the amount of research literature in the information science domain has rapidly increased and the discipline has been the subject of several studies in the previous, that aim primarily to uncover its structure and dynamics(Hou et al., 2018). Informatics is the study of natural and engineering as well as computational systems which includes the academic disciplines of computer science, software engineering, artificial intelligence and cognitive science (Rankin, 2018). As suggested by E.Saunders (2014), the term librarians have always expected that the skills required to use computers and skills needed to find and evaluate information are two separate sets of skills. But currently, librarians are someone who have multidisciplinary knowledge and who act as computer professional as well as information scientist. This library and information science is inter-disciplinary field of science, which interrelated with computer science, information system, statistics, psychology and others. The interdisciplinary nature of library and information science, as well as its volume for reconceptualization of traditional knowledge and skills areas in new technology-oriented procedures, presents epistemological chances to shift library and information sciences discipline in an extended or broadened disciplinary space (Raju, 2020). As a whole, the technology continues to transform libraries, it is critical to bear in mind the status of soft skills or the human component as plans move forward and new technologies are brought into ever-changing library atmosphere(Nelson, 2021). In the past librarians were seen as keepers and guardians of books and reading resources, that was defied on perception and affected the images of the library, since many people saw library as a room with stacks of books, where individuals mostly students who wanted to read beyond the scope that were taught in class found shelter (Omeiza, 2019).

Research Questions

To achieve the goal of this investigation, the following research questions under consideration:

RQ1: What is the recent evolution of information and library science and communities' awareness towards the discipline as global?

RQ2: Where is the profession area who graduate by library and information science?

RQ3: What are information science way of skills promotion for librarian?

RQ4: What are the roles of information technology on improving library and information science?

RQ5: What is the knowledge domain that interrelated to library and information science?

Study Objectives

To meet research questions, the study has integrated the following general and specific objectives:

General Objectives

The general objective of this inquiry is to analysis the skills and the knowledge domain of library and information science in widespread information Technology age.

Specific Objectives

In addition to the above general objective, the study has these specific objectives: -

- ➢ To understand the evolution and change of library and information science discipline through literature analysis.
- ➢ To identify the responsibilities of information technology professional on improving of library and information science.
- ➢ To identify the specific disciplines that interrelated to library and information science.
- ➢ To identify the working environment who graduate by library and information science
- ➢ To create awareness to users on impacts of library and information science on their life.

Statement of the Problem

That familiarity of the society behands library and information science up-to date reverting that needs critical thought. Nowadays the rapid growth and explosion of information is the preliminary point for information science as a discipline in the world. Nonetheless several confusing concepts still there about information science and library. Nowadays, in higher education as portion of information science as taught a discipline both in developed and as well as developing world, with a substantial body of techniques or methods, some theories and

international group of specialist science inspectors. from the numerous previous studies, together professionals and academics highlight the need to attract open-minded, innovative, creative, dynamic, flexible and visionary individuals in library and information science discipline (Khalili, 2020), and individuals with these characteristics started to able to lead the field into new directions and respond to the challenges. Beside it was twitch to model by repeatedly developing information landscape and subsequently determine the growth and success of the information field as a discipline. However, as suggested by Khalili (2020), the new arrivals in this landscape may never tolerate the title librarian or work in a traditional library. Instead, they act as the future information managers, who may perform a variety of roles in global corporations, for the government, or as consultants to small businesses. In addition, the arrival of the internet as well as correlated technological advances has transformed the nature of library and information services and fundamental changes of knowledge management has emerged as a further significant influence on library (Nazim & Mukherjee, 2016). Nowadays information explosion is very difficult to handle large quantities of information through outdated library tools similar as manual catalogue and bibliographies (Library & Vol, 2018). The extensive modification is rise with merging between conventionally different types of libraries in facilities offer and convergence comprises online access to digital resources, the re-tasking of library space, the need for staff skilled in virtual librarianship & collaborative learning, as well as supplementary customary types of service (York et al., 2020). Previously, there is misinterpretation, on library and information sciences, communities worldwide considered, this discipline is merely collection of reading resources inside the hall. In addition, in the past libraries have been accomplishment only responsibilities of collecting, managing, storing and disseminating various kinds of document inside hall. Nevertheless, the idea library and information science are multi-disciplinary field of study interconnected with many fields of disciplines. Thus, experts who graduated through this discipline can enjoy any profession, such as participate on research work, teaching, management and other work atmosphere. Thus, as suggested by York et al. (2020), the collections in library may have gone far past the tipping point among physical and virtual and libraries themselves will continue to evolve as community centers for both technology and intellectual pursuits. The main need for designing on library and information science education is the growing of thinking and methods in librarianship and there is the corresponding growing need for education in those disciplines (Jeklin, 2016). Over-all, now the library schools in industrialized countries have been revising the curriculum so frequently to meet the new challenges in the information world (Khan, 2016). On other hand, Lisbdnetwork (2018),

suggested due to impact of information technology, created challenges and opportunities for information professional everywhere the world, on library and information work.

1. Literature Review

There are dissimilar interpretations regarding library and information science through various societies of the globe. However, library and information science are the contemporary innovation of interconnected and multi-disciplinary fields of study. The recent quickly shifting digital setting has enforced the libraries to adopt the new technology and need to seeing the trends in the digital environment, that librarians must start thinking about the development of new skills and assume the new roles to provision technology-based services to the user(Abdullahi, 2021). According to Prof. DN Ocholla & Mr. N Evans (2010), Meanwhile 1958 the bibliometrics has advanced as a field, taught in library &information science schools, and later advanced as a tool for scientific evaluation for quantity of research groups everywhere. The current development in informetric entitled webometrics, has converted as part of the main stream of library and information science study zone. As numerous scholars suggested the previous five decades, have seen major changes in bibliometrics, which has emerged as an established field of research in library and information science schools. Librarians as well as information scientist through information communication technology skills and entrepreneurial abilities can play expressive and principal role in networked information society (Khalili, 2020), and they can act as a guardian of the new digital information and digital services. On other hand relationship between the disciplines of library and information science as well as digital humanities investigated by (Robinson et al., 2015), there is obvious there are close links in several respects, but the rationale for and nature of links and interactions is unclear. The concept of library and information science is the discipline that studies about the information communication chain, comprises all aspects of creation, organization, management, communication and practice of documented information(Bawden & Robinson, 2016). These library and information science inhabits superseding spaces among supplementary disciplines and continuous struggle with other disciplinary spaces such as information technology, information systems, computer science, & media studies digitally(Raju, 2020). Information science highlights the nature of information management used in knowledge sharing as well as systems must be sensitive to the enthusiastic functioning contexts of their users (Hadley & Ewers, 2020). Libraries enhance to endure to undergo incredible transition as they move to

virtual services in response to changes in technology and the expectations of their patrons (York et al., 2020). The expression information retrieval and bibliometrics have long histories as distinct areas of investigation in information science(Wolfram, 2016). But information retrieval has attentive on the design of more efficient and effective systems to match documents to queries to meet the information needs of users. Choosing library and information science program as attentive field of study at the university may have effect on library administrators' decision to hire individual (Khalili, 2020). Technology has twisted an impact on every aspect of library work, and these new trends and advance in information communication technology have enabled the librarians to rethink on their goals of providing excellent information services to the users (Abdullahi, 2021). The information and communication technologies have transported radical changes in handling, delivering and storage of information, and the transition of traditional library collections to digital or virtual collections has offered the librarian with new opportunities and challenges (Lanka, 2019). The information technology skills of the library authorities working in library and information services are also be contingent on the individual qualities of the library professionals (Ganapathi, 2018).

2. Method

The research method used in this study was literature review and qualitatively analyzed, in order to elaborate concepts of the investigation. The data used in this study is published resources related to library science, information science, information technology, as well as computer technology. Generally, this study used online resources issued since 2013 to contemporary, that interconnected to these disciplines. Consistently this study follows meaningfully peer-reviewed, all of the authors participated directly to the review procedure. Even if the study chooses literature analysis method, many of the literatures are not open access in the area. Therefore, during this study there was some challenging issues grounded on searching the recent literature resources. The aim why researchers selected this topic is for a century there was misunderstanding about library and information science. Because, the communities rational on this discipline was back warded and expected that library is merely the collection of hardcopy materials. Therefore, this study desires to close the gap of communities thinking. At present, the library, information science, information technology, computer science and other related disciplines are working together in order to achieve educational activities of the communities around the globe. As described by (Abdullahi, 2021), libraries are built and preserved to provide information resources for a specific and defined community with capacity

building that comprises man-machine interfaces in organizations and improves operating efficiency and skills of personnel, which leads to the excellence of the organization.

2.1. The Study Emphasis Atmospheres

In addition to explored on areas of the motive for begging of library and information science, the work atmosphere of librarian and information expert, information science way of skill promotion for librarian that mentioned in above literature section, the study includes in the area of information technology as capacity constructer of librarian and information expert, as well as interdisciplinary linking of library, information science, information technology and computer science is observed.

The Motive for Beginning of Library and Information Science (RQ1)

Nowadays there is no pure concept on how and when start library and information science as a discipline. But different researchers put their suggestion, such rendering Susan Myburgh (2013), library and information science has emerged as a result, found itself in a predicament revolution is an ongoing feature of modern life, due to a combination of social, technological, economic and educational movements. "Over the centuries, libraries have been at the forefront of gathering and organizing knowledge, selection the knowledge for trustworthiness and making it available for consumption by end users determine"(Islam & Agarwal, 2021). Consequently, this bring through individual, organizational, institutional, social and cultural challenges and int prior three decades have been particularly eventful for the information discipline and its practices. Because, with the rapid development of information communication technology, growth of digital documents, growing globalization, social networking & participative document creation. According to (Jeklin, 2016), the frequent missions in the areas of information retrieval and digital libraries surely may be considered design projects as they create new products. As proposed by (Khan, 2016), to be successful, any curriculum in library and information studies must be conceived as a logical, integrated and coherent whole whilst retaining a flexibility and responsiveness to change. And library and information science schools in all countries should adopting the curricula incorporating the recent developments taking place in the domain of the fast-developing subject. The continued advances in information technology have significantly changed the way information is acquired, processed, stored, retrieved and organized with abilities in treat of information and communication technology in university libraries, effective services delivery is directly connected with the extent of skill librarians possess in the area (Nkamnebe et al., 2018).

The Work Atmosphere of Librarian and Information Expert (RQ2)

Previously societies have immoral knowledge about library and information science profession, due to lack of awareness. The 21st century, upcoming librarians increasingly require new skill sets outside what has been usually taught and many studies have shown that in addition to knowledge of field-specific content, skills, communication, innovation, flexibility, adaptability, creativity, collaboration, interpersonal contact and problem-solving are essential for success (Jeklin, 2016). Library viewed as an open platform and a social-technological-intellectual infrastructure to design and develop knowledge-organization systems (Islam & Agarwal, 2021). As Lungu suggested in (2012), that advocated for librarians develop stronger partnerships with their academic colleagues helping them to embed information literacy within the programs. According to Olivia Crosby (2003), Librarians can work as computer expert to create a website project, which is called information architecture and they can bring the information revolution to the public. The "library and information service providers are called infopreneurs", since they earn their livelihood through library and information science innovative skills and strategic professional practices (Ujoumunna, 2021), with the impression and concept is intellectualized through the term entrepreneurs who are innovative and risk bearing in conceptualizing ideas into wealth. Infinitely librarians & instructors as well as researchers should deliver the smarter learning program in order to address information requirements of the society in educational environment.

Information Science Way of Skill Promotion for Librarian (RQ3)

In modern information explosion age, library and information science are the twin in which both have countless impact on technological invention for librarians. When we dialogue about library, the societies intention is about building and reading material inside. But comprises professional activities such, information organization, technology innovation, resource management, human profession building and the experiencing on change of new documents with information settings. While information science is multidisciplinary field studies everywhere in information behavior, information seeking, information organization, circulation, cataloguing, resource collection, information retrieval, information literacy, information policy, data sharing, software program, knowledge management, information society, information management & interacts supplementary disciplinary fields such as information systems, bibliometrics, computer science, statistics, logic, behavioral science, psychology and others disciplinaries. Therefore, library & information science are viewed as a muti-disciplinary, with a diversity of valid philosophies and research approaches.

Information Technology as Capacity Builder for Librarian as Well as Information Expert (RQ4)

Library is the environment where researchers' innovation found. Information technology is not fixed only one skill but various which have joined to serve the needs of the information revolution, computer technology, telecommunication and audio-video technology(Khan, 2016). And Khan defined grounded on American Library Association, that information technology is the application of computers and supplementary technologies to the acquisition, organization, storage, retrieval, dissemination of information and product of information science. Lisbdnetwork (2018), defined the application of information technology in library and information centers has established in the western countries since 1940's, latter in 1960's the use of information technology has been started in the developing countries. There is a growing concern through scholars in field of library and information science on the way technology is progressively attractive over certain jobs performed by librarians and information professionals(Omeiza, 2019). Thus, the rapid growth of information and communication technology has made special impact on the method of information acquisition, processing, storing and dissemination of information. In addition, the discovery of internet has transported on a major change in scenario of library and information services. The evolution of computer technology enables research sighting is obvious what a difference it has made in the shift from the historical card catalog to the modern digital library management system (Nelson, 2021), and recommended that the current technological advances such as virtual reality and makerspaces can apparently require even more visit between users and library employees as newer technologies and equipment continue to penetrate the library. thus capacity building in libraries is very essential and energetic, particularly when considering the insistence of the services rendered by librarian for universal satisfaction of intellectual quests of patron (Philosophy & Olubiyo, 2022). Libraries also in an attempt to answer to change and growth based on the fifth law of librarianship introduced the use of computers and other technologies into their day-to-day procedures, and the introduction of technology brought about the development of certain concepts such as e-resources, e-libraries and digitalization (Omeiza, 2019). As stated by Zakari Mohammed, and Bot N.G (2009), the role of information and communication technology in library or information center is various, that is established as an information system comprised of organized information managers and users, computer hardware and software, communication networks, information resources that acquires and collects, organizes and transform, stores and retrieves, as well as disseminates and transfers relevant information to the relevant users, regardless of their location, time of accesses and need, and in respective of their strata. Ganapathi

Batthini (2014), stated nowadays, increasingly apparent library experts, employed inside technological backgrounds, that desired the strong information technology talent which enhance to stretch beyond knowhow in use of robotic library management systems. These days school librarians incoming alternative period of radical change as they combine their information specialist roles with technology mixing & in light of these creativities and the explosion of technology in our society, the role of school librarians converted by radical change(Wine, 2016). Thus, in 21st century to achieve the information requirements of libraries and information center, information technology pays significant role, through effective and efficient capacity buildings of the librarian and information expert.

Inter-disciplinary linking of Library, Information Science, Information Technology and Computer Science (RQ5)

In 21st century, particularly in past limited decades departure of library, information science, information technology and computer science are actual problematic. Since these four disciplines are interrelated each other through various professions. Therefore, nowadays, library, information science, information technology and computer science are undistinguishable each other, since one of each is an input to the other. The field of library and information science is self-motivated interdisciplinary extent of study, that interconnected to computer science, communication studies and librarianship as well as peripheral subjects such as psychology, linguistics & statistics (Khan, 2016). There is a growing concern by scholars in the field of library and information science on the way technology is gradually taking over certain jobs performed by librarians and information professionals (Omeiza, 2019). In addition, information sciences are the interconnected field of study with computer science and information technology, that improves knowledges of librarians through teaching; searching strategies of resources, selecting, acquiring, organizing, preserving, disseminating information and made-to-order to the end users. Besides, the evolution of computer and information technology enables research discovery that obvious what a difference it has made in the shift from the historical card catalog to the modern digital library management system. As stated by (Ebonyi, 2015), the arrival of information and communication technology has identified way for easier and faster access and dissemination of information world-wide inside the library.

3. Analysis and Discussions

The reason why library is ongoing in the past, due to the increased numerous types of documents. At time being topics of interest encompassed, acquisition of resources, material circulation, book arrangement, cataloguing and collection management. Meanwhile 1960, many scholars put their view, beached on well-known impression of library that twitch of digital and computer technology, since 1960, the issue of library changed the fortifications of the environment. Eva Semertzaki, (2011), suggested, everywhere in libraries history that specified, it have carried out on three basic functions: such as gather and protect data in print and non-print forms; organize and store data according to some systems and rules and finally they distribute information to users. Besides he specified that traditionally, the management of information is field of activity that outfits libraries and librarians. Correspondingly librarians as information professionals are qualified to be experts in information-handling, which contributing on activities, searching, selecting, acquiring, organizing, preserving, disseminating information and made-to-order to the end users' needs. Whereas, latter information science is begging to advance librarian skill through provision of technology. Because, information science is a multi-disciplinary field of study that elaborates library occupation through advancing of information behavior, information seeking, information organization, information retrieval, information literacy, information policy, software program, knowledge management, information society, information management, through cooperates extra fields such as information technology, information studies, bibliometrics, computer science, behavioral science, statistics, psychology, philosophy and others. Over-all, the recent widespread educational value of information science in higher education institution has gone acceptance as a multidisciplinary field of study as worldwide. Its educational value, together as self-determining scientific discipline and as a cross-disciplinary ground offers new and meaningful ways to interpret the world around us and to approach problems. On the other hand, through 21st century to achieve the information requirements of libraries and information center, information technology pays significant role, through effective and efficient capacity buildings of the librarian and information expert. The outstanding discovery of internet has transported on a major change in scenario of library and information services. Thus, in this era each discipline has significant provision over supplementary discipline. Such library, information science, computer science and information technologies are interconnected each other. Over-all, the subsequent figure 1. illustrations the interdisciplinary landscapes of each current technology. This demonstrated us in clockwise as well as anti-clockwise direction each discipline has strong linkage and one is input to other discipline.
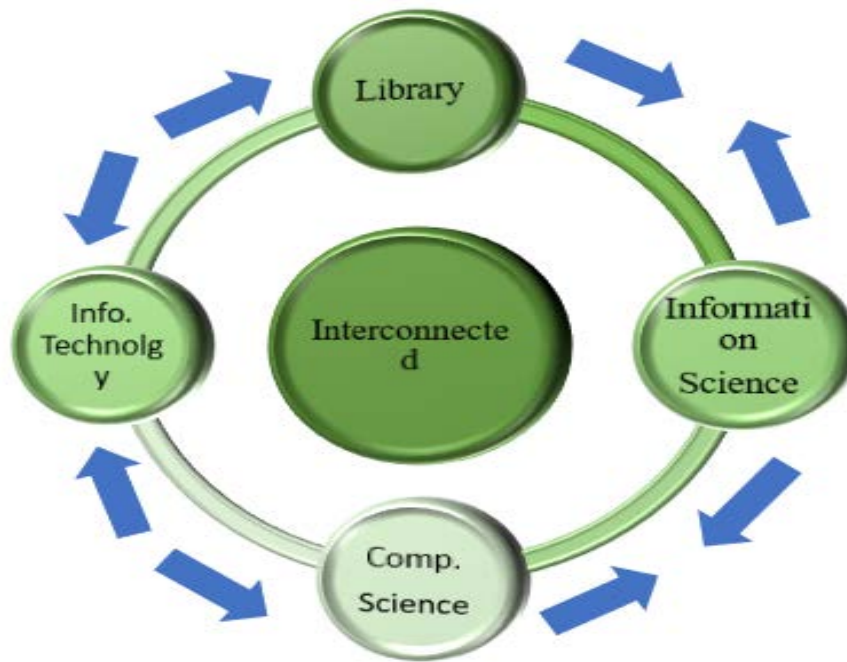
Figure 1. the interconnectedness of Library, Information Science, Computer Science and IT. It is self-created figure.

As designated above nowadays each discipline has been own role on improvements of the other discipline. As tried to stipulate, library is the atmosphere where information science, information technology and computer science, innovation products found. Besides, information sciences are the interconnected field of study with computer science and information technology, that improve the knowledges of librarians over teaching, searching strategies of resources, selecting, acquiring, organizing, preserving, disseminating information and made-to-order to the end users' needs. In addition, the evolution of computer and information technology enables research sighting it is obvious what a difference it has made in the shift from the historical card catalog to the modern digital library management system. As stated by (Ebonyi, 2015), the arrival of ICT has recognized the way for easier and faster access, and spreading of information world-wide inside the library.

4. Concussions

Traditionally library was physical collection of books, journal, articles, research outputs, fictions, papers, periodicals and supplementary newspaper related hardcopy materials. currently library and information science are the twin in which both have countless impact on scientific

innovation. When we dialogue about library, the client's intention is about building and reading material inside. But the contribution of library encompasses through specialized events such, information organization, technology innovation, resource management, human skill building, infopreneur and experiencing on transformation of new credentials information settings. Information science is multidisciplinary field of studies everywhere information behavior, information seeking, information organization, information retrieval, information literacy, information policy, information society, software design, information management and link with supplementary disciplinary fields such information systems, bibliometrics, computer science, statistics, logic, behavioral science and psychology. The study underdone over literature analysis methods. Thus, library and information science viewed as a muti-disciplinary with a wide diversity of valid philosophies. Whereas, information technology is the knowledge domain that enhance to librarians and information exerts. Whatever, the study on those disciplines have substantial to skill innovation, there is challenging issues on the area, such investigators have no permission on their research output to use other researcher as literature, that indicated us most of the research output in the area is not open access. Therefore, if new researcher needs to do research on the extent there is no sufficient literature, that desires the open access resource to encourage the new researchers. The other challenge is, still there is confusion about librarian profession. Thus, for the future more research is significant in the expanses of library and information science, in order to generate the awareness of the communities.

Tracking ID: 58231

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