

**LIBRARY EDUCATION AND TRAINING IN NIGERIA 1962-2022: A DEVELOPMENT OF FRAMEWORK FOR SKILLS NEEDS BY LIS GRADUATE FOR FUNCTIONALITY AND RELEVANCE IN THE 4IR ERA**

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**Abstract**

*This study examined library education and training in Nigeria 1962-2022: with the purpose of developing a framework for skills needs by LIS graduate for functionality and relevance in the 4IR era. A qualitative approach was adopted using documents analysis of documents downloaded from Web of Science, Research Gate, and Francis and Taylor databases from which a total of 45 retrieved articles were used as data source for the study. Three keywords were used in the information search; namely, LIS education and training in Nigeria, fourth industrial revolution 4IR, library and information science skills and skills development. The findings demonstrate that the curriculum contents is adequate in part but the students poor reception makes it inadequate since they cannot applied the skills they acquired through the curriculum contents in their place of work. It was found that LIS have skills to catalogue, index, reference, develop collections, compile bibliographies; partially search and retrieve information, while rare skills include web-design, database management, trouble-shooting and coding, data analysis, among others. This indicates that LIS graduates in Nigeria mostly possess traditional skills from the contents of their curriculum and training. Functional and relevant skills required by LIS graduates reported in the study are critical thinking, complex problem-solving, coordinating with others, people management, judgment and decision-making, emotional intelligence, negotiation, cognitive flexibility, and service orientation. Upon these findings, the study developed a conceptual framework which will serves as basis for the future related studies in Library and Information Science research.*

**Keywords:** Library education and training, Library Schools, LIS graduates, LIS curriculum, Skills development, 4IR skills, Conceptual framework.

**Introduction**

Knowledge, they say is power. It is based on that notion that men will forever seeks for knowledge to acquire power that will enable them to turn things around and make life worthwhile in the living environment. The sought for knowledge in Library Education in Nigeria particularly the formal

university-based Library and Information Science (LIS) education programme began in 1959 at the Institute of Librarianship, University College, Ibadan which is now Department of Library, Archives and Information Studies, at the Faculty of Education, University of Ibadan. Since then, LIS education in Nigeria has passed through certain developmental trends in its history and has seen steady progression in terms of expansion.

To obtain a librarianship education, one must go through the educational system to the university level, where one is hoped to gain the necessary skills and competencies to positively contribute to libraries and related information service organisations in the country. Although library education can be obtained through colleges of education and polytechnics, such graduates are not recognised as professional librarians in Nigeria; only a Bachelor's degree from a university is regarded as the basis for library professional training (Abdulahi et al., 2020; Onuoha et al., 2016).

Going back in time, library education in Nigeria began with a 1953 UNESCO seminar on the establishment of public libraries in Africa, held at the then University College, Ibadan. At the conclusion of the seminar, it was suggested, among other things, that an African institution for librarian training be founded. With the appointment of John Harris as librarian at University College, Ibadan, actual training in librarianship did not begin until 1959. Previously, Nigerians seeking librarianship training had to travel to the United Kingdom to qualify for the Library Association's Associateship. The creation of the library school at Ahmadu Bello University, Zaria, in 1968 was the second library school. By the mid-1970s, it was clear that the two library schools were insufficient to meet the nation's library needs, so two more schools were founded at Bayero University in Kano and the University of Maiduguri. With the establishment of new universities in Nigeria and the growing recognition of the importance of libraries for national development, there was a clear need for more library schools to provide professional service. According to the National Universities Commission (NUC, 2014), library and information science education in Nigeria should: produce Library and Information professionals for all types of libraries, information, and documentation centres; provide programme graduates with relevant theoretical knowledge, practical skills, and techniques to develop and enhance their job performance; encourage the spirit of inquiry and creativity among Library and Information professionals so that they are capable of understanding emerging concepts on the role of information in a complex multi-cultural, global environment.

Without a question, library education is gaining traction in Nigeria. This is reflected in the increasing number of library schools and departments, notably in universities. The sanctioning of ten new LIS departments in 10 distinct Nigerian universities, including the University of Lagos, Ladoké Akintola University, and Ajayi Crowther University, is proof. Unfortunately, despite the proliferation and increase in the number of library schools in Nigeria from 1960 to 2022, employers of LIS graduates continue to complain that LIS graduates lack relevant and necessary skills for functionality in today's workplace. Given the current upheavals in all sectors that have resulted in globalisation and significant radical changes in all realms of human activity, LIS educational programmes around the world are required to be adaptable to such extreme changes. As a result, modifications to the curriculum, teaching and learning techniques, and assessment systems are unavoidable and desirable (Abubakar, 2021). It's also worth noting that the technologically driven Fourth Industrial Revolution (4IR) has opened up a slew of new prospects, as most of the skills required in the 4IR are vastly different from those now taught in Nigerian library schools. On this note, this study looked at the library education and training in Nigeria from 1962-2022: and consider a development of framework for skills needs by LIS graduate for functionality and relevance in the 4IR era.

### Objectives of the Study

The broad objective of the study was to examine library education and training in Nigeria 1962-2022: with the purpose of developing a framework for skills needs by LIS graduate for functionality and relevance 4IR era. The specific objectives of the study were to:

1. Determine the adequacy of the current LIS education and Training and identify the contents of the current curriculum in Nigeria.
2. Identify the skills LIS graduates develop from the current curriculum of library schools in Nigeria.
3. Identify the current skills requires in the 4IR for functionality and relevance by LIS graduates.
4. Propose a conceptual framework for the development of 4IR skills necessary for functionality and relevance by LIS graduate in Nigeria.

### Literature

#### Education, Training, and Curriculum of LIS School in Nigeria

In Nigeria, library education focuses on general librarianship rather than specialisation as public, special, or academic librarians. This lack of specialised training, according to Ogundipe (2005), is due to a lack of well-organised job systems for different types of libraries. In most library schools, the curriculum is based on the NUC (2014) benchmark for library education in Nigeria. Despite being assigned to the college of education by NUC, the benchmark requires students to complete some mandatory and elective courses to graduate. Table 1 shows the core courses required for the bachelor's degree programme in LIS (Onuoha et al., 2016).

**Table 1: Core Courses of the Bachelor's Degree Programme in LIS in Nigerian Universities**

S/N	Courses
1.	Automation in Library Services and Information Centres
2.	Bibliography
3.	Collection Development
4.	Field Experience (SIWES)
5.	Historical Development of Libraries in Nigeria
6.	Indexing and Abstracting
7.	Introduction to Information Science
8.	Introduction to Libraries and Information Resources
9.	Library and Information Services to Rural Communities
10.	Libraries in their Social and Cultural Setting
11.	Library and Society
12.	Management of Libraries and Information Centres
13.	Organisation of Knowledge I
14.	Organisation of Knowledge II
15.	Reference and Information Sources and Services
16.	Research and Statistical Methods
17.	Research Project
18.	Technical Services in Libraries

The data show that there are no courses that reflect the functional and relevant abilities needed by employers in this era. The only course that is relevant is the one listed first: Automation in Library Services and Information Centers. Without a doubt, the amount of abilities a LIS graduate can gain

from only one relevant course is limited. Most institutions offer elective courses in database development, software packages, information and networking, social media and society, web design and management, online information retrieval or information collecting, and similar topics.

### The 4IR Skills

The effect of 4IR on jobs is influenced by the skill level of the worker. Unemployment among graduates may arise when an individual's talents no longer match the skills demanded by employers. When existing abilities are no longer up to date with technical advancements in 4IR, the problem becomes much worse. To ensure that everyone can work in a 4IR environment, they must obtain a set of skills that will enable them to meet the needs of the future labour market (Kamaruzaman et al., 2019).

### Theories that Underpin LIS Graduates Skills Development

The ideas and models for the development of skills for LIS graduates are discussed in this section. The research was based on teaching and learning theories as well as skill development frameworks. Human capital, education, and economic development, as well as behaviourism, were three ideas used in this study. The framework's backbone was the institution-industry connection model, which emphasised the necessity of institutional-industry partnerships in guaranteeing that LIS graduates can grasp new skills while striving for functionality and relevance in the 4IR world of work. Table 2 outlined the ideas and justifications for including this subject in the development of graduate LIS skills.

**Table 2: Theories of LIS Graduates Skills Development**

<b>Theory</b>	<b>Philosophical Underpinning</b>	<b>Reason for Inclusion</b>
<b>Behaviourism (Skinner, 1971).</b>	Behaviour is organised and can be controlled. Credence is given to observable behaviours at the expense of logical reasoning.	The theory is relevant to this study because it involves the mastery of new skills necessary for LIS graduates through education and training by Library Schools in line with the development of the 4IR.
<b>Human Capital Theory (Schultz, 1963).</b>	Development and implementation of soft skills or employability skills would have a considerable impact on students who will soon enter the world of work. Funding and education are interconnected with each other.	The theory gave opportunities for responsible stakeholders like employers, library school or students to equip and strengthen the required skills. Based on the emerging need to acquire new skills in connection with the technological developments in 4IR.
<b>Education and economy development (Wolman &amp; Spitzley, 1996).</b>	Steadiness between education and employment.	The theory tallies with the comprehension of the conflicting skills between higher learning institutions and employers

Two skill development models emerge from the reviewed models, demonstrating the link between institutions and industry (Council for Ontario University, 1998). The models emphasise the importance of the interaction between the employer (industry) and the education system (institution-library schools in Nigeria) in creating graduates and workers with the knowledge and skills needed by the information business today. Industry will gain from the institution's (library schools') education if it is up to date with the current technological advances. As a result, the main feature of an education system is the link between the institution (library schools) and the industry. Learning institutions are generally in charge of duplicating and developing its graduates. However, the industry's contribution to educational institutions should not be overlooked. Nonetheless, the standard is high.

### Related Studies

There are studies available that have focused on framework creation for 4IR skills relevance. For example, Kamaruzaman et al. (2019) examined theories and models of skill development, particularly for Malaysian engineering graduates. Previous researches on the development of engineering graduates' skills were considered, and a systematic review technique was used. The systematic review's findings led to the creation of a conceptual framework for the development of 4IR skills in engineering. According to the findings, the proposed conceptual framework can serve as a basis and guideline for future research investigations.

Abdulahi et al. (2020) sought expert perspectives on the most relevant entrepreneurial skills for 4IR engineers, as well as the best teaching methodologies to be used in Nigerian polytechnics for entrepreneurship education. The 19 entrepreneurial talents with a consensus of  $W_a = 0.821$  and the 8 unique teaching techniques with a consensus of  $W_a = 0.925$  were determined using a two-round Delphi interview. The findings led to the creation of a conceptual framework for the development of 4IR entrepreneurial abilities.

Tsiligiris and Bowyer (2021) based their findings on a comprehensive analysis of current research released by accounting professional organisations that examined the impact of digital technologies on the accounting profession. Using this research, the study evaluates the sorts of abilities and personal attributes that future accountant graduates will require, as well as the consequences for accounting education and university curriculum. According to the findings, future accountants' talents can be divided into four categories: (a) ethical skills, (b) digital skills, (c) business skills, and (d) soft skills. 'Adaptability' and a "lifelong approach to CPD" are the two most important personal attributes for future accountants, according to the study. A proposed conceptual framework summarises the practical consequences for university accounting instruction. The suggested conceptualisation (1) serves as a road map for universities to align their accounting curricula with changes in professional body syllabi; (2) assists university accounting education teachers in updating, enriching, and refocusing their teaching and learning approach to meet the requirements of the 4IR; and (3) encourages the coordination and rationalisation of the skills and personal qualities currently pursued by employability agendas at the university, course, and module levels.

From the above synopsis of literature review, it is clear that there have been no framework developed for LIS graduate to determine their relevant skills for the 4IR. On this note, Menon and Castrillon (2019) argued that new flexible curricula and teaching approaches for diverse contexts, as well as a shift away from a teleological view of 'skills,' are required if higher education is to provide education that prepares students for the demands and challenges of the Fourth Industrial Revolution (4IR). According to the author, the establishment of a dedicated Ministry of Higher Education and Training in South Africa in 2009 resulted in a new perspective in terms of the

organisation of the post-school education and training landscape, which has resulted in a heightened government focus on the link between education, the economy, and skills development. As a result, new approaches to curriculum in general and programme types in particular have been proposed. The current emphasis on specified categories and forms of learning does not support curricula that achieve these goals. Changes in teaching technologies and tools have not been matched by flexibility in the processes and rules established to ensure quality in higher education, causing attempts to respond effectively to become increasingly frustrating. To meet the current and future demands of LIS students, the existing structure need a creative reimagining of curriculum.

### **Methodology**

This study adopted a qualitative approach through analysis of documents downloaded from Research Gate and Web of Science, and Francis and Taylor. A total of 20 articles were found Education and Training in Library and Information Science in Nigeria, 20 articles on Skills required for employment in the 4IR, and another 5 articles on conceptual framework development for relevant 4IR skills by undergraduate students. This gave a total of 45 articles downloaded from which data for the study were acquired. Three keywords were used in the information search; namely, the LIS education and training in Nigeria, fourth industrial revolution 4.0, library and information science skills and skills development. All of this helped in generating data for this study.

### **Results and Discussion**

#### **Adequacy of the current LIS education, training and contents of the current curriculum in Nigeria**

The study's findings on the adequacy of the LIS curriculum in Nigeria appear to be mixed. It is deficient in certain areas and sufficient in others. According to Ita (1986), undergraduate programme products are often weak and unimaginative. This resulted from a curriculum that was deficient. Okoye (2013) discovered no link between skills learned in library school and skills used in the workplace. Despite the fact that courses such as web-site development, web-page design, web-page maintenance, and database management were taught at library school, the majority of respondents demonstrated poor application of such skills at their place of work, leading the author to conclude that poor application of skills could be due to respondents' lack of exposure to challenging opportunities that demanded such skills while in school. This demonstrates that the curriculum content is adequate in part, but the students' poor reception renders it ineffective because they are unable to apply the abilities obtained through curriculum content in their workplace.

Lancaster (1994) found that many library schools' curricula do not include the component of constantly changing information technology to generate professionals capable of working in a variety of information environments, which adds to the lack of LIS curriculum material. "Not only had education failed to grasp the implications of the information age, but library education itself has fallen behind technical innovations in many respects," the author continued (Lancaster, 1994). Simisaiye (2014) noted that LIS courses offered by Nigerian Library Schools in several universities have long since become partially outdated. For the past few years, there has been discussion regarding revising the LIS curricula. Saleh (2011), on the other hand, refutes the poor curriculum revealed in this study and by other LIS researchers, claiming that, despite variations in the content of library school curriculum in Nigeria, it is deemed to be acceptable for imparting appropriate librarianship expertise.

### Skills LIS graduates develop from the current curriculum of library schools in Nigeria

This study discovered that graduates of LIS have skills to catalogue, index, reference, develop collections, and compile bibliographies, in addition to professional qualifications such as a Bachelor's degree in LIS. Few can partially search and retrieve information, and rare skills include web-design, database management, trouble-shooting and coding, and data analysis, among others. As a result, LIS graduates in Nigeria currently gain primarily traditional skills as a result of the curriculum's contents. The LIS curriculum is also found to reflect the requirements and resources of the local community. That is, the local labour market's demand was not overlooked. The contents also cover rural community information services, agricultural extension, public health, information repackaging, audio-visual equipment administration and operation, indigenous knowledge documentation, record preservation and conservation, and query provision. As a result, it may be concluded that the existing LIS training curriculum contents favour local employment markets over global employment, which is the 4IR's current priority. One thing to keep in mind is that professional certification does not always imply acceptance in the eyes of potential employers. Employers are looking for someone who can combine theory and practise, not just theoretical knowledge.

### Current skills requires in the 4IR for functionality and relevance by LIS graduates

The outcomes of the document analysis show that various abilities are required of graduates in the 4IR in general, and specifically of LIS graduates. According to the World Economic Forum (2018), by 2020, 35 percent of all critical skills will have changed. Critical thinking, complex problem-solving, collaborating with others, people management, judgement and decision-making, emotional intelligence, negotiation, cognitive flexibility, and service orientation are among the top ten talents expected by employers, according to the survey. To stay connected and develop in their careers, LIS professionals must go beyond the acquisition of technical skills to round out their previous experience by adding business, technology, and entrepreneurial abilities to match the demands of the job (Tella, 2020). The summary of skills revealed in this study are summarised in Table 2:

**Table 3: Skills Required by LIS Graduates for Functionality and Relevance in the 4IR**

S/N	Code	Skills
1.	ALS	Active Learning Skills
2.	CIS	Creativity/Innovation Skills
3.	CES	Critical Evaluation of Literature
4.	CTS	Critical Thinking Skills
5.	CS	Communication Skills
6.	EI	Emotional Intelligence
7.	FMS	Financial Management Skills
8.	IS	Interpersonal Skills
9.	LS	Leadership Skills
10.	L <sup>3</sup>	Life-Long Learning
11.	OS	Organisation Skills
12.	PSS	Problem-Solving Skills
13.	PPS	Public Presentation Skills
14.	RS	Reasoning Skills
15.	RIR	Research/Information Retrieval
16.	RCV	Respect for Colleagues Views
17.	RM	Resources Management
18.	SDT	Self-Directed Thinking
19.	TWS	Team Working Skills
20.	TMS	Time Management Skills

Eyo et al. (2018) support the current findings by stating that a well-articulated course content is required for a librarian education and training programme. Librarian education and training programmes should be designed to meet the needs of employers and manpower in the twenty-first century, taking into account the impact of Information Communication Technologies (ICT) and the challenges that professionals will face as they train to acquire new skills and competencies in order to function in this new era. This necessitates the development of new curricula aimed at educating librarians to serve as new era librarians in 21st century Nigerian organisations and institutions. The course contents should help to produce librarians who will function as dynamic information providers and information specialists. SPARC (2018) also support the finding by explaining that the library requires workers to have more than one skill. Therefore, building a fully automated solution would require a robot that masters many different tasks.

To enable librarians to adapt to developments in the field of technology and to stay current with new practises, trends, and standards of practise in their industry and in the new information order, course content must reflect best worldwide practises (Eyo et al., 2018). Without paying close attention to professional shifting trends, course content cannot be significantly altered. According to Mohammed (2013), the course materials should be evaluated every quinquennium. Abubakar (2021) went on to say that the program's curriculum should include courses that are more relevant and acceptable. If the course content is well-designed, librarians will gain specialised knowledge and attitudes that will enable them to function well in their current position. Practical experience in information technology courses should be required.

#### **A propose a conceptual framework for the development of 4IR skills necessary for functionality and relevance by LIS graduate in Nigeria**

Based on the skills discovered in this study (Table 3), as well as the examined theories based on three teaching and learning methods: human capital theory (Schultz, 1963), education and economy development theory (Wolman & Spitzley, 1996), and behaviourism theory (Wolman & Spitzley, 1996), (Skinner, 1971). These theories were chosen for their reasoning of achieving a shared understanding across employers, suppliers, and students. The three key stakeholders (employers-information industry; suppliers-Library Schools; and students-LIS Graduates) are to ensure that graduates meet the requirements and needs of industry, based on two skills development models: the relationship model between the institution and industry (Council of Ontario University, 1998) and the relationship model between the institution and industry (Council of Ontario University, 1998). A conceptual framework for LIS graduate development of 4IR abilities is designed based on this conversation.

## Conceptual Framework for the Study

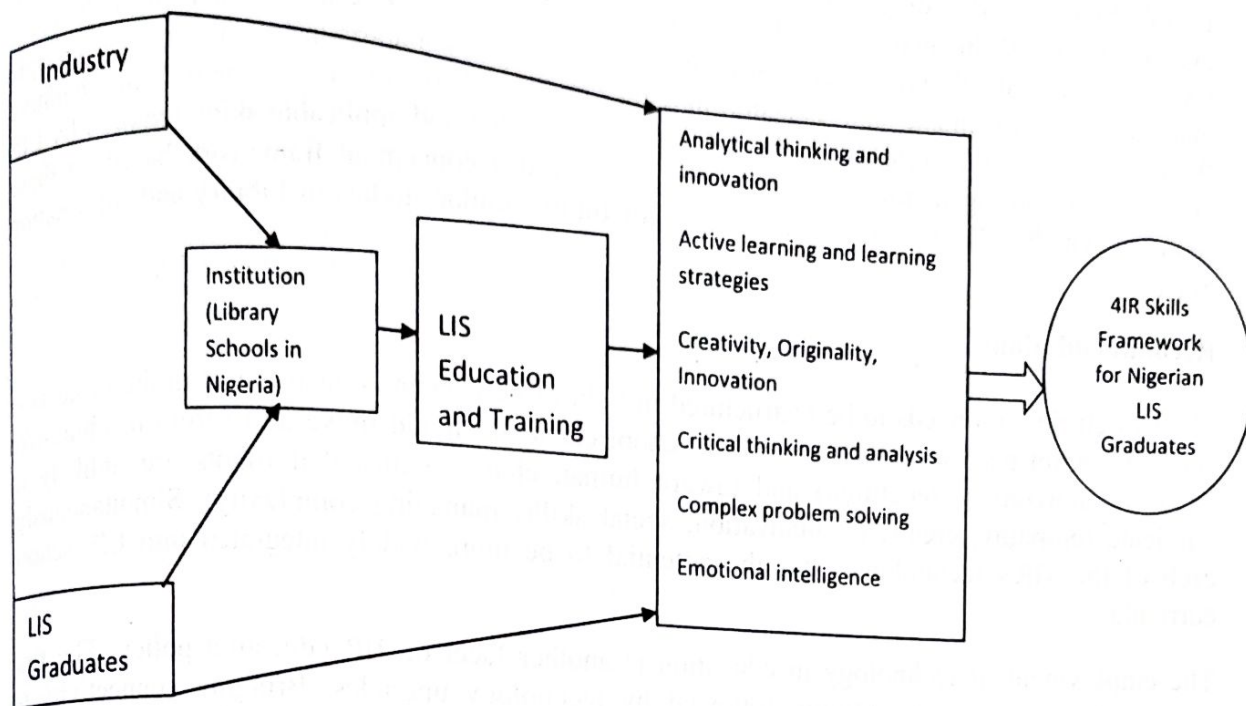


Figure 4: Conceptual framework for LIS Graduates' development of 4IR skills

The process of developing the conceptual framework involved the following two stages:

Stage 1: As previously stated, the conceptual foundation for this study was established using two models. Employers, suppliers, and graduates were all involved in the two models, therefore they were integrated. When comparing the two models, institutions-library schools (suppliers) are the primary source of new employees in the field of Library and Information Science, while employers (information-related sectors) evaluate educational activities and outcomes through LIS graduates from the institutions (Library Schools).

Step 2: As previously stated, the impact of technological advancement will alter the necessity to master new abilities in 4IR. The primary substance of the conceptual framework of this study was recognised by (World Economic Forum, 2018) as ten skills. Seven skills, on the other hand, have yet to be researched in comparison to three other abilities: leadership, problem solving, and technology. The establishment of 4IR skills characteristics resulted in a skills development framework for LIS graduates, which has not been previously described or recommended in the literature. The proposed conceptual framework now serves as the foundation for future library and information science research investigations.

### Conclusion

The goal of this study was to build a framework for skills required for LIS graduates for functionality and relevance in the 4IR era by looking at library education and training in Nigeria from 1962 to 2022. The study discovered that the curriculum content is appropriate in part, but that the students' poor reception renders it ineffective because they are unable to apply the skills they learned in the curriculum to their workplace. Cataloguing, indexing, referencing, developing collections, compiling bibliographies, and partially searching and retrieving information are among

the talents present in LIS, whereas rare skills include web design, database management, troubleshooting and coding, and data analysis, among others. This suggests that traditional skills are possessed by the majority of LIS graduates in Nigeria as a result of their curriculum and training. Critical thinking, complex problem-solving, collaborating with others, people management, judgement and decision-making, emotional intelligence, negotiation, cognitive flexibility, and service orientation are among the functional and applicable skills required by LIS graduates, according to the study. The study produced a conceptual framework based on these findings, which will serve as the foundation for future similar studies in Library and Information Science research.

### **Recommendations**

The LIS curriculum needs to be restructured in light of new technological trends in the profession and job market need in the 4IR age. LIS School curricula should move away from machine-like tasks (memorization, repetition) and toward human characteristics that robots are unlikely to duplicate (empathy, creativity, innovation, social skills, managing complexity). Simultaneously, each of the 4IR's technologies has the potential to be more widely integrated into LIS school curricula.

The employment of technology in education is another facet of 4IR education policy. The first stage is to improve connectivity, followed by technology upgrades. Bringing connectivity to schools, on the other hand, isn't just about setting up computer laboratories and providing internet access. It's all about increasing the school's capacity to use and manage the lab. This is a far more difficult task. A nationwide programme with this precise aim could be a possible intervention.

The reasoning of the 4IR argues that courses at the university level should be larger. Social science concepts should be explored by LIS students, and vice versa. Technology development should not be performed without an awareness of social context, and social analysis should not be undertaken without an understanding of technological dynamics in a world where complex socio-technical systems evolve swiftly and unexpectedly. It is vital to develop curricula connected to 4IR technologies in Nigerian Library Schools, as each has generated market signals indicating a significant level of employer demand.

### **Contribution to Knowledge**

In the context of the 4IR, the study presents a conceptual framework that summarises the abilities and personal attributes for accounting graduates. The suggested conceptual framework has practical applications in the planning and execution of Library Schools at various levels. For starters, it gives university LIS schools a framework for aligning their accounting courses with changes in professional body syllabi. Second, it helps university LIS instructors update, enrich, and concentrate their teaching and learning approaches to meet the 4IR's needs. Third, the suggested framework encourages the coordination and rationalisation of employability objectives at the university, course, and module levels.

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