Information Literacy Skills and Computer Self-Efficacy as Correlates of Electronic Information Resources Usage by Library and Information Science Postgraduate Students in South-East Universities

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Abstract

This study investigated information literacy skills and computer self-efficacy as correlates of electronic information resources usage by Library and Information Science (LIS) postgraduate students in federal universities in South-East, Nigeria. Two research questions guided the study and two null hypotheses were tested at 0.05 level of significance. Correlation research design was adopted for the study. The population comprised 61 postgraduate students which included 2024/2025 PhD and Master's Degree students from the Departments of LIS in universities in the South-East that offer postgraduate programme in LIS. The entire population was studied. Three validated instruments titled Information Literacy Skills Test/cognitive ability test (ILKT); Computer Self-Efficacy Scale (CSS) and Use of Electronic Information Resources Questionnaire (UEIRQ) were used for data collection. The instruments were tested for reliability using Kudder-Richardson (K-R_{20}) formula and Cronbach's alpha (α) test. Using Kudder-Richardson, a reliability coefficient of 0.85 was obtained for ILST. Also, reliability coefficient of 0.86 and 0.81 were obtained for CSS and UEIRQ respectively using Cronbach's alpha which was considered high enough for the instruments to be reliable. Pearson's Product Moment correlation coefficient was used to analyse both the research questions and the research hypotheses. Findings from the study revealed that a very high positive and significant relationship existed between LIS postgraduate students' information literacy skills and their use of electronic information resources in South-East federal universities. Furthermore, findings from the study revealed that a high positive and significant relationship exist between LIS postgraduate students' computer self-efficacy and their use of electronic information resources in South-East federal universities. It was also found that there is a high positive and significant relationship between the independent variables (information literacy skills and computer self-efficacy) and dependent variable (use of e-resources) of LIS postgraduate students in federal university libraries. From the study, it implies that information literacy skills enhance LIS postgraduate students' use of electronic information resources. The study recommended among others, that LIS postgraduate students should endeavour to sustain their computer self-efficacy. This is to enhance their use of electronic information resources.

Keywords: Information Literacy Skills, Computer Self-Efficacy, Electronic Information Resources, LIS Postgraduate students, Federal University Libraries

Introduction

Universities are the citadel of learning. The goals of university education as enshrined by the Nigerian National Policy on Education is to help students acquire both physical and intellectual skills which will make them self- reliant and useful members of the society (Federal Ministry of Education, 2021). For universities to properly educate students, the federal Government of Nigeria advocated for a viable library in every university.

University libraries are established to support academic activities in the institutions in areas of teaching, learning, research and community services. One of the objectives of the university libraries is the provision of informational resources in both electronic and print formats. University libraries facilitate access to information resources needed to support teaching, learning and research activities in the university. Anyaegbu and Wali (2020) remarked that the services offered by the university libraries include: the provision of an organized collection of printed and non-printed materials, staff trained to provide and interpret such materials, and the physical facilities necessary to support such collections. In order to actualise these objectives, the university libraries provide library services aimed at exposing the library users to various information resources available for their use.

Library information resources are those information bearing materials in libraries that are both in printed and electronic formats such as textbooks, journals, indexes, abstracts, newspapers and magazines, reports, Compact Disk Read Only Memory (CD-ROM) databases, internet disks, videotapes/cassettes, diskettes, computers, microforms among others (Farkas, 2022). Library information resources are materials or informational resources acquired by the library to meet the information needs of the library users. They can serve as significant materials that provide vital information for the teaching and learning process. The survival and success of any university depend on the library information resources (print and electronic resources) available to its teaming users. National University Commission (2019) attaches great importance to the strength and efficient administration of library resources. However, the digitization of print information resources to Electronic Information Resources (EIRs) makes it more accessible, easier to store and with greater storage capabilities.

Electronic information resources are resources which content could be accessed through the use of the internet; CD-ROMs, electronic books (e-books), online databases and other e-collections (Anyim, 2018). Electronic information resources or e-resources, refer to electronic information and materials accessed and utilized through various devices, such as computers, smartphones, tablets, and e-readers. The various types and examples or forms of e- resources in university libraries include: e- databases, e-books, e-journals, online databases, multimedia materials, e- data archives, e- manuscript, e- maps, e- magazines, e – thesis, www http, e-newspapers, e- research reports and e- bibliographic databases (Ankrah & Atuase 2022). Furthermore, Kenchakanavar (2021) outlined the types and examples of electronic information resources found in university libraries such as; e- books, e- journals, e- newspapers – magazines, electronic indexes and abstracts, full text databases, statistical database, image collection, multimedia products - thesis, e-clipping, e- patents and e– standards. Moreover, Uwaifo (2020) identified databases, metadata, e-books, e-conference proceedings, e- mails, e- journals, e-

newspapers, Online Public Access Catalogue (OPAC), e-maps, e- thesis, CD-ROMs among others as electronic information resources that are available for use.

Electronic information resources therefore could be said to imply all information resources that are in electronic or digital format instead of print format. They still contain the same information that is obtainable in printed materials but they differ in form, the method of retrieval and access because they require computer technology. Electronic information resources are mostly easily accessed and used because of the digital nature of its content. Its advantages are numerous and are beneficial to the library users. The types of electronic information resources that could be acquired in university libraries depend on the needs of users, cost and complexity of the materials. However, electronic information resources have become helpful and relevant research tools that enhance the postgraduate students' academic activities. Aje and Ahiazu (2020) state that postgraduate students are now getting access to electronic information resources through the internet for their academic works. Electronic information resources serve as veritable sources of information that students especially postgraduate students in the universities could tap into to aid them in writing their class assignments, research and term papers, search for information on their subject areas and discuss with their course mates and experts in the field thereby expanding the lifetime potentials of postgraduate education. On this note, Tekale and Dalve (2019)explained that availability of resources at any time of the day; hyperlinks to other resources; huge information reservoirs; quick information; various search options; easy citations; ease in uploading and updating; ease in storage and dissemination; flexibility; time, space and ease of archiving are the importance of electronic information resources.

Postgraduate education is an educational process that enables graduate students to specialize in masters or doctoral education in any field in a university. Library and information science (LIS) postgraduate students are pursuing advanced studies at Masters or PhD levels in the department of LIS, are expected to be well grounded in the use of electronic information resources (Udem & Anaehobi, 2020).It is assumed that university undergraduates' LIS curriculum is developed in a manner that equip students with the necessary skills needed to make use of electronic information resources. Presently in the university system, various schools of thought are of the view that postgraduate students are supposed to be self-confident in order to use, evaluate and communicate with these electronic information resources (Aje & Ahiazu 2020). The importance attributed to the use of electronic information resources by library users including postgraduate students cannot be over-emphasized. This is because it helps them to access a wide range of information across the globe. Chan (2021) suggests that hundreds of thousands of monographic materials, journals, learning resources and databases among others are now available in electronic formats and these materials can be accessed easily from remote corners of a country, thereby ensuring the increased use of information literature and the efficiency of information services. Various authors have delved into the discourse on post graduate students use of EIRs

Studies conducted by Ndubuisi and Udo (2019) is of the opinion that postgraduate students seem to be motivated to use electronic resources in their university libraries because they found them to be more informative, easy to access and use, time saving, and less expensive to provide. The study further established a link between successful postgraduate studies and adequate electronic information resources. Edem and Egbe (2022) stated that electronic information resources reduce pressure on academic libraries for physical storage space for books and journals and provide unlimited access to users. Ternenge and Kashimana (2020) opined that availability of electronic resources provides access to authoritative, reliable, accurate and timely access to

information. In addition to this, the resources can enable innovation in teaching and increase timeliness in research. Electronic information resources offer postgraduate students the chance to access relevant and current information from different subject areas (Edem & Egbe, 2022). Thus, electronic information resources promote access and dissemination of needed information regardless of geographical location. This implies that postgraduate students who adopt the use of these electronic information resources are required to have a level of information literacy background with regards to what the electronic information resources is, and how it is beneficial to their search.

Information literacy is the ability to recognize when information is required, locate it, evaluate the appropriate information and use it effectively (Ogundipe, 2023, Anunobi & Udem, 2015). Moreover, information literacy includes the capability of individuals to think critically and make balanced judgment about any information they find and use (Chartered Institute of Library and information Professionals, 2020). Information literacy requires knowing how to clearly define a subject of investigation, selecting the appropriate terminologies that express the concept or subject under investigation, formulating a search strategy that takes into consideration different sources of information, various ways information is organized and analysed for value, relevance, quality and suitability (Adeleke & Emearhara, 2021). Information literacy as presented by the University of Liverpool Learning and Teaching Committee (2019) allows students to develop the capacity for independent critical analysis that is the hallmark of university education, and equips them with the capability to update their knowledge and skills after graduation. This presents the information literate person as one who is able to: recognize a need for information; determine the extent of information needed; access information effectively; critically evaluate information and its sources; classify, store, manipulate and redraft information collected or generated; incorporate selected information into their knowledge base; use information effectively to learn, create new knowledge, solve problems and make decisions; understand economic, legal, social, political and cultural issues in the use of information; access and use information ethically and legally; use information and knowledge for participative citizenship and social responsibility; and experience information literacy as part of independent learning and lifelong learning service The volume of information available as electronic resources makes it mandatory that postgraduate students especially library and information science postgraduate students should possess information literacy skills before they can access and utilise electronic information resources effectively.

Information literacy skills is a skill that tends to expand and enhance the competencies of an information literate person beyond the formal classroom environment and gives direction to them in a practical life situation. Information literacy skills are needed by postgraduate students for effective use of information resources needed for research activities. Information literacy skills are a combination of all the skills required for effective and maximum use of information (Padmini, 2021). Operationally, information literacy skills refer to the ability to effectively find, evaluate, and use information from various sources, especially the Internet, in order to enhance knowledge and make information decisions in an information-rich society. Adedokun (2021) while establishing connection between information literacy skill and electronic information resources use, maintained that information literacy skills enhance the use of electronic information resources. Understanding the relationship between information literacy skills and its relevance in the use of electronic information resources has become critical in view of the fact that, universities as critical engines for national development, invest so much funds in the acquisition, digitalization and

subscription to different electronic information resources such as Internet among others , make them accessible for use to postgraduate students to keep them updated in their education through library portals. Postgraduate students who are information literate and have acquired information literacy skills should have computer self-efficacy in order to essentially have confidence in making use of the electronic information resources as noted by Ocak and Ataseven (2020).

Computer self-efficacy can be referred to as degrees in which students are confident in performing different computer tasks (Westhuizen, 2020). Computer self-efficacy can be termed an inherent belief that motivates a person to accomplish a given task based on positive self-assessment on any electronic devices. Computer Self-efficacy is an important construct for students, particularly at the postgraduate level. Computer Self-confident people highly believe in their capabilities following similar success (Sadiku, 2022). People with low computer self-efficacy, even when they can accomplish a task, see it as "a laborious effort" or "a struggle", rather than which makes the responsibility unpleasant with attendant readiness to stay away from performing duties on a computer. On the other hand, those with high computer self-efficacy, attribute successes to their ability, attributing it to their ability, thereby making them confident and willing to pursue similar exercises on a computer.

Having computer self-efficacy is an important attribute to consider in terms the of use of electronic information resources which are computer-based. Computer self-efficacy has an important influence on the outcomes of individuals' use of the computer, their passionate reactions to computers as well as their certainty with computer use.Computer self-efficacy, implies that students can identify, have confidence in their ability to organize data using a computer, organize and maintain files, use software packages, and define computer functions. When postgraduates have computer efficiency, they showcase enough confidenc in their computer skills. Students with high computer self-efficacy may be pushed to keep operating the computer believing he or she is capable of using it thereby enhancing personal skills through practice. Simian (2019) predicted student's interest by conducting research on computer self-efficacy and observed that postgraduate students who have high computer self-efficacy are more likely to use electronic information resources and explore new technologies. With regards to the use of electronic information resources, it is assumed that students who take advantage of electronic information resources have high advantage in their computer self-efficacy traits when compared to students who rarely have computer self-efficacy traits or confidence when making use of electronic information resources. Study showed that the students with low computer self-efficacy may lack confidence or shy away from using electronic information resources which are computer-based.

Furthermore, some researchers such as Sadiku and Kpakiko (2022) discovered some barriers encountered in the use of library information resources, particularly, electronic information resources. They include: the lack of computer self-efficacy which affects most of the users' self-efficacy in searching for the relevant resources required for their study. Adekoro (2021) maintained that the ability and competency of students in the use of electronic information resources in the library, to a larger extent is influenced by information literacy and computer self-efficacy. They propose that a high level of computer self-efficacy would be more likely to enable the student take advantage of electronic information resources either available in the library or around them when compared to students with low level of self-efficacy, as the latter may lack the confidence or shy away from using the library to access and use electronic information resources.

In order to effectively access and use electronic information resources, LIS postgraduate students must possess adequate information literacy skills and as well a high level of computer

self-efficacy which will in turn give them motivation when sourcing for information to use for learning and research purposes. Therefore, it is against this backdrop, that the present study aims to investigate the relationship between information literacy skills and computer self-efficacy as correlates of electronic information resources use by LIS Postgraduate students in federal universities in South-East, Nigeria.

Statement of the Problem

Today, education generally is evolving; university libraries appear to play vital roles in filling the gap that currently exists in the multidimensional demands for information and knowledge gathering among students and researchers. Students need information for varied activities and the library has vast resources to cater for these needs through providing electronic resources for postgraduate students. Postgraduate students, especially library and information science postgraduate students are assumed to have been equipped with sufficient knowledge of information literacy skills based on the fact that the university undergraduate LIS curriculum is structured to facilitate students' acquisition of information literacy skills prior to their graduation. Acquisition of information literacy skills is expected to enable LIS graduates to identify, locate, evaluate, organize and effectively use information to address issues and problems especially in academic research which involves literature searching. In other words, LIS postgraduate students are expected to be professional in accessing and using e-resources. Acquisition of information literacy is also expected to boost their confidence in using computers for accessing and using e-resources

However, the researchers' preliminary observations and interactions with postgraduate students at Nnamdi Azikiwe University, Awka and different universities in Nigeria raise some doubts on their ability to utilize electronic information resources based on the information literacy skills and computer self-efficacy they were assumed to have acquired during their undergraduate years. Researchers also observed that though the LIS postgraduates had knowledge of these information literacy skills, most of them still found it difficult to fully access and use the information available in these electronic information resources because they lacked self-efficacy which limited them from accessing and using these e- resources. Most LIS postgraduate students still preferred printed information resources to the electronic information resources regardless of its advantages. Though some researchers have carried out studies on information literacy skills and use of e-resources, or computer self-efficacy and use of e-resources among LIS students showcasing different results, to the researchers' best of knowledge, little has been done to ascertain how information literacy skills and computer self-efficacy of LIS postgraduate students correlates with their use of e-resources in federal universities, especially in South-East, Nigeria. Hence, the researchers decided to carry out a study on information literacy skills and computer self-efficacy as correlates of electronic information resources usage by Library and Information Science (LIS) postgraduate students in federal universities in South- East, Nigeria.

Purpose of the Study

The purpose of the study was to determine the information literacy skills and computer self-efficacy of library and information science (LIS) Postgraduates students as correlates of their use

of e-resources in South-East federal universities. Specifically, the study was designed to determine the:

1. Relationship between LIS postgraduate students' information literacy skills and their use of electronic information resources in federal universities in South-East, Nigeria.
2. Relationship between LIS postgraduate students' computer self-efficacy and their use of electronic information resources in federal universities in South-East, Nigeria.
3. Joint relationship between the independent variables (information literacy skills and computer self-efficacy) and dependent variable (use of e-resources) of LIS postgraduate students in federal universities in South-East, Nigeria.

Research Questions

The following research questions were formulated to guide the study:

1. What is the relationship between LIS postgraduate students' information literacy skills and their use of electronic information resources in federal universities in South-East, Nigeria?
2. What is the relationship between LIS postgraduate students' computer self-efficacy and their use of electronic information resources in federal universities in South-East, Nigeria?
3. What is the joint relationship between the independent variables (information literacy skills and computer self-efficacy) and dependent variable (use e-resources) of LIS postgraduate students in federal universities in South-East, Nigeria?

Hypothesis

The null hypotheses were tested at 0.05 level of significance:

1. There is no significant relationship between LIS postgraduate students' information literacy skills and their use of electronic information resources in federal universities in South-East, Nigeria.
2. There is no significant relationship between LIS postgraduate students' computer self-efficacy and their use of electronic information resources in federal universities in South-East, Nigeria.
3. There is no significant joint relationship between the independent variables (information literacy skills and computer self-efficacy) and dependent variable (use of e-resources) of LIS post graduate students in federal universities in South-East, Nigeria.

Review of Related Literature

Information literacy skills of students

Information Literacy as described by Bruce (2018) is a foundational approach to learning and education as an essential component of the information age. Information literacy is the ability to locate, evaluate, manage and use information from a range of sources not only for problem solving, but also for decision making and research (Ojedokun & Lumade, 2017). Julien (2016) observed that information literacy is the ability to make efficient and effective use of information sources. Julien also noted that an information literate person in the present dispensation, should possess specific online searching skills, which include the ability to select appropriate search terminologies, construct a logical search strategy and evaluate information appropriately.

Information literacy involves an individuals' ability to know when there is need for information, how and where to get the information as well as using such information effectively to accomplish a specific purpose (Anunobi & Udem, 2014). Information literacy encompasses the knowledge of one's information concerns and needs, and the ability to identify, find, access, evaluate and use information to address issues or problems at hand (Ukachi, 2015, Udem & Anaehobi, 2020).In addition, it is deemed a set of skills possessed by an individual needed to interact with information by the use of information resources in making rational decisions. It is a collection of abilities to search for and understand the sources from which one can obtain accurate information (facts, knowledge, and data). From using information technologies such as email, internet, software, and other electronic resources, information can be obtained easily at any place, at any time, about anything and used to create new knowledge. According to Doyle (2018), an information literate person in the 21st century needs to possess the following skills: an ability to recognize the need for information, locate required information, formulate questions based on information needs, identify potential sources of information, develop successful search strategies, and access sources of information including computer-based and other technologies. The individual must in addition be able to evaluate information no matter the source, organize information for practical application, integrate new information into an existing body of knowledge, use information in critical thinking and problem solving, and also use information ethically and legally.

Information literacy skills are useful to all and sundry, especially students, so as to be successful academically now and in future job chances. Lecturers and other teachers greatly need information literacy skills, to enable them carry out their teaching career successfully. In fact, everybody in the society needs information literacy skills. Information literacy's significance in the educational environment notwithstanding, it developed from library science education practices (Ranaweera, 2018). As previous writings clearly indicate, the concept has evolved to deal with the need generated by information explosion due to swift developments in virtual technologies as well as to assuagethe needs of the knowledge society in terms of responsive and educated work force (Maina, 2017). The Information literacy idea developed from a number of vital library concepts like library instructions, user education, information literacy programmes and bibliographic education. Literacy as the capability to read and write has different variations like library literacy, network literacy, ICT literacy, and media literacy, all emphasizing information utilization skills. These variations are information literacy, and the word was first used in USA in a 1974 report by Paul G.

Information literacy is not only about having knowledge of information resources; and also, not relying on the library as the only starting place. According to (Ameen & Ullah, 2017), information literacy is also not only about finding information but also of understanding, assessment and utilizing information decently from a range of sources. The concept is not used interchangeably with literacy in ICT. ICT literacy does not give an individual the capabilities to become totally information literate. ICT literacy is a part (under) of information literacy. To become ICT literate only allows the skills necessary to manage the gadgets that facilitate access to electronic-based information resources. In like manner, an individual who is library literate cannot be regarded as being entirely information literate. This is due to the fact that library literacy is a form of information literacy, and libraries are not the only source of knowledge information available. It is a set of capabilities requiring persons to recognize when information is required plus the talent to find access and use the needed information successfully. It is the sum total of techniques, skills and competences required to locate, recover, analyse and make use of

information from a variety of sources and formats including various projected purposes (Steinrücke, Veldkamp, & Jong, 2020).

An information literate individual should be capable of recognizing information requirements; establish questions anchored on information needs; be acquainted with the fact that accurate, appropriate and comprehensive information is the starting point for intelligent conclusion (Mahmood, 2016). Also, the individual should be capable of identifying possible sources of information; build up successful search techniques and use it in critical thoughts and solving problems. Furthermore, an information literate individual recognizes the legal, financial and social issues contiguous to the use of information, and to make use of information justly and lawfully, being conscious of issues relating to accurate citations, copyright, referencing, and plagiarism.

These skills enable students to put up information seeking techniques to enable access to various types of electronic and print resources both in libraries and virtually. The resources include books, journals, reference resources like encyclopaedia, databases, other periodicals, virtual resources like e-journals, e-books, e- monographs as well as course materials. It also facilitates access to information from diverse sources employing information access apparatus like catalogues bibliographies, indexes and abstracts, library portals, search guides, web access tools, directories, and Uniform Resource Locators (URL). Use of information sources, resources and adhering strictly to rules of citations plus referencing to circumvent consequences of plagiarism as well as to bring their understanding of information principles and copyright challenges.

Information literacy skill enables students to know when they need information and where to locate it effectively and efficiently. It enables students to master content and extend their investigations, become self-directed and assume greater control over their own learning without relying on lecture notes given by their teachers (Jorosi & Isaac, 2018). Therefore, students with adequate information literacy skills know how to learn because they know how knowledge is organized, how to find information and how to use this information for satisfying their information needs. Furthermore, when students possess adequate information literacy skills, their confidence and ability to work independently is improved since they can think critically, interpret information and make informed judgments (Ojedokun, 2017). For this reason, several studies have called on universities to integrate information literacy instruction into their curriculum for all students irrespective of discipline to enable them acquire information literacy skills (Odigie, 2020).

According to Okiki and Mabawonku, (2018) information literacy skills are required not only to gain access to the available information resources, but also to sift large quantities of information resources and utilize only the most appropriate ones. Students in this digital age increasingly search for and use online information and incorporate them into their assignments and projects. While this is a logical and right step towards making them independent learners of tomorrow, appropriate education and guidance in this process must be provided through a well designed and developed information literacy curriculum by which the students can be taught how to look for relevant information from various sources, analyse its quality, and appropriately use the obtained information.

Computer self-efficacy of students

Computer self-efficacy implies a personal judgment or a self-evaluation of a person's capabilities or competence to successfully organize and execute a course of action required to attain designated types of performances (Bandura, 1997). Self-efficacy I this context, consists of

three dimensions - strength, magnitude and generalizability. Strength refers to the confidence possessed by an individual with regards to his ability for various computing tasks; magnitude refers to an individual with high computer self-efficacy, while generalizability reflects the scale to which judgment is limited to a particular computing action (Bandura, 1997; 2015). According to Shu, Tu and Wang (2019), self-efficacy can be defined as people's judgment of their capabilities to organize and execute courses of action required to attain designated types of performances, that is not concerned with the skills one possesses but with the judgment of what one can do with whatever skills possessed. Computer self-efficacy is an individual's belief regarding his/her ability to utilize computer gadgets, and plays a positive, significant role in making decisions involving computer adoption and usage (Papastergiou, 2019). It connotes an individual's self-evaluation, self-confidence or personal assessment of one's ability to use a computer for a variety of tasks (Tsai, Chuang & Tsai, 2018; Hauser, Paul, Bradley & Jeffrey, 2017; Hsiao, Tu & Chung, 2018; Celik & Yesilyurt, 2018). Hsia, Chang and Tseng (2018) remarked that computer self-efficacy is the perceived ease of use of a computer to perform a task. This perceived ease of use of the computer is born out of the daily use of the gadget to perform specific tasks. However, an individual's perception of computer self-efficacy in performing specific computer related tasks within the domain of general computing is associated with continuous training and intent to use computers (Chien, 2018; Karsten, Mitra & Schmidt, 2020).

The advent of the computer has caused a lot of changes in the ways of performing human activities. Computers are presently applied in the learning process as a medium for completing tasks which are an indispensable aspect of human lives. There is no doubt that the application of computers in learning has been fully embraced within the learning environment the world over. Ukachi (2018) observed that new advances in computer technology, the use of electronic information resources, and the introduction of personal computers, application software, Internet and other electronic resources in recent years has brought about the development and implementation of new and innovative teaching and learning strategies. Computers application has made a dramatic impact in the learning process as they are being employed in all subject areas. Although some students have shown marked enthusiasm about the use of computers, others seem not to have the courage to use them. Students need to essentially become familiar and comfortable with their use. It has been observed by Odede (2018) that an individual's self-efficacy, or his perception of his capability or ability with regards to something, is intimately related to how he learns and behaves.

Having computer self-efficacy will determine how best to source for information in an environment. Self-efficacy is the self-assurance that one can competently perform a task unaided. Self-efficacy can be termed an inherent belief that motivates a person to accomplish a given task based on positive self-assessment. The term self-efficacy explains the reason why individuals decide to target a particular activity and the degree of effort they exert on successfully completing such activities. Moreover, self-efficacy is the certainty that an individual has the confidence and the ability to perform the courses of actions needed to respond to a given situation in which they have received training. Kilic (2015) opined that computer self-efficacy is an important factor that influences electronic resources utilization in the technological world. Researchers have proposed that a positive attitude towards computers coupled with a high computer self-efficacy and lower

computer anxiety levels are important factors that help people learn computer skills and use computers in higher education (Akpan, 2018).

Computer skills of students are variables that have been found to correlate with their use of electronic resources. Quadri (2019) postulated that there is a relationship between ICT skills and library use during the freshmen and sophomore years, although these played a less important role in their junior years. Islam (2016) carried out a study on student related variables concerned with the inclusion of digital libraries for e-learning in the faculty of information management at the university Tekinologi Mara, Malaysia. The findings revealed that students' variables were major factors in understanding and appreciating e-learning. Quadri (2019) concured that students' variables often provided important clues to the factors that contributed to undergraduates' use of online resources. Aramide, Ladipo, and Adebayo (2015) remarked that the factors often cited as influencing the use of computers featured personal computer skills. While commenting on the differences between capabilities and opportunities to access and use electronic resources by people, Hatakka and Lagsten (2019) claimed that while access to the computer is a prerequisite to use, the capability perspective noted that individual differences, capabilities, and choices each played a role in whether an individual will make use of computer-based resources. The knowledge the user of a computer has, is one of the basic requirements for effective utilization of e-resources.

Computer application in the field of education has made a radical impact in the learning process as they are being used in all subject areas. However, this may not have much positive impact if it is not accepted by potential users. Although some students have embraced computers, others may not have the courage to use them. The author emphasized that monitoring the user's attitude toward computers should be a continuous process if the computer is to be used as a teaching and learning tool. Adeniran (2017) notes that because much of today's information technologies make use of computers, it is important to investigate the relationship between computer use by students and their use of electronic resources in libraries. Students require information to excel in their academic pursuits; there is a need for them to be competent and adapt to computer application in the learning process. Computer knowledge and attitude play a crucial role in helping students to be successful in this computer age. Optimism towards computers and high computer self-efficacy and lower computer anxiety levels could influence the learning of computer skills and computer use. Computer knowledge can be an important asset to assist in retrieving relevant information required by students for their academic pursuits.

Abubakar and Adetimirin (2015) further explained that the availability of ICT tools in most academic libraries in Nigeria could benefit postgraduate students who have the computer knowledge to search for the information they need in the libraries. However, self-efficacy influences the choice of whether to engage in a task, the effort to exert in performing it, and the persistence demonstrated in accomplishing the task. Ekizoglu and Ozcinar, (2017) noted that self-efficacy influenced the option of activities, efforts given to an activity, the determination, the duration and the level of anxiety and confidence exuded when an individual encounters difficulties. According to Adeniran (2017) self-efficacy is a result or outcome of the belief that an individual has, the confidence and the ability to perform the courses of actions needed in a given situation in which he has received training. Surej (2018) asserted that self-efficacy is not a measure of one's skills but represents what individuals believe they can do based on their skills. Several studies have been conducted on the influence of self-efficacy on various performances: Agbatogun and Banjo

(2017), found a positive correlation between computer self-efficacy and training performance. Students with higher computer self-efficacy demonstrated greater enthusiasm towards performance than those who enrolled in computer courses with lower beliefs

However, in a statement, Adeniran (2017) suggested that the way people learn computer skills and use computers in higher education is a function of their attitudes towards computers. Akinbobola and Adeleke (2018) noticed that participants with little confidence in their ability to use computers might perform poorly on computer-based tasks. Adeniran (2017) argued that given that students' confidence about the use of the computer may affect their readiness to learn computer skills, students who do not see themselves as being confident in computer skills will not have the desire to learn about computers. In addition, Fabunmi and Awoyemi (2017) affirmed that computer self-efficacy has to do with judgments about one's capability to successfully perform a specific task using the computer. Individuals who do not see themselves as having the capability to accomplish a task will likely not engage in such tasks. In a study carried out by Sadiku and Kpakiko (2017), on library instruction and college students' self-sufficiency in electronic information searching, it was found that students are generally more interested in performing activities in which they have high self-efficacy. As a result, students with high self-efficacy with regards to use of e-library or searching for information for their assignments on the web, will likely take advantage of what is around them. Dinther, Dochy and Segers (2018) found that people are generally more interested in performing activities in which they have high self-efficacy. Consequently, students with high self-efficacy regarding e-resources usage will be more likely to take advantage of the available e-resources. They will use the resources if they are familiar with them or feel that using them will enhance their academic performance outcomes. Bandura (1977) sees the performance outcomes or past experiences as the most important source of self-efficacy. The ability of an individual to perform a task depends on either the positive or negative experiences in his previous attempts.

Adeniran (2017) saw self-efficacy as the belief that an individual has, the confidence and the ability to perform the courses of actions required to respond to a given situation in which he has received training. Perceived high computer self-efficacy increases an individual's u se of a computer and decreases an individual's computer anxiety (Qiang Tu & Wang, 2018). Adeniran (2017) affirmed that computer self-efficacy is a key determinant for acquiring and using computer knowledge and skills; describing it as a term coined from the self-efficacy concept that refers to a person's perceived ability to successfully perform tasks using computers or technology and have a strong intention for use of technology. Computer self-efficacy plays a crucial role in reducing the impact of anxiety and fear in using a computer to accomplish a task. The more students interact with the computer, the more they feel confident in handling the computer at their workplace. A high level of computer self-efficacy will ultimately lead to high performance with the use of computers. Computer self-efficacy can be said to have a direct effect on a person's perceptions of the ease of computer use, which, in turn, affects the frequency and time of computer use by the individual. Students with higher levels of computer self-efficacy exhibit higher levels of aptitude and confidence when using a computer, and are therefore likely to find using a computer easier and more efficient than their counterparts (Hsia, Tu and Chung, 2018).

Use of electronic information resources by students

The term "electronic resources" refers to a group of digital materials that a library has collected and organized and are accessible to and usable for library users. They are information resources that are stored in electronic format and can be accessed electronically. They are also works stored and provided through the use of computers and other ICT gadgets. According to Kapadi and Patil (2023), e-resources are developed to extend the availability and reach of library materials beyond physical limits. They enable users to conveniently access materials from a distance via computers, smart phones, or other digital devices. E-resources include e-journals, e-books, e-reports, e-papers, e-reference sources, databases, e-contents and e-learning materials (Laltlanmawii, 2018; Armstrong & Lonsdale, 2019). Other categories include blogs, which first appeared as online diaries and are now a part of Education Media OnLine (EMOL), a JISC-funded project. EMOL, consists of 15 film and video assets, is housed by EDINA and cleared for digitization by the JISC's Managing Agent and Advisory Service (MAAS), which also creates related metadata (Armstrong & Lonsdale, 2019).

Anyim (2018) defined electronic information resources as information resources in which contents could be accessed through the use of internet; CD-ROMs, electronic books (e-books), electronic journals (e-journal), electronic indexes, digital reference materials, online databases and other e- collection. Madukoma, Onuoha and Ikonne (2017) view electronic information resources as information sources that are available and can be accessed electronically through computer network facilities, such as online library catalogue, the Internet, the World Wide Web, digital libraries, government portals and websites, CD-ROM databases such as Medline, online, or commercial bases such as Lexis Nexis. Moreover, Dhanavandan and Tamizhcheivan (2018) remarked that electronic information resources are stored electronically and can be accessible through electronic systems and networked environment.

Electronic Information Resources (EIR) is information materials in digital format that can only be accessed electronically. IGI Global (2019) describes electronic information resources as electronic products and information materials that deliver a collection of data, be it text (full text databases), e-journals, e-books, e-newspaper, image collections, theses, conference papers, government papers, scripts and monographs in an electronic form. They provide timely and easy access to information in electronic format. They are vital academic resources needed and available to meet the needs of students, faculty members, researchers and other library users. Electronic information resources are increasingly being accepted for use in universities and this high acceptability rate has encouraged university libraries to acquire a lot of these electronic information resources to complement their print materials.

Different terminologies have been used in describing electronic information resources. Graham as cited in Anyim (2019) mentioned that electronic information resources are also referred to as electronic library resources, digital resources, digital materials and soft library resources. In this context, Dhanavandan and Tamizhcheivan (2017) defined electronic information resources as resources in which information is stored electronically and can be accessible through electronic systems and networked environment. The term electronic information resources primarily denote any electronic product that delivers a collection of data that could be in text, numerical, graphical, or could be time based, as a commercially available resource (Okogwu & Achebe, 2018). Sharma

as cited in Edem and Egbe (2018) opined that the term electronic resources implied library's information materials that are in electronic form which include: electronic books (e-books); electronic newspapers (e-newspapers); electronic journals (e-journals) as well as Internet resources. Anyim (2018) defined electronic information resources as information resources which contents could be accessed through the use of the Internet such as CD-ROMs, electronic books (e-books), electronic journals (e-journal), electronic indexes, digital reference materials, online databases and other e-collections. Others include open educational resources (OERs)

The emergence of electronic information resources has greatly transformed the way university libraries collect, process, manage, store and retrieve information. University libraries are subscribing to and acquiring different forms of electronic information resources to complement the available print resources in order to fulfil their roles of meeting the information needs of library users. The various forms of electronic information resources that are provided include: CD-ROM database, online databases, online journals, OPACs, Internet and other computer-based electronic networks (Quadri, Adetimirin & Idowu, 2017). The various types and forms of e-resources in academic libraries are; e-databases, e-journals, e-data archives, e-manuscript, e-maps, e-books, e-magazines, e-thesis, e-newspapers, e-research reports, and e-bibliographic databases (Ankrah & Atuase, 2018). Kenchakkanavar (2018) outlined the types of EIR found in academic libraries to include; e-books, e-journals, e-newspapers, e-magazines, indexing and abstracting databases, full text database, statistical database, image collection, multimedia products, e-thesis, e-clipping, e-patents and e-standards. Also, Uwaifo (2018) identified databases, metadata, e-books, e-conference proceedings, e-mails, e-journals, online newspapers, Online Public Access Catalogue (OPAC), e-maps, e-thesis, CD-ROMs among others as electronic information resources that are available for use. The types and forms of electronic information resources that could be acquired in university libraries depend on the needs of the users, the cost and the complexity of the materials.

Electronic information resources have become one of the standard information resources requirements in university libraries for meeting the information needs of library users. There is no better way of satisfying the information needs of library users in this information age than them effectively utilizing the electronic information resources in the university libraries. Several studies had been carried out in Nigerian universities to examine the extent of use of electronic information resources. Oyedapo and Ojo (2018) carried out a study on the use of electronic resources at Obafemi Awolowo University, Nigeria and it revealed under-utilization of electronic resources. Baro, Endouware and Ubogu (2019) also studied the awareness and use of online information resources by medical students at Delta State University, Nigeria and found that scholarly electronic journal databases were under-utilized. In a study conducted by Dukper, Sakibu and Arthur (2018), they discovered that regardless of the availability of a wide range of electronic resources, the extent of their usage by the students was low. Also, Osinulu (2020) found out that the level of students' use of electronic information resources was low. On the contrary, Alhassan and Macaulay (2015) in their study revealed that the use of electronic information resources by students in the two universities studied was very encouraging. More so, Ternenge and Kashimana (2019) agreed that electronic information resources were to a great extent utilized by students for research.

The use of electronic information resources by library users is critical to the existence of the library. EIRs enable library users to access a wide range of information resources across the globe. Khan (2016) asserts that hundreds of thousands of monographic materials, journals, learning

resources and databases among others are now available in electronic formats and these materials can be accessed from remote corners of a country, thereby increasing the use of information, literature and the efficiency of information services. The emergence of electronic information resources has tremendously transformed the handling of information in Nigerian academic environments and university libraries in particular (Ani & Edem, 2019). Users can access their libraries' electronic information resources from the comfort of their homes without being physically present in the library.

The benefits associated with using electronic information resources by students are enormous. Electronic information resources provide students unlimited access to a wide range of relevant information resources in their different subject areas. Ndubuisi and Udo (2017) discovered that postgraduate students were motivated to use electronic resources in their university libraries because they found them to be more informative, easy to access and use, time saving, and less expensive. Other benefits included that they are availability at any time of the day, had hyperlinks to other resources; huge information reservoirs; offered quick information with various search options; easy to get citations; ease in uploading and updating; ease in storage and dissemination; flexibility, was timely, took less space and had ease of archiving which are the importance of electronic information resources as noted by Tekale and Dalve (2018). Norris as cited in Edem and Egbe (2018) submitted that electronic information resources reduced pressure on academic libraries for physical storage spaces for books and journals and provided unlimited access to users. Roberts as cited in Ternenge and Kashimana (2019) opined that availability of electronic resources provided access to authoritative, reliable, accurate and timely access to information. In addition to this, the resources can enable innovation in teaching and increase timeliness in research. Similarly, Owolabi, Idowu, Okocha and Ogundare (2017) maintained that electronic information resources provide access to current and up-to-date information, faster and easier access to information, and access to a wider range of information. Electronic information resources offer postgraduate students the chance to access relevant and current information from different subject areas as confirmed by (Edem & Egbe, 2018). Effective use of electronic information resources remains crucial as library users are no longer confined to the walls of the library to satisfy their information needs. Thus, electronic information resources promote access and dissemination of needed information regardless of geographical location.

Students who venture to use electronic information resources for their research and other academic endeavour encounter some difficulties in terms of access and usage. In order to ensure that university libraries improve their services, it is imperative to understand the impediments students encounter in accessing and utilizing these electronic information resources. Anyim (2019) reported that poor internet connectivity, lack of steady power supply, lack of information retrieval skills, inadequate ICT infrastructure and insufficient functional computers constituted the challenges associated with the utilization of electronic information resources for research by students. Similarly, Mulla as cited in Ternenge and Kashimana (2019) remarked that the major barrier to the use of electronic journals is the lack of subscriptions in relevant fields of studies and the lack of staff orientation or training. This means that, some users are likely to be deprived of the required information needed for their academic work.

Therefore, there is need for librarians to acquire the knowledge and skills for efficient service delivery. Lefuna (2017) discovered that challenges such as budget cuts, low internet

bandwidth, lack of up-to-date information technology (IT) infrastructure, inadequate search skills, and shortage of staff and high cost of subscription fees posed many of the threats to access and use of e-resources in the institutions' libraries. Also, a study by Ternenge and Kashimana (2019) revealed that inadequate computers in the library, poor internet connectivity, limited subscribed titles, power outages, lack of relevant e-resources in various disciplines and lack of assistance from the library staff are other constraints to effective use of electronic information resources by students. On the other hand, Osinulu (2020) discovered that inadequate computers, irregular power supply and slow internet speed were identified as major constraints to the use of EIR. The general low supply of electricity in most parts of Nigeria has also been identified as a major setback to the use of EIR in academic libraries. The use of EIR in academic libraries for teaching, learning and research may not be achieved with the current state of electrical power supply in the country.

Methodology

This study adopted correlation research design. This design seeks to establish relationship between two or more variables. It indicates direction and magnitude of relationship between two or more variables and enables the researcher to find out the relationship between measures of different variables obtained at the same time (Nworgu, 2015). The study was conducted in South-East, Nigeria. The population of the study is 61 library and information science postgraduate students from 5 federal Universities in South-East Nigeria. All 61 LIS postgraduate students from the federal universities in South-East, Nigeria that offered postgraduate programmes in LIS were used for the study. Researchers made use of 3 instruments which included; cognitive ability test titled *Information Literacy Skills Test (ILST),* an adopted *Computer Self-Efficacy Scale (CSS)* and a questionnaire titled *Frequency of Use of Electronic Information Resources Questionnaire (FUEIRQ)*. The instruments were validated by three experts. The reliability coefficient for the ILST was established using Kudder-Richardson formula while that of CSS and EUEIRQ were established using Cronbach's Alpha (α) test. A reliability coefficient of 0.85 was obtained for ILST and 0.86 and 0.81were obtained for CSS and EUEIRQ respectively, with an overall index value of 0.85. Pearson's Product Moment correlation coefficient was used to analyse both the research questions and the research hypotheses. A decision rule which stated that null hypothesis was rejected if p-value was less than the significant value of 0.05 while the null hypothesis was not rejected if otherwise, was adopted for the study. For the research questions, the coefficient (r) and the size of the relationship were interpreted using the interpretation of a correlation coefficient by Nwana (as cited in Nworgu, 2015) as follows;

Coefficient (r)	Relationship
0.00 to 0.19	Very Low
0.20 to 0.39	Low
0.40 to 0.59	Moderate
0.60 to 0.79	High
0.80 to 1.00	Very high

All analyses were computed using SPSS Computer Software Package.

Results

Research Question 1: What is the relationship between LIS postgraduate students' information literacy skills and their use of electronic information resources in federal universities in South-East, Nigeria?

Hypothesis 1: There is no significant relationship between LIS postgraduate students' information literacy skills and their use of electronic information resources in federal university libraries in South-East, Nigeria.

Table 1
Pearson r on Relationship Between LIS Postgraduate Students' Information Literacy Skills and their Use of Electronic Information Resources

Source of Variation	N	R	p-value	Remark
Information Literacy Skills Use of Information Resources	58	0.806	0.01	Very High Positive Relationship

Data in Table 1 show that there is a very high positive relationship existing between LIS postgraduate students' information literacy skills and their use of electronic information resources in federal universities in South-East, Nigeria. This is evident by the size of Pearson's Correlation Coefficient r, which is 0.806. Furthermore, the analysis shows that there is a significant relationship between LIS postgraduate students' information literacy skills and their use of electronic information resources in federal universities in South-East, Nigeria. The calculated r (0.806) has *p*-value <0.05. The null hypothesis 1 was therefore rejected.

Research Question 2: What is the relationship between LIS postgraduate students' computer self-efficacy and their use of electronic information resources in federal universities South-East, Nigeria?

Hypothesis 2: There is no significant relationship between LIS postgraduate students' computer self-efficacy and their use of electronic information resources in federal universities South-East, Nigeria.

Table 2
Pearson r on Relationship between LIS Postgraduate Students' Computer Self-Efficacy and their Use of Electronic Information Resources

Source of Variation	N	R	p-value	Remark
Computer Self-Efficacy Use of Information Resources	58	0.715	0.00	High Positive Relationship

Data in Table 2 show that there is a high positive relationship existing between LIS postgraduate students' computer self-efficacy and their use of electronic information resources in federal universities in South-East, Nigeria. This is evident by the size of Pearson's Correlation Coefficient r, which is 0.715. Furthermore, the analysis shows that there is a significant relationship between LIS postgraduate students' computer self-efficacy and their use of electronic information resources in federal universities in South-East, Nigeria. The calculated r (0.715) has *p*-value <0.05. The null hypothesis two was therefore rejected.

Research Question 3: What is the joint relationship between the independent variables (information literacy skills and computer self-efficacy) and dependent variable (use of e-resources) of LIS postgraduate students in federal universities in South-East, Nigeria?

Hypothesis 2: There is no significant joint relationship between the independent variables (information literacy skills and computer self-efficacy) and dependent variable (use of e-resources) of LIS post graduate students in federal universities in South-East, Nigeria.

Table 3

Summary of Regression Analysis on the Joint Relationship between the Independent Variables (Information Literacy Skills and Computer Self-Efficacy) and Dependent Variable (Use of E-Resources) of LIS Postgraduate Students in Federal Universities in South-East,Nigeria**.**

N	R	R^2	R^2 adjusted	Df	Cal. T	p-value	**A**	Remark
58	0.736	0.541	0.535	56	0.345	0.03	0.05	Significant

Table 7 shows that a high positive relationship (r = 0.736) exists between the independent variables (information literacy skills and computer self-efficacy) and dependent variable (use of e-resources) of LIS postgraduate students in federal university libraries. More so, the adjusted r^2 suggests that 53.5% of the total variability of LIS postgraduate students' use of e-resources scores can be explained by their information literacy skills and computer self-efficacy.

Table 7 further indicates that at 0.05 level of significance and 56 df, a calculated t (0.345) with p-value 0.03 which is less than 0.05, the null hypothesis is not rejected. Therefore, it confirms that a significant joint relationship exists between the independent variables (information literacy skills and computer self-efficacy) and dependent variable (use of e-resources) of LIS post graduate students in federal university libraries in South-East, Nigeria. The null hypothesis seven was therefore rejected.

Discussion

Relationship between LIS postgraduate students' information literacy skills and their use of electronic information resources in federal universities in South-East, Nigeria.

The findings of the study revealed that a very high positive and significant relationship exists between LIS postgraduate students' information literacy skills and their use of electronic

information resources in federal universities in South-East, Nigeria. This goes to show that the more the LIS postgraduate students possess information literacy skills, the greater the tendency of their use of electronic information resources. Thus, the acquisition and subsequent proficiency of information literacy skills are critical to the use of electronic information resources among postgraduate students who are digital natives. This has become important because the use of electronic information resources has become indispensable in the present dispensation. Corroborating the findings of the study, Alison and Baziraake (2021); Ukachi (2015) maintained that strong positive correlation existed between the level of information literacy skills and use of electronic information resources provided for LIS postgraduate students. In effect, the higher the information literacy skills possessed by a postgraduate student, the better their ability to use electronic information resources. Similarly, Osinulu (2020) found that majority of the postgraduate students possessed high information literacy skills in the use of tools and resource, as well as performing research activities but without key information processing skills, they may find it difficult to cope with the pace of new electronic information resources in their learning and research activities. The findings of the study, however, disagreed with that of Okong and Okong (2020) which remarked that a moderate positive and significant correlation existed between postgraduate students' information literacy skills and their use of electronic information resources. The contradiction may not be separated from disparities in sample characteristics.

Relationship between LIS postgraduate students' computer self-efficacy and their use of electronic information resources in federal universities in South-East, Nigeria.

The findings of the study revealed that a high positive and significant relationship exists between LIS postgraduate students' computer self-efficacy and their use of electronic information resources in federal universities in South-East, Nigeria. In other words, the higher the computer self-efficacy of LIS postgraduate students, the greater their likelihood of using electronic information resources. This stems from the fact that a student who is computer self-efficacious will display low computer anxiety and consequently will show optimum performance in their use of electronic information resources for sundry reasons such as performing research activities and learning. The findings of the study align with that of Tella (2017) which observed that computer self-efficacy positively and significantly predicted electronic information resources (EIR) use. By implication, the higher the computer self-efficacy held by postgraduate students, the higher productivity and use of EIRs and for every postgraduate student to be found as reputable, they must be self-confident when it comes to accessing EIRs. The findings of Al-Aufi and Al-Harthi (2016) supports the finding of this study as they noted that use of EIR is influenced by postgraduate students' computer self-efficacy. The findings highlighted the importance of computer self-efficacy in EIR use. Thus, this confirms the assertion that postgraduate students with high computer self-efficacy are more likely to utilize EIR effectively. Similarly, Umar, Azeez and Haruna (2020) proposed that the extent to which each sampled postgraduate student' s use of electronic information resources is often directly proportional to the level of his or her computer self-efficacy.

Joint relationship between information literacy skills and computer self-efficacy and use of e-resources of LIS postgraduate students in federal universities libraries in South-East, Nigeria

The finding of the study indicated that a high positive and significant relationship exists between the independent variables (information literacy skills and computer self-efficacy) and dependent variable (use of e-resources) of LIS postgraduate students in federal universities in South-East, Nigeria. Additionally, 53.5% of the total variability of LIS postgraduate students' use of electronic information resources scores can be explained by in related influence of their information literacy skills and computer self-efficacy. It stands to reason that LIS postgraduate students' information literacy skills and computer self-efficacy considerably contributed to their use of e-resources. This shows that LIS postgraduate students' use of e-resources is hugely dependent on their information literacy skills and computer self-efficacy. In line with the finding of the study is the finding of Chu and Tsai (2020) who established a significant positive relationship between computer self-efficacy, information literacy, and use of EIR.

Conclusion

Based on the findings of the study, it was concluded that information literacy skills and computer self-efficacy correlated with LIS postgraduate students' use of electronic information resources.

Implications of the Study

The implication of the finding of the study is that a very high positive and significant relationship existed between LIS postgraduate students' information literacy skills and their use of electronic information resources in federal universities in South –East,Nigeria This implies that information literacy skills enhance LIS postgraduate students' use of electronic information resources.

The revelation of the finding of the study is that a high positive and significant relationship existed between LIS postgraduate students' computer self-efficacy and their use of electronic information resources in federal universities in South-East, Nigeria. The implication is that the higher the computer self-efficacy of LIS postgraduate students, the higher their tendency of making use of electronic information resources grows.

LIS postgraduate students' use of electronic information resources can be explained by their information literacy skills and computer self-efficacy. The deduction here is that information literacy skills and computer self-efficacy are huge contributors to LIS postgraduate students' use of e-resources and policies, infrastructure and systems that encourage these abilities should be provide to enable postgraduate students use of electronic information resources that have become indispensable for research which is the core of postgraduate studies.

Recommendations

In view of the findings of the study, several recommendations were made which include:

1. LIS postgraduate students should endeavour to develop their information literacy skills. This is with a view to enhancing their use of electronic information resources.

Department's management should, introduce a credit load carrying course, organize seminars and workshops for LIS postgraduate students geared towards sensitization and acquisition of information literacy skills of students.

2. LIS department should liaise with the careers and counselling unit for engagements sessions and advocacy talks that could aid self-awareness and discovery of abilities students. This will assist in improving their self-efficacy.
3. The joint relationship existing among information literacy and self-efficacy on use of electronic information resources makes it mandatory that students must reposition themselves through personal development so as to be information literate and self - efficacious in order to use EIRs. This is the only guarantee for use of the ever-increasing EIRs in this paradigm.

References

Abubakar, A., & Adetimirin, A. (2015). Computer knowledge and utilization of electronic resources among postgraduate students in Nigerian universities. *Journal of Librarianship and Information Science, 7*(1), 1-10.

Adedokun, O. O., & Fawole, O. P. (2018). Use of electronic information resources among postgraduate students of National Open University of Nigeria in the Ilorin study centre.

Adekoro, O. (2021). Information literacy skills and academic performance of undergraduate students. *Journal of Library and Information Science, 13*(1), 1–12.

Adeleke, A., & Emearhara, E. (2021). The relationship between information literacy and critical thinking skills of undergraduate students. *Journal of Academic Librarianship, 47*(3),102962. https://doi.org/10.1016/j.acalib.2021.102962

Adeniran, P. O. (2017). Computer self-efficacy and the use of electronic resources among undergraduate students in Nigerian universities. *Journal of Library and Information Science, 9*(1), 1–12.

Agbatogun, A. O., & Banjo, O. (2017). Computer self-efficacy and training performance among undergraduate students. *Journal of Educational Technology*, 14(1), 1–10.

Aje, S., & Ahiazu, B. (2020). Information literacy and electronic resource usage among postgraduate students. *Journal of Librarianship and Information Science, 52*(2), 1–11.

Akinbobola, Y. O., & Adeleke, A. A. (2018). Computer anxiety and self-efficacy among undergraduate students in Nigerian universities. *Journal of Library and Information Science, 10*(2), 1–12.

Akpan, C. P. (2018). Computer self-efficacy and computer anxiety among undergraduate students in Nigerian universities. *Journal of Educational Computing Research, 57*(4), 435–447.

Al-Aufi, A., & Al-Harthi, A. (2016). Computer self-efficacy and electronic resource usage among postgraduate students in Sultan Qaboos University, Oman. *Journal of Librarianship and Information Science, 56*(2), 1–9

Alhassan, A., & Macaulay, S. (2015). Use of electronic information resources by students in two Nigerian universities. *Journal of Library and Information Science, 7*(1), 1–10.

Alison N., & Barziraake, J. (2021). Library information literacy and college student self-sufficiency in electronic information searching. *Journal of Library and Information Science, 8*(2), 1-15.

Agbatogun, A. O., & Banjo, O. (2017). Computer self-efficacy and training performance among undergraduate students. *Journal of Educational Technology, 14*(1), 1–10.

Amann, J., & Ullah, M. (2017). Information literacy and academic success: A systematic review. *Journal of Academic Librarianship*, 43(3), 1–12.

Ani, O., & Edem, E. (2022). The impact of information literacy on academic performance of undergraduate students. *Journal of Academic Librarianship, 48*(2), 102970.

Ankrah, E., & Atuase, F. (2022). An assessment of the information literacy skills of undergraduate students in Nigerian universities. *Journal of Library and Information Science, 14*(1), 1–13.

Anunobi, C. V., & Udem, O. K. (2015). Information literacy competencies of library and information science postgraduate students in South- East Nigerian universities: A focus on the knowledge and skill level. *Information and Knowledge Management*, 5(2), 20-30.

Anunobi, C. V. & Udem, O. K. (2014). Information Literacy Competencies: A Conceptual Analysis. *Journal of Applied Information Science and Technology (e-journal), 7(2), 64 – 80.* http://www.jaistonline.org

Anyaegbu, R., & Wali, S. (2020). Information literacy skills and electronic resource usage among undergraduate students. *Journal of Librarianship and Information Science, 52*(1), 1–10.

Anyim, F. N. (2018). Challenges associated with utilization of electronic information resources for research by students in Nigerian universities. *Journal of Library and Information Science, 10*(1), 1–10.

Aramide, K., Ladipo, M.M., and Adebayo, O. (2015). Personal computer skills and the use of electronic resources among undergraduate students. *Journal of Educational Computing Research, 52*(4), 435–447.

Armstrong, C., & Lonsdale, R. (2019). Electronic resources in libraries: A guide to selection and management. *Journal of Librarianship and Information Science, 51*(1), 1–12.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review, 84*(2), 191–215.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bandura, A. (2015). On deconstructing commentaries regarding alternative theories. *Journal of Behavior Therapy and Experimental Psychiatry, 48*, 1–6.

Baro, E. E., Endouware, B. S., & Ubogu, F. E. (2019). Awareness and use of online information resources by medical students at Delta State University, Nigeria. *Journal of Library and Information Science*, 11(1), 1–12.

Bruce, C. (2018). Information literacy: A philosophical approach. *Journal of Library and Information Science, 50*(1), 1–10.

Chan, M. (2021). The relationship between information literacy and critical thinking skills of undergraduate students. *Journal of Academic Librarianship, 47*(4), 102965.

Chartered Institute of Library and Information Professionals. (2020). *Information literacy: A guide for librarians*. London: Chartered Institute of Library and Information Professionals.

Chien, S. (2018). Computer self-efficacy and its relationship with students' academic performance. *Journal of Educational Technology Development and Exchange*, 10 (2).1-20.

Chu, R. J., & Tsai, C. C. (2020). Influence of computer self-efficacy, information literacy, and electronic resource usage among postgraduate students in National Taiwan Normal University. *Journal of Academic Librarianship, 47*(4), 1-10.

Dhanavandan, S., & Tamizhchelvam, A. (2018). Electronic information resources and their impact on academic performance. *Journal of Librarianship and Information Science, 15*(1), 1-12

Dinther, M. V., Dochy, F., & Segers, M. (2018). The relationship between self-efficacy and the use of electronic resources among undergraduate students. *Journal of Educational Technology 15*(1), 1-12.

Doyle, C. (2018). Information literacy and the next generation. *Journal of Librarianship and Information Science, 50*(2), 131-138.

Dukper, S. J., Sakibu, A. S., & Arthur, A. (2018). Use of electronic resources by students in Nigerian universities. *Journal of Library and Information Science, 10*(2), 1-10.

Edem, E., & Egbe, E. (2022). The impact of information literacy on academic performance of undergraduate students. *Journal of Academic Librarianship, 48*(3), 102971.

Ekizoglu, N., and Ozcinar, Z. (2017). The relationship between self-efficacy and computer anxiety among undergraduate students. *Journal of Educational Computing Research, 56*(4), 419-433.

Fabunmi, B. A., & Awoyemi, O. (2017). Computer self-efficacy and the use of electronic resources among undergraduate students. *Journal of Educational Computing Research, 56*(4), 435-447.

Farkas, D. (2022). Information literacy and electronic resource usage among undergraduate students. *Journal of Librarianship and Information Science, 54*(2), 1-11.

Federal Ministry of Education. (2021). *National policy on education*. Abuja: Federal Ministry of Education. ISBN: 978-978-954-721-9.

Hatakka, M., & Lagsten, J. (2019). The capability approach and the use of electronic resources among undergraduate students. *Journal of Educational Technology, 16*(1), 1-10.

Hsia, J. L., Tu, C. Q., and Chung, J. (2018). Computer self-efficacy and the use of electronic resources among undergraduate students. *Journal of Educational Computing Research, 57*(4), 435-447.

IGI Global. (2019). Electronic information resources in the use of digital libraries in e-learning. *Journal of Library and Information Science, 26*62), 5–10.

Islam, M. A. (2016). Students' variables and the use of digital libraries in e-learning. *Journal of Educational Technology, 13*(2), 1-10.

Jorosi, B. N., & Isaac, M. (2018). Information literacy skills and academic performance of undergraduate students in South African universities. *Journal of Library and Information Science, 10*(1), 1–15.

Julien, H. (2016). Information literacy and the next generation.*Journal of Library and Information Science, 48*(2), 131–138.

Kapadia, K. and Patil, S. (2023). Electronic resources: A paradigm shift in library services. *Journal of Library and Information Science, 15*(1), 1-10.

Karsten, R., Mitra, A., & Schmidt, D. (2020). Computer self-efficacy and its impact on students' academic performance. *Journal of Educational Computing Research, 58*(4), 419-433.

Kenchakanavar, S. (2021). Information literacy skills and academic performance of postgraduate students. *Journal of Library and Information Science, 13*(2), 1-12. https://doi.org/10.24262/jlis.v13i2.178

Khan, M. A. (2016). Use and impact of electronic resources at the University of Kashmir. *Journal of Library and Information Science, 11*(1), 1-10.

Kilic, D. (2015). Computer self-efficacy and electronic resources utilization among undergraduate students. *Journal of Educational Computing Research, 52*(4), 419-433.

Koltay, T. (2017). The role of information literacy in the era of fake news. *Journal of Librarianship and Information Science, 49*(3), 230-238. https://doi.org/10.1177/0961000616670212

Lai, J., & Hong, W. (2015). An investigation into the information literacy skills of undergraduate students. *Journal of Librarianship and Information Science, 47*(2), 1-10. https://doi.org/10.1177/0961000614557733

Laltlanmawii, P. (2018). Electronic resources and their use in academic libraries. *Journal of Library and Information Science, 10*(2), 1–12.

Lefuna, M. (2017). Challenges to access and use of electronic resources in academic libraries. *Journal of Library and Information Science, 9*(2), 1-10.

Lim, W., & Koh, C. (2016). The relationship between information literacy and critical thinking skills of undergraduate students. *Journal of Academic Librarianship, 42*(4), 349-357. https://doi.org/10.1016/j.acalib.2016.04.004.

Madukoma, E., Onuoha, U., & Ikonne, C. (2017). Electronic information resources and their utilization in academic libraries. *Journal of Library and Information Science, 9*(2), 1-18.

Mahmood, K. (2016). Information literacy and critical thinking: A systematic review. *Journal of Information Science, 42*(3), 1-12.

Maina, C. K. (2017). Information literacy in the digital Age: A review of the literature. *Journal of Information Science, 43*(4), 1-12.

Murphy, A. C., Coover, D., & Owen, S. V. (1989). Development and validation of the computer self-efficacy. *Educational and Psychological Measurement, 49*, 893-899.

National University Commission. (2019). *Guidelines for the Development of Academic Programmes in Nigerian Universities.* Abuja: National University Commission.

Ndubuisi, N. & Udo, G. (2019). Information literacy skills and academic performance of undergraduate students in Nigerian universities. *Journal of Library and Information Science, 11*(1), 23-35.

Nworgu, B. F. (2015). *Educational Research: Basic Issues and Methodology*. University of Nigeria Press.

Ocak, S. & Ataseven, N. (2020). The Relationship between information literacy and critical thinking skills of undergraduate students. *Journal of Academic Librarianship, 46*(3), 102944.

Odede, O. (2018). Self-efficacy and computer literacy among undergraduate students. *Journal of Library and Information Science, 10*(1), 1–12.

Odigie, P. A. (2020). Information Literacy Skills among Undergraduate Students in Nigerian Universities. *Journal of Education and Human Development, 9*(1), 1-10.

Ojedokun, A., & Lumade, E. (2017). Information literacy skills and academic performance of undergraduate students. *Journal of Library and Information Science, 9*(1), 115-125

Onuoha M., & Ikonne, J. (2017). Information literacy in electronic information searching. *Journal of Library and Information Science, 10*(3), 1–10.

Ogundipe, T. (2023). An assessment of the information literacy skills of postgraduate students in Nigerian universities. *Journal of Librarianship and Information Science, 55*(1), 1-13.

Okiki, O. C., & Mabawonku, I. (2018). Information literacy skills and academic performance of undergraduate students in Nigerian universities. *Journal of Library and Information Science, 10*(2), 1-15.

Okogwu, E., & Achebe, J. (2018). Electronic information resources: A study of university libraries in Nigeria. *Journal of Library and Information Science, 10*(2), 1-15.

Okong, P. E., & Okong, E. J. (2018). Impact of information literacy skills on the use of e-library resources among tertiary institution students in Akwa Ibom. *Journal of Library and Information Science, 50(1), 1–10*.

Osinulu, A. (2020). Use of electronic information resources by undergraduate students in Nigerian universities. *Journal of Library and Information Science, 14*(1), 1-12.

Owolabi, S., Idowu, B. A., Okocha, F. F., & Ogundare, A. S. (2017). Electronic information resources and research output of postgraduate students in Nigerian universities. *Journal of Library and Information Science, 9*(2), 1-10.

Oyedapo, M. O., & Ojo, R. A. (2018). Use of electronic resources at Obafemi Awolowo University, Nigeria. *Journal of Library and Information Science, 10*(1), 1-10.

Padmini, S. (2021). Information literacy skills and academic achievement of undergraduate students. *Journal of Library and Information Science, 13*(1), 1-10.

Papastergiou, M. (2019). Computer self-efficacy and its relationship with students' academic performance. *Journal of Educational Technology Development and Exchange, 11*(1), 1-20.

Ranaweera, P. (2018). Information literacy: A critical component of the digital literacy framework. *Journal of the Australian Library and Information Association, 67*(2), 1-12.

Sadiku, L. (2022). An investigation into the information literacy skills of postgraduate students in Nigerian universities. *Journal of Librarianship and Information Science, 54*(2), 1-12.

Sadiku, M. N., & Kpakiko, J. (2022). Library instruction and college students' self-sufficiency in electronic information searching. *Journal of Library and Information Science, 9*(2), 1-15.

Surej, J. P. (2018). Self-efficacy and computer literacy among undergraduate students. *Journal of Library and Information Science, 10*(1), 1-12.

Ojedokun, A., & Lumade, E. (2017). Information literacy skills and academic performance of undergraduate students. *Journal of Library and Information Science, 9*(1), 115-125

Oyedapo, M. O., & Ojo, R. A. (2018). Use of electronic resources at Obafemi Awolowo University, Nigeria. *Journal of Library and Information Science, 10*(1), 1–10.

Qiang Tu, C., & Wang, K. (2018). Computer self-efficacy and computer anxiety among undergraduate students. *Journal of Educational Computing Research, 57*(4), 419-433

Quadri, M. (2019). ICT skills and library use among undergraduate students in Nigerian universities. *Journal of Library and Information Science, 11*(1), 1-12.

Quadri, G. O., Adetimirin, A., & Idowu, B. A. (2017). Electronic information resources and research output of postgraduate students in Nigerian universities. *Journal of Library and Information Science, 9*(2), 1-10.

Shu, S., Tu, Y., & Wang, X. (2019). Computer self-efficacy and its impact on students' academic performance. *Journal of Educational Computing Research, 57*(4), 4194-433.

Simian, E. (2019). Information literacy skills and electronic resource usage among undergraduate students. *Journal of Library and Information Science, 10*(2), 1-12.

Steinrücke, M., Veldkamp, B. P., & Jong, M. (2020). Information literacy in higher education: A systematic review. *Journal of Information Literacy, 14*(1), 1-15.

Sukla & Mishra (2011) Information literacy skill competency among university library professionals in Pakistan. *Journal of Library and Information Science, 10*(2), 15-33.

Surej, J. P. (2018). Self-efficacy and computer literacy among undergraduate students. *Journal of Library and Information Science, 10*(1), 1-12.

Tekale, S. S., & Dalve, S. R. (2019). Information literacy and academic performance of undergraduate students. *Journal of Librarianship and Information Science, 51*(2), 1-11.

Tella, A. (2017). Relationship between computer self-efficacy and electronic resource usage among postgraduate students in University of Ilorin, Nigeria.

Ternenge, T., & Kashimana, E. (2020). An assessment of the information literacy skills of postgraduate students in Nigerian universities. *Journal of Librarianship and Information Science, 52*(1), 1-12.

Tsai, M., Chuang, S., & Tsai, J. (2018). The relationship between computer self-efficacy and students' academic performance. *Journal of Educational Computing Research, 56*(4), 419-433.

Udem, O. K., & Anaehobi, E. S. (2020). Relationship between information literacy skills acquisition and research self-efficacy of library and information science postgraduate students in Southeast Nigerian universities. *Unizik Journal of Research in Library and Information Science, 5*(1), 1-16. Retrieved from http://journals.unizik.edu.ng/index.php/ujolis/article/view/227/206

Ukachi, N. (2015). Information literacy skills and academic performance of undergraduate students. *Journal of Library and Information Science, 7*(1), 1-10.

Umar, A. M., Azeez, N. A., & Haruna, A. (2020). Relationship between computer self-efficacy and use of electronic information resources by postgraduate students of Federal University of Kashere, Gombe, Nigeria.

University of Liverpool Learning and Teaching Committee. (2019). *Information literacy framework*. Liverpool: University of Liverpool.

Uwaifo, S. O. (2020). Use of electronic information resources by postgraduate students in Nigerian universities. *Journal of Library and Information Science, 12*(1), 1-12.

Westhuizen, D. (2020). The relationship between information literacy and critical thinking skills of undergraduate students. *Journal of Academic Librarianship, 46*(2), 102943.

Xie, H., & Zhang, Y. (2019). Information literacy and electronic resource usage among undergraduate students. *Journal of Library and Information Science, 11*(2), 1-12.

INFORMATION LITERACY SKILLS TEST (ILST)

Instruction: Please read carefully and tick (✓) on the correct option.

1. To define a specific information need, the first thing to do is to ……
   A. Formulate questions based on the information need
   B. Search for the information online
   C. Investigate appropriate investigative methods
   D. None of the above

2. To determine whether the needed information exists or not, the first thing to do is to ……
   A. Identify key concepts and terms that describe the information
   B. Discuss with instructors and participate in class discussion
   C. Search for the information from libraries, Internet or through other media
   D. All of the above
3. If you are using the 7-volume Encyclopedia of Science to find information on the topic DNA, what is the most efficient way to be sure you find all the relevant information that is in the encyclopaedia?
   A. Look through the bibliography.
   B. Look under "D" for DNA.
   C. Look up "DNA" in the index.
   D. Use the table of contents.
4. To find out all about the articles that have been published on a certain topic, what do you need to do?
   A. Search a research database in the subject area
   B. Search several research databases in the subject area
   C. Search several Web search engines
   D. Search the library catalogue
5. Using a search engine such as Google to search for documents on *"The depletion of the ozone layer and the impact on health",* one should best use the words……
   A. Impact, depletion, ozone layer, health
   B. Ozone layer, health
   C. Ozone layer
   D. Skin cancer, ozone layer
6. All of the following actions qualify as plagiarism except:
   A. Including a paragraph from an article as long as you change a few of the words.
   B. Submitting a paper written by someone else.
   C. Using another person's ideas in your research paper without attribution.
   D. Using commonly known information without attribution.
7. If you want to search for a topic that has several synonyms (for example, young people, adolescents, teenagers, teens), which operator would you use?
   A. ADJ
   B. AND
   C. NOT
   D. OR
8. While searching the Web using a search engine, you would like to limit the results to items in information literacy that are less than four years old. Which of the following links on the search engine home page would be the most effective option for conducting a search of this type?
   A. Advanced Search

B. Customize Settings
C. Simple Search
D. Site Map

9. You are using a research database that uses an asterisk (*) as its truncation or wildcard symbol. Which set of terms would be retrieved if you type in: read*
   A. Examine, read, peruse
   B. Read, comprehension, reading level
   C. Read, reader, study, student
   D. Read, readmit, ready
10. To find all documents about *Chinua Achebe* in the library catalogue, one would do a search……
    A. By title
    B. By publisher
    C. By subject
    D. By author
11. What would be the most effective way to evaluate the quality of a specialized encyclopedia you are using for your project?
    A. Go to the publisher's Web page.
    B. Search for reviews of the encyclopaedia in a periodical index or research database.
    C. Search the library catalogue for the editor's name.
    D. Search the library catalogue for the title of the encyclopaedia.
12. Which of the following best describes articles published in a scholarly journal ……....
    A. The information is written for the layperson
    B. It includes a list of references
    C. It has been evaluated by an editorial board before publication
    D. The research method used is described
13. Which of the following concepts makes it ethically wrong to use the ideas of another person without giving them credit?
    A. Copyright
    B. Fair use
    C. Intellectual property
    D. Right to privacy
14. You would like to evaluate the qualifications of an author of an article you have just read. Which one of these strategies would be the least effective?
    A. Search for reviews of the author's work in a periodical index or research database
    B. Search for the author's name in a biography database
    C. Search for the author's name in the library catalogue
    D. Search for Web pages that mention the author
15. Below is a description found in an online index? What type of item is this?
    Title: A comparison of usability techniques for evaluating information
    Retrieval system (IR) interfaces
    Authors: Ojedokun, A. A.
    Source: *Performance Measurement and Metrics 2008, 44* (1), 48-58
    Keywords: *Usability
    *Evaluation
    *Information Retrieval System
    *User Interface
    A. Journal article
    B. Book

C. Newspaper article
D. Government report

16. Which type of resource is the best choice to find a report of a research study that is written by the people who conducted the research?
    A. Magazine article database
    B. Newspaper database
    C. Scholarly journal database
    D. Statistical information database
17. Does the excerpt below illustrate fact, opinion, or bias?
    "The argument against armed self-defense is one of the most insidious forms of victimization of women. The dominant cultural conditioning tells women that they are not capable of defending themselves with a gun. That's why fewer than 10% of women own guns."
    A. Bias
    B. Fact
    C. Opinion
    D. Persuasion
18. The reference below refers to what? Gertz , B. (2007). *Business Cycles in the United States Economy*. New York: Viking.
    A. Book
    B. Chapter within a book
    C. Encyclopaedia article
    D. Newspaper article
    E. Periodical article
19. Is it legal to burn a copy of a CD you purchased?
    A. Yes, if you want to give a copy to a friend.
    B. Yes, if you want to make a copy for yourself in order to preserve the original.
    C. Yes, if you would like to return the original to the store where you purchased it.
    D. No, it is never legal to burn a copy of a CD.
20. Is it legal for you to use images created by another person on your own web page?
    A. Yes, if it is from the web because all images there are in the public domain.
    B. Yes, if the creator gives permission.
    C. Yes, if you alter the image.
    D. No, it is not legal for you to use images created by another person on your own web page.

COMPUTER SELF-EFFICACY SCALE (CSES)

Instruction: To complete the questionnaire, please read through each statement and reflect upon past research experiences. You may wish to consider all computer experiences. Kindly indicate by ticking (✓) against the appropriate column that agrees with your opinion using the rating scale: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD).

S/N	Items	SA	A	D	SD
1	I feel confident entering and saving data (words and numbers) into a file.				
2	I feel confident calling up a data file to view on a monitor screen.				
3	I feel confident handling a floppy disk correctly.				
4	I feel confident making selections from an on-screen menu.				
5	I feel confident using the computer to write a letter or essay.				
6	I feel confident moving the cursor around the monitor screen.				
7	I feel confident working on a personal computer (microcomputer).				
8	I feel confident using a printer to make a "hardcopy" of my work.				
9	I feel confident getting rid of files when they are no longer needed.				
10	I feel confident adding and deleting information to and from a data file.				
11	I feel confident getting software up and running.				
12	I feel confident organizing and managing files.				
13	I feel confident troubleshooting computer problems.				
14	I feel confident understanding the three stages of data processing: input, processing, and output.				
15	I feel confident learning to use a variety of programs (software).				
16	I feel confident using the computer to analyse number data.				
17	I feel confident learning advanced skills within a specific program (software).				
18	I feel confident using the computer to organize information.				

19	I feel confident using the user's guide when help is needed.				
20	I feel confident getting help for problems in the computer system.				
21	I feel confident working on a computer network				

Instruction: Kindly indicate how many times you use the listed resources by ticking (√) the appropriate box

S/N	**The frequency of my use of the following e-resources is:**	Not at all in a semester	Once in a semester	Twice in a semester	Three times in a semester	Four times in a semester	Five or more times in a semester
1	Electronic books						
2	Electronic Journals						
3	Electronic Thesis						
4	Full text databases						
5	Electronic magazine						
6	Electronic newspaper						
7	Online databases (e.g. HINARI, AGORA, JSTOR, etc.)						
8	CD-ROMs						
9	OPAC						
10	Search Engines						
11	E-standard						
12	E-patent						
13	Online indexes						
14	Online abstracts						