# Descriptive Study of Information Literacy Skills and Utilization of Electronic Information Resources by Undergraduate Computer Science Students in Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria

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## Abstract

*The study explored information literacy skills and utilization of electronic information resources by undergraduate Computer Science students in Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria. The study adopted descriptive research design, with a population of 398 students comprising 300 and 400 levels students. A sample of 199 students representing 50% of the study population was selected using proportionate stratified sampling technique. A researchers' structured questionnaire, validated with a reliability coefficient index of 0.81 was used for data collection. The data were analysed using descriptive statistical tools of frequency counts, mean scores and standard deviations. The findings of the study revealed that the undergraduate students' level of information literacy skills is low, even though they have basic information literacy abilities. It indicated that information literacy skills of the students facilitate the ease of searching, and identifying relevant electronic information sources for quality academic writings using electronic information sources. It also revealed that the perception of the students toward information literacy skills and utilization of electronic information resources is moderately positive. The study concluded that information literacy skills are the major determinants of utilization of electronic information resources by undergraduate students. Thus, it recommended, among other measures, that management of universities should incorporate information literacy course into the curriculum of every programme to enable undergraduate students learn and acquire information literacy skills.*

Keywords: Information Literacy Skills, Utilization, Electronic Information Resources, Undergraduate Students, Computer Science.

**Introduction**

The present information age necessarily requires students across various academic programmes to equip themselves with information literacy skills. The rationale for this is to enable them effectively deal with the continuous flow and proliferation of information in various media and formats. Information literacy skills are indispensable in successfully marshaling the current streams of misinformation and disinformation across every stratum of the modern society. As a matter of fact, the justification for undergraduate students to acquire information literacy skills is that they are students in the universities who are studying for their first degree. Undergraduate students are those students studying towards the acquisition of a bachelor's degree in various academic disciplines (Folorunso & Njoku, 2016). They are constantly challenged by multiple flow of information and confusing demands for information. They need to learn information literacy skills to be able to effectively search, obtain, scrutinize and utilize available electronic information resources in satisfying their information, educational, research and recreational needs.

Information literacy skills have become a sine-qua-non requirement for effective learning and intellectual development. According to the Association of College and Research Libraries (ACRL) (2016), information literacy skills is defined as a set of integrated abilities and competencies that encompass the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning. Information literacy skills entail the ability to identify information needs, find information, evaluate information sources, organize, use, and communicate information in all its various formats, most notably in situations requiring decision making, problem solving, or the acquisition of knowledge. (Chukwu et al., 2021; Fajonyomi et al., 2021; Udoh & Okafor, 2022).

Information literacy skills are the sum of all skills needed for efficient, effective and productive use of information and information tools. This set of integrative skills is a must-possessed skills by undergraduate students. It is quite essential for undergraduate students to enable them develop critical thinking and independent lifelong learning skills, as well as effective writing in the intellectual world. Information literacy skills facilitate the utilization, application or deployment of electronic information resources, which are information resources available and accessible via electronic media such as e-books, e-journals, e-reference sources, etc. (Babalola et al., 2021; Udoh et al., 2020). Obuh, as cited in Sahabi and Omagbon (2020) defined electronic information resources as information documents that can only be accessed in the library electronically, using information communication technologies (ICT) facilities.

Meanwhile, the utilization of electronic information resources may be typically influenced by the degree of information literacy skills of the students. This, to a large extent, implies that information literacy skills facilitate the utilization of electronic information resources, which assures undergraduate students of reliable and right

information at the right time. From the above background, therefore, this study explores information literacy skills and utilization of electronic information resources by undergraduate Computer Science students in Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria.

**Statement of the Problem**
Utilization of electronic information resources by undergraduate students for the attainment of various academic purposes has become a core concern in the present information-saturated environment. Electronic information resources are of great importance in fulfilling academic, research, intellectual, recreational and other information-driven purposes of undergraduate students in universities. They provide the ease and convenient of access and retrieval across geographical boundaries and time. However, effective, satisfactory and purposed-driven utilization of electronic information resources requires essential skills such as information literacy skills. But in spite of the advantages inherent in electronic information resources, studies revealed that electronic information resources are underutilized by undergraduate students in Nigerian universities due to poor information literacy skills (Ajayi et al., 2014; Sakhawat et al., 2021). More so, preliminary observations by these researchers confirmed that information literacy skills of undergraduate students and utilization of electronic information resources in most universities is quite below expectation. It is also an issue of investigation as there is an observed gap in most academic disciplines, where undergraduate students are made to focus more on courses directly related to their programmes, without proper measures by the universities to ensure that all undergraduate students acquire information literacy skills as lifelong skills. Thus, based on this backdrop, the study explores information literacy skills and utilization of electronic information resources by undergraduate Computer Science students in Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria.

**Research Objectives**
The specific objectives of this study are, to:
   i.      Assess the information literacy skills of undergraduate Computer Science students for the utilization of electronic information resources in MOUAU?
   ii.     Examine the influence of information literacy skills of undergraduate Computer Science students on their utilization of electronic information resources in MOUAU?
   iii.    Determine the perception of undergraduate Computer Science students toward information literacy skills and utilization of electronic information resources in MOUAU?

**Review of Related Literature**
The literature review covered conceptual clarifications on information literacy skills, electronic information resources, utilization of electronic information resources and the gains of possessing information literacy skills. The study also reviewed some empirical

studies on information literacy skills and utilization of electronic information resources by undergraduate students.

**Conceptual Considerations of Information Literacy Skills and Utilization of Electronic Information Resources**

For better understanding of this study, it is pertinent to x-ray some fundamental concepts. The Chattered Institute of Library and Information Professionals [CILIP] Information Literacy Group (2018) defines information literacy skills as the embodiment of abilities and competencies to think critically and make balanced judgements about any information we find and use. Udoh and Okafor (2022) conceive information literacy skills as one of the various forms of literacy skills that are becoming essential skills for today's survival and professional effectiveness, which embeds critical fundamental skills, abilities and competencies that drive an information literate person, society or group. In the same vein, Fajonyomi et al. (2021) posit that information literacy skills are the ability to place, manage, critically assess and use information to solve problems, conduct researches and make decisions. It is also the embodiments of all competencies possess by an individual to make productive and systematic exploitation of information resources through searching, generating, using and communicating information to others (Julien & Boon, as cited in Sakhawat et al., 2021).

According to Babalola et al. (2021), electronic information resources refer to all the information resources which are available and accessible in various electronic formats. Electronic information resources could also be defined as information documents that can only be accessed in the library electronically, using information communication technologies (ICT) facilities, which include: e-books, e-journals, e-conference proceedings, e-dictionaries, e-encyclopaedias, e-newspapers, e-magazines, Online Public Access Catalogues (OPACs), Web public access catalogues (WebPAC), e-manuscripts, e-maps, e-thesis, e-dissertations, e-research reports, e-reference services, etc., (Odunewu & Aluko-Arowolo, 2018; Obuh, as cited in Sahabi & Omagbon, 2020; Udoh et al., 2020).

Utilization of electronic information resources refers to the practical use or application of available electronic information resources in the university library (Sahabi & Omagbon, 2020). Umar and Dangwaran (2023) also remark that utilization of electronic information resources entails making use of digital materials and databases to gain access, retrieve, and effectively benefit from information for diverse purposes, such as research, education, or personal enrichment. It serves as motivator for learners, and provides undergraduate students the opportunity to deliver, obtain, transfer and circulate information resources on any topic of interest (Kabir et al., 2021). Electronic information resources provide users reliable information, and right information for the right users. Utilization of electronic information resources help students to be well-informed and up-to-date in their respective areas of studies (Fabunmi et al., 2016). Effective utilization of electronic information resources requires information literacy skills, and enables the undergraduate students to meet their information, educational

and recreational needs (Adeniran, 2013). It helps in gathering and sourcing materials for research, online learning, communication with friends and colleagues, completing assignments, and for other social, political and economic purposes. It also offers improved access and increased efficiency in problem-solving through enhanced timeliness, search facilities, remote access and up-datedness of information resources (Felix et al., 2019; Sahabi et al., 2021).

**Empirical Considerations of Information Literacy Skills and Utilization of Electronic Information Resources**

Information literacy skills and utilization of electronic information resources has increasingly been the object of empirical investigations in many parts of the world including Nigeria. Ebijuwa and Oladejo (2023) investigated digital literacy and online information searching strategies as determinants of electronic resources' use among students of selected universities in Nigeria. The study adopted a descriptive survey research design, and discovered that undergraduates had a high level of digital literacy and their use of electronic resources. It concluded that online information searching strategies inventory and digital literacy jointly predicted the undergraduates' electronic resources' use significantly. Oseghale (2023) examined the level of digital information literacy skill and use of electronic resources by humanities graduate students at Kenneth Dike Library, University of Ibadan, Nigeria. The study adopted a survey research design and found the students possessed high level of digital information literacy skills in respect of digital devices usage, web-based tasks, information finding and evaluation. It identified inadequate knowledge of e-resources availability, irregular internet access, inadequate training on e-resources utilization, inadequate staff assistance, lack of continuity in e-resources subscription and paucity of local contents in the e-resources as main challenges encountered by the students in the use of e-resources.

Mamman and Abubakar (2022) studied the challenges of access and use of electronic information resources among students of higher institutions in Taraba State, Nigeria. The study adopted a cross-sectional survey design, and found that various types of electronic information resources such as e-books, online databases, e-journals, and CD-ROMs were available in the higher institutions libraries in Taraba State. It revealed that the extent of access to the available EIRs was moderate but were affected by poor internet connectivity, insufficient computer terminals, inadequacy of ICT skills, etc. Ogunbodede et al. (2022) also investigated students' perceptions and the use of digital resources at the University of Africa, Bayelsa State. The study reported a positive students' perception and high level of usage of digital resources. It revealed that inadequate information retrieval skills, poor Internet connectivity, and lack of time to search for suitable resources were some of the challenges in the use of digital resources.

Moreover, Kabir et al. (2021) evaluated information literacy skills as a factor influencing use of electronic information resources by undergraduate students in

selected federal university libraries in North-West, Nigeria. The study revealed that high level of information literacy skills of the students reflected in their ability to define information needed, select information that most appropriately met their needs, identify different sources of information, and capability to organize, apply and communicate information to others. Babalola et al. (2021) equally investigated information literacy skills as predictor of use of electronic information resources by undergraduate students of Bayero University Kano, Nigeria. The study showed that most of the undergraduate students possessed high level of information literacy skills, which enabled them to access up-to-date information for their learning and research works.

Furthermore, Olatoye et al. (2020) studied the determinants of undergraduate students' attitude and perception towards the use of electronic information resources among undergraduate students in selected universities in Eastern Cape, South Africa. The study adopted a descriptive survey design, with purposive and proportionate stratified random sampling techniques in selecting the population and sample size. It revealed that the students usually encounter difficulties which negatively influence their attitudes and behaviour in their utilization of electronic information resources. It showed that that there is a significant correlation regarding the perception and attitude of undergraduate students towards the frequency and utilization of e-information resources. The study pointed out that additional special computing skills are required for students to be competent enough in effectively utilizing electronic information resources, even as too much information on the Internet, high cost of Internet access, inadequate computer workstations, low ICT literacy skills, inaccessibility to some databases, etc., were the constraints to use of electronic information resources in the universities. Adekunle et al. (2019) investigated the attitude of undergraduate students to information literacy with particular focus on examining the rationale behind undergraduates' apathy for information literacy programme at Bowen University, Nigeria. The study showed that students' attitude significantly influences their information literacy skills. It disclosed that students' erroneous equation of technology literacy and information literacy was largely responsible for the students' lukewarm disposition to information literacy.

Ekong and Ekong (2018) also investigated the impact of information literacy skills on the use of e-library resources among tertiary institution students in Akwa Ibom State. The study adopted ex-post facto research design. It revealed that the quality and volume of academic works are largely influenced by the information literacy skills possessed by the students for the use of electronic resources. It also showed that there is a significant strong positive correlation between the students' information literacy skills and academic performance through the use of e-resources. It also showed that the effect of information literacy skills on the use of computer and information technologies are evident in the students' academic performance, as information literacy skills contribute positively to the use of computer information technologies and resources.

From the above studies, it could be deduced that information literacy skills have serious implications on the utilization of electronic information resources by undergraduate students in universities. However, there is a gap in literature as it is observed by these researchers that no study explored the information literacy skills and utilization of electronic information resources by undergraduate Computer Science students in Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria. Thus, this study intends to fill the gap.

**Methodology**
The descriptive survey research design was adopted for this study. The research design was considered appropriate in order to systematically describe the attitudes and behaviours of the undergraduate students of Computer Science in Michael Okpara University of Agriculture on the study phenomenon. The study was conducted at Umudike, a community in Ikwuano Local Governement Area, Abia State, Nigeria. Umudike is where the Michael Okpara University of Agriculture is situated. The population of the study was three hundred and ninety-eight (398) undergraduate Computer Science students. This comprises two hundred and twenty (220) third year (300 level) students and one hundred and seventy-eight (178) final year (400 level) students for the 2022/2023 academic session of the Department of Computer Science. The study's sample was 199 students, representing 50% of the study population, which was considered on the basis of ease of reach and convenience. The proportionate stratified sampling technique was used to select the sample, as a means of giving each member of the strata - 300 level students (178) and 400 level students (220) equal chance of being selected for the study. Data for the study was collected using a self-structured questionnaire. The questionnaire was validated by 3 research experts and subjected to a reliability test using Cronbach's Alpha formula, which yielded 0.81 reliability coefficient index. The questionnaire distribution process yielded 91% response rate, with 181 completed and retrieved copies of questionnaire with valid information. The data collected was coded and analysed using the Statistical Package for Social Science (SPSS -Version 23) and descriptive statistical tools of frequency counts, mean scores and standard deviations.

**Results and Discussion of Findings**
Data presentation was carried out in accordance with the specific research objectives. It relied on the number of respondents who completed and returned the questionnaire with valid information.

**Table 1:** Mean Responses on the Information Literacy Skills of Undergraduate Computer Science Students for Utilization of Electronic Information Resources in MOUAU (n = 181)

| S/N | Item Statements | SA | A | D | SD | Mean | Std. Dev. | Decision |
|-----|-----------------|----|----|----|----|----|----|----|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | I have the ability to identify information need | 39 | 89 | 32 | 21 | 2.81 | 0.907 | *Agreed* |
| 2 | I can define why I need information | 26 | 91 | 52 | 12 | 2.71 | 0.789 | *Agreed* |
| 3 | I know available sources of information | 11 | 123 | 40 | 7 | 2.76 | 0.618 | *Agreed* |
| 4 | I can find information using various search strategies | 21 | 69 | 60 | 31 | 2.44 | 0.909 | *Disagreed* |
| 5 | I can work with information for desired purpose | 31 | 123 | 21 | 6 | 2.99 | 0.650 | *Agreed* |
| 6 | I can evaluate the results obtained from information | 27 | 94 | 53 | 7 | 2.78 | 0.742 | *Agreed* |
| 7 | I can synthesize information for complex needs | 17 | 55 | 60 | 49 | 2.22 | 0.952 | *Disagreed* |
| 8 | I understand ethical issues about the use of information like copyright, etc. | 24 | 49 | 53 | 55 | 2.23 | 1.028 | *Disagreed* |
| 9 | I can share the results of information in scientific papers, etc. | 19 | 32 | 94 | 36 | 2.19 | 0.874 | *Disagreed* |
| 10 | I can assess the economic implications of information | 26 | 33 | 76 | 46 | 2.22 | 0.985 | *Disagreed* |
| | ***Grand Mean*** | | | | | **2.54** | | ***Agreed*** |

*Source: Researcher's Field Survey, 2024*     **Criterion Mean 2.50**

Data on Table 1 reveals the mean responses on the information literacy skills of undergraduate Computer Science students for the utilization of electronic information resources. It shows a grand mean of 2.54 against the 2.50 criterion mean. This clearly indicates that the students' level of information literacy skills is low. The results specifically shows that the students have the ability work with information for desired purpose (2.99); identify information need (2.81); evaluate the results obtained from information (2.78); know available sources of information (2.76); and define why information is needed (2.71). On the contrary, the students lack higher level of information literacy skills such as: the ability to find information using various search

strategies (2.44); understand ethical issues about the use of information like copyright, etc. (2.23); synthesize information for complex needs (2.22); assess the economic implications of information (2.22); and share the results of information in scientific papers, etc. (2.19). This finding partially disagrees with Babalola et al. (2021); Kabir et al. (2021); and Oseghale (2023), which revealed that undergraduate students possess high level of information literacy skills, which reflected in their ability to define information needed, select information that most appropriately met their needs, and capability to organize, apply and communicate information to others. This finding portrays a typical reality that most students possess a low level of information literacy skills and this affects critical assessment and utilization of electronic information resources in the universities.

Table 2: Mean Responses on the Influence of Information Literacy Skills of Undergraduate Computer Science Students on Utilization of Electronic Information Resources in MOUAU (n = 181)

| S/N | Item Statements | SA | A | D | SD | Mean | Std. Dev. | Decision |
|---|---|---|---|---|---|---|---|---|
| 1 | ILS helps me in easily accessing electronic information resources | 56 | 68 | 50 | 7 | 2.96 | 0.862 | *Agreed* |
| 2 | ILS improves my capability of identifying relevant electronic information sources | 52 | 71 | 51 | 7 | 2.93 | 0.850 | *Agreed* |
| 3 | ILS helps me in searching electronic media for information | 68 | 69 | 33 | 11 | 3.07 | 0.895 | *Agreed* |
| 4 | ILS helps me in quickly retrieving electronic information resources | 28 | 43 | 59 | 51 | 2.27 | 1.036 | *Disagreed* |
| 5 | ILS helps me in quality academic writings using electronic information sources | 44 | 81 | 40 | 16 | 2.85 | 0.893 | *Agreed* |
| 6 | ILS helps me to easily add up existing knowledge | 24 | 51 | 68 | 37 | 2.34 | 0.953 | *Disagreed* |
| 7 | ILS helps me in problem solving like doing assignments, etc. | 44 | 66 | 58 | 13 | 2.78 | 0.898 | *Agreed* |
| 8 | ILS helps me to easily publish research papers | 18 | 33 | 80 | 50 | 2.10 | 0.922 | *Disagreed* |
| 9 | ILS helps evaluating integrity of electronic information sources | 22 | 34 | 45 | 80 | 1.99 | 1.059 | *Disagreed* |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Grand Mean** | | | | | **2.59** | | **Agreed** |

**Source: Researcher's Field Survey, 2024**          **Criterion Mean 2.50**

Data on Table 2 shows the mean responses on the influence of information literacy skills of undergraduate Computer Science students on the utilization of electronic information resources in MOUAU, with a grand mean of 2.59 against the criterion mean of 2.50. The results reveal that acquisition of information literacy skills is important for undergraduate Computer Science students by enabling them to effectively search electronic media for information (3.07); easily access electronic information resources (2.96); improving their capability of identifying relevant electronic information sources (2.93); carrying out quality academic writings using electronic information sources (2.85); and engaging in problem-solving like doing assignments, etc. (2.78). This finding partly aligns with Ekong and Ekong (2018), which found that the quality and volume of academic works are largely influenced by the information literacy skills possessed by the students for the use of electronic resources.

Table 3:       Mean Responses on the Perception of Undergraduate Computer Science Students Toward Information Literacy Skills and Utilization of Electronic Information Resources in MOUAU (n = 181)

| S/N | Item Statements | SA | A | D | SD | Mean | Std. Dev. | Decision |
|---|---|---|---|---|---|---|---|---|
| 1 | I enjoy lectures in information literacy courses | 40 | 96 | 28 | 17 | 2.88 | 0.861 | *Agreed* |
| 2 | I benefit from information literacy trainings | 50 | 76 | 38 | 17 | 2.88 | 0.923 | *Agreed* |
| 3 | I pay rapt attention during information literacy classes | 56 | 78 | 29 | 18 | 2.95 | 0.933 | *Agreed* |
| 4 | I do not attend information literacy classes | 26 | 30 | 68 | 57 | 2.14 | 1.021 | *Disagreed* |
| 5 | Librarians teach me a lot about information literacy skills | 30 | 54 | 51 | 46 | 2.38 | 1.039 | *Disagreed* |
| 6 | I utilize electronic information resources regularly | 37 | 81 | 51 | 12 | 2.79 | 0.843 | *Agreed* |
| 7 | I feel information literacy skills shape my perception about utilizing electronic information | 41 | 76 | 45 | 19 | 2.77 | 0.920 | *Agreed* |

resources

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 8 | I dislike information literacy courses | 18 | 54 | 48 | 61 | 2.16 | 1.007 | *Disagreed* |
| 9 | Electronic information resources are not relevant to my discipline | 25 | 46 | 47 | 63 | 2.18 | 1.062 | *Disagreed* |
| | ***Grand Mean*** | | | | | ***2.57*** | | ***Agreed*** |

***Source: Researcher's Field Survey, 2024***        ***Criterion Mean 2.50***

Data on Table 3 indicates the mean responses on the perception of undergraduate Computer Science students toward information literacy skills and utilization of electronic information resources, with a grand mean of 2.57 against the 2.50 criterion mean. The results reveal a mixed perception by the students toward information literacy skills and utilization of electronic information resources with 4 of the 9 items disagreed upon. It shows that majority of the students agreed that they pay rapt attention during information literacy classes (2.95); enjoy lectures in information literacy courses (2.88); benefit from information literacy trainings (2.88); utilize electronic information resources regularly (2.79); and feel that information literacy skills shape their perception about utilizing electronic information resources (2.77). On the contrary, the results reveal disagreement on the items that tried to establish if librarians teach them a lot about information literacy skills (2.38); if electronic information resources are not relevant to their discipline (2.18); if they dislike information literacy courses (2.16); and if they have not attended information literacy classes (2.14). This result shows that the overall perception of the students toward information literacy skills and utilization of electronic information resources is positive. The finding agrees with Ogunbodede et al. (2022), which reported a positive students' perception and high level of usage of digital resources, but were negatively affected by inadequate information retrieval skills, poor Internet connectivity, and lack of time to search for suitable resources. The finding also corroborates Olatoye et al. (2020), which indicated that students usually encounter difficulties which negatively influence their attitudes and behaviour in their utilization of electronic information resources.

**Summary of the Findings**
The findings of this study revealed that information literacy skills of undergraduate students form the major determinant of utilization of electronic information resources, which in turn affect quality learning, writing and intellectual development. However, this study specifically indicated that the undergraduate Computer Science students' level of information literacy skills is low, as they lack higher level of information literacy skills such as: ability to find information via various search strategies, understand ethical issues about the use of information like copyright, and synthesize information for complex information needs. This implies that the undergraduate

Computer Science students are not properly trained in information literacy, and they may not effectively fit into the requirements of the information and knowledge society. They may also have challenges dealing with information explosion of the modern society. This therefore calls for concerted efforts by all stakeholders in the university system, especially Michael Okpara University of Agriculture, Umudike, in order to enhance the information literacy skills of the undergraduate Computer Science students for better utilization of electronic information resources.

**Conclusion**

From the findings of this study, it has been discovered that information literacy skills constitute essential capabilities for effective utilization of electronic information resources by undergraduate students. Information literacy skills facilitate the ease of searching, accessing and retrieving electronic information from various electronic media. It helps in improving the capabilities of students in identifying relevant electronic information sources, as well as enhancing the quality of academic writings, problem-solving such as doing assignments and research writings using electronic information resources. This study concludes that the perception of the undergraduate Computer Science students toward information literacy skills and utilization of electronic information resources is moderately positive.

**Recommendations**

Based on the findings of this study, the following recommendations are made:

i. Management of universities and university libraries should improve learning opportunities through incorporation of information literacy courses into their curriculum as well as provide adequate facilities such as constant power supply and Internet services for the acquisition of information literacy skills and utilization of electronic information resources.

ii. Lecturers and librarians should improve their teaching and pedagogical strategies to deliver effective information literacy training to undergraduate students in order to enhance their information literacy skills for utilization of electronic information resources.

iii. Undergraduate students should demonstrate more determination and exhibit positive perception in learning and acquiring information literacy skills for utilization of electronic information resources.

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