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The Role of Electronic Publishing in Providing Information Services

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Abstract---The Internet is one of the most significant achievements of modern technological advancements, enabling individuals to access any information or service they need from anywhere in the world. The acquisition of knowledge has evolved, now relying on electronic technologies that facilitate rapid access to information, minimizing both time and effort. This transformation has eliminated the need for researchers to physically travel in search of information, as various digital tools—such as e-books and electronic journals—have revolutionized teaching and academic learning through electronic publishing. The significance of electronic publishing lies in its role as one of the most advanced information technologies in the era of the digital revolution. It enables seamless access to diverse information in a virtual space, allowing users to retrieve content with the mere click of a button. Moreover, electronic publishing has contributed to saving time and effort while reducing costs related to travel, printing, and other logistical aspects. This digital shift fosters interactivity and optimizes space utilization by eliminating the need for traditional printed documents, replacing them with electronic devices (such as computers) that store a wide range of digital materials, which can be easily retrieved at any time.

Keywords---Electronic Publishing, Digital Information, E-Book, Internet.

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Introduction

Modern societies have witnessed the emergence of new strategies in the field of information technology, leading to the development of what is known as the information system. This system extends beyond the traditional computer—comprising a screen and keyboard—to encompass all devices and software that process, manage, generate, transmit, and store data and information. The contemporary technological revolution has introduced a completely new and dynamic approach to education and teaching methods, to the extent that this era is often referred to as the "Information Age.[1]" Among its most remarkable technological advancements is the Internet, which has transformed the way information is accessed and shared. This shift has paved the way for digital platforms and websites where ideas are expressed through digital imagery, aligning with the demands of digital civilization[2]. The Internet has enabled individuals to obtain information effortlessly, without the need for specialized codes or specific computer devices, and it can be accessed from anywhere in the world.
Information is no longer confined to a particular place or time. The Internet has rapidly attracted a vast number of users, surpassing any other medium in a short period. By breaking spatial and physical barriers, it has become a powerful tool for shaping social structures and fostering communication. This has facilitated individuals in meeting their informational needs, whether related to their studies, professions, or daily lives.

Since this study explores new approaches and innovative methods that have become integral to knowledge acquisition and information services, it is imperative to focus on modern information technologies. The ability to store and retrieve information efficiently has become essential. Consequently, transitioning from traditional methods of information dissemination to digital solutions is necessary to keep pace with the digital knowledge era. This transformation has introduced more accessible means of acquiring information, with electronic publishing emerging as the most prominent—if not the fundamental—modern tool in digital knowledge and e-learning services.

Accordingly, this study seeks to address the following central question:
What impact does electronic publishing have on the provision of information services?
Section One: Conceptual Foundation of Electronic Publishing
At the beginning of this study, it is essential to define the concept of electronic publishing, clarify its characteristics, and outline its objectives, as detailed in the following sections:
Subsection One: Definition of Electronic Publishing
Linguistically, the term "publishing" refers to broadcasting and publicizing—making something known or generally accessible to people.[3]
The term "electronic publishing" describes the process of producing books, periodicals (whether for entertainment, educational, or other informational purposes), and various other information media using diverse modern technologies. These technologies include computers and high-speed automated typesetting machines.
Additionally, electronic publishing involves the use of advanced devices such as optical scanners to input original texts written by authors into computers. These texts are then recognized using optical character recognition (OCR) software.[4]
Electronic publishing is the process of presenting printed-based materials, such as books and academic research, in a format that can be received and read online. This format is characterized by being

[1] Mohammad Awad Al-Tartouri, Mohammad Zayed Al-Raqab, Nasher Mustafa Al-Nasser, *Total Quality Management in Libraries and University Information Centers*, Al-Khaldounia Publishing and Distribution House, Amman, 2008, p. 19.
[2] Khaled Mamdouh Ibrahim, *Internet Governance*, University Thought Publishing House, 1st Edition, Alexandria, 2011, p. 269.
[3] Wafaa Ahmed Saeed Al-Bayati, *The Impact of Electronic Publishing and the Digital Library on the Advancement of Arab Heritage*, **Journal of Arab Scientific Heritage**, Issue 2, 2012, p. 229
[4] Rabhi Mustafa Alean, Iman Al-Samarrai, *Electronic Publishing*, Safa Publishing and Distribution House, 1st Edition, Amman, 2010, p. 42

compressed and supported by multimedia elements such as audio, graphics, and hyperlinks, which connect the reader to supplementary information or external websites.[5]
Moreover, electronic publishing involves the storage, processing, and digital presentation of information, organized in a structured document format. These documents can be produced as printed copies or displayed electronically. They may contain textual information, images, or computer-generated graphics.[6]

Electronic publishing is the process of producing a written work using electronic means, particularly computers, either directly or through a communication network. It also refers to a series of computer-assisted operations that facilitate the creation, storage, and identification of informational content for dissemination to a specific community of beneficiaries.[7]

Based on the previous definitions, an operational definition of electronic publishing can be given as a modern technological method that allows access to information through new digital means. It is based on storing information in formats that can be received and accessed via the internet. This technology simplifies access for researchers and service seekers, enabling them to obtain the information they need quickly and easily without relying on traditional methods that require significant effort, time, and financial resources.

In other words, electronic publishing is an innovative way of composing[8] and making information available across various fields using precise technologies that require specialists in information science and technology. These experts manage information and establish connections between authors and users within the general framework of information networks. This form of publishing differs from traditional publishing, which relies on printed books, journals, and periodicals. Instead, electronic publishing utilizes digital storage media, such as CDs and computer networks, which have the remarkable ability to store vast amounts of diverse information and data[9]. It is carried out through laser discs or web-based platforms.

Looking at the current reality, we find that the nature of our surrounding social environment, in all its forms, has compelled us to adapt to the advancements of the digital revolution in an unprecedented way. This revolution has enabled the storage and processing of vast volumes of digital, textual, bibliographic, and audio data[10] while allowing for the rapid retrieval of information at a reasonable cost.
Based on this, numerous terms have emerged that are closely linked to modern technology, fundamentally revolving around electronic publishing. These include **e-commerce, e-learning, and digital libraries**. Even traditionally printed materials no longer fully meet users' needs in the face of the ever-changing world of information technology. This is due to the widespread use of the internet, which has greatly facilitated the rapid transfer of information from analog systems to more precise and clear digital formats[11]. This transformation has impacted various aspects of **information production, management, and distribution** to users.

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[5] Ahmed Nafi' Al-Midadhah, *Electronic Publishing and Information Protection*, Safa Publishing and Distribution House, 1st Edition, Amman, 2011, p. 30.
[6] Khaled Abdu Al-Saraira, *Electronic Publishing and Its Impact on Libraries and Information Centers*, Kunooz Al-Ma'rifa Scientific Publishing and Distribution House, 1st Edition, Amman, 2008, p. 21.
[7] Ghaleb Awad Al-Nawaiseh, *The Internet and Electronic Publishing: E-Books and Periodicals*, Safa Publishing and Distribution House, 1st Edition, Amman, 2011, p. 182
[8] Ahmed Youssef Hafez Ahmed, *Electronic Publishing*, Nahdat Misr Publishing and Distribution House, 1st Edition, Egypt, 2013, p. 24.
[9] Mohamed Fathy Abdel Hadi, Abu Al-Saud Ibrahim, *Electronic Publishing and Electronic Information Sources*, Dar Al-Thaqafa Al-Ilmiya, p. 9.
[10] Omar Ahmed Hamshari, *Modern Library and Information Center Management*, Safa Publishing and Distribution House, 2nd Edition, Amman, 2014, p. 360.
[11] Ahmed Youssef Hafez Ahmed, *Previously cited reference*, p. 26.

The Importance of Electronic Publishing

The significance of electronic publishing can be summarized in the following points:[12]

- **Enhanced access, retrieval, and storage of information.**
- **Reduced reliance on library specialists.**
- **Provision of information services to a broader audience.**
- **Lower costs, improved circulation mechanisms, and easier content updates.**

Subsection Two: Characteristics of Electronic Publishing

Electronic publishing relies on a set of characteristics that have played a crucial role in moving away from traditional print publishing and embracing digital publishing, where the internet serves as the primary medium for publication and distribution. The most significant of these characteristics include:[13]

A – Cost Reduction

Electronic publishing is a cost-effective method for both publishers and researchers. It eliminates expenses related to printing, distribution, and shipping, which are typically required for printed books and journals. Instead, distribution is conducted via the internet, which acts as a carrier of information.

Furthermore, researchers can publish their work electronically from their own websites, making it accessible to scholars worldwide at any time without incurring the costs of photocopying or transportation[14]. Since electronic publishing relies solely on the internet for information dissemination, access is only possible if the data is stored online or locally on the user's personal computer.

B – Time Efficiency

Saving time is a fundamental advantage of electronic publishing, especially compared to traditional methods of information retrieval. In conventional research, whether through newspapers, journals, or books, readers must spend considerable time searching for the information they need. However, in electronic research, this issue is virtually nonexistent.

A researcher or internet user does not have to search through physical books in libraries or contact others to obtain references or theses. Electronic publishing significantly reduces the time and effort required, allowing users to access specific content quickly and efficiently without needing to read an entire document[15].

Search engines further enhance this efficiency by enabling users to find information through multiple entry points, such as keywords, topics, authors, publishers, or academic institutions.

C – Quick Access to Updated Information

The rapid pace of modern life necessitates a communication tool that aligns with this speed, making it easier for individuals to obtain various types of information needed to meet their requirements. Electronic publishing fulfills this need, whether through **email, websites, or**

Regardless of whether the publication originates directly from the author or is submitted to an editorial board for electronic dissemination, some aspects of digital publishing resemble traditional print journalism in terms of **practical, professional, and even legal frameworks**, while others differ significantly.

Electronic publishing is an **instantaneous medium** that not only saves time but also keeps pace with the fast-changing world. One of its most powerful advantages is **continuous information updates**, where new data can be added within seconds, ensuring that users always have access to the most recent and relevant information[16].

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[12] Ahmed Nafi' Al-Midadhah, *Previously cited reference*, p. 32.

[13] Ghaleb Awad Al-Nawaiseh, *Previously cited reference*, p. 201.

[14] Khaled Mamdouh Ibrahim, *Previously cited reference*, p. 274.

[15] Mourad Karim, *Electronic Publishing and the Library of the Future*, **Library and Information Journal**, Part 2, Issue 4, 2005, p. 147

[16] Yaqub bin Mohammed Al-Harithi, *Civil Liability for Electronic Publishing*, Wael Publishing House, 1st Edition, Amman, 2015, p. 15.

D – Interactivity

Interactivity is one of the key features of modern technology, as it transforms communication into a **social process** in which all parties contribute to constructing and shaping the content of a message while also exchanging information dynamically[17].

Through **hyperlinks**, electronic publishing allows readers to access additional information or related websites while reading. This mechanism also facilitates **easy modification and refinement of information**, ensuring that users always access the most up-to-date content without the need for reprinting books or issuing revised versions of documents[18].

This **interactive nature** fosters a more engaging exchange of information and communication, enabling a new form of **remote cultural dialogue** through digital publishing platforms. These platforms serve as virtual forums for discussion, allowing users to share and expand on ideas in ways that traditional publishing cannot offer.[19]

Based on the **aforementioned characteristics**, it is clear that **modern technology relies heavily on digital publishing**. The increasing impact of **information and digital revolutions** on contemporary society—whether directly or indirectly[20]—has interconnected the world, creating a unified **information-based society** that demands **speed, accuracy, comprehensiveness, and minimal effort** in accessing knowledge, regardless of its location.

Electronic publishing has thus provided researchers with an **efficient and accessible** means of conducting their work, requiring only basic experience in **internet navigation**. Additionally, computer technology has **revolutionized** the design, organization, and functionality of **information systems and networks**, exceeding expectations in expanding **library and research services**. This has, to a great extent, realized the vision of a **"library without walls.[21]"**

To ensure that **electronic publishing effectively enhances academic research and digital studies**, it follows a structured process consisting of several stages:

1. **Content Acquisition** – The foundation of electronic publishing.
2. **Automated Processing** – Utilizing the internet or multimedia tools for content management.
3. **Document Preparation** – Including text entry, spell-checking, and embedding unique codes to define the document's internal structure.
4. **Integration of Hypertext & Multimedia Elements** – To enhance content accessibility and usability.
5. **Automated Indexing** – Extracting keywords that summarize the document's content.
6. **Security Measures** – Protecting document integrity and ensuring confidentiality[22].
7. **Publication Standards** – Enabling **automatic text reading** for seamless user experience.

Section Two: The Impact of Electronic Publishing on Providing Information Services for Researchers

Scientific research serves as the beacon of every academic institution striving to establish an advanced knowledge society[23] and find solutions to the challenges faced by the community to which the researcher belongs. The advent of digital technology has provided more effective opportunities for enhancing scientific research and advancing higher education by promoting the application of

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[17] Ahmed Nafi' Al-Midadhah, *Previously cited reference*, p. 36.

[18] Nassima Fatima Zahra, *Scientific Research and the Internet: Between Reality and Application*, **The 9th International Forum on Promoting Scientific Research**, Faculty of Economic, Commercial, and Management Sciences, JiL Research Center, Algeria, 2015, p. 7.

[19] Sawsan Ski, Mehri Chafika, *Measuring Interactivity in Mediated Communication through the New Digital Environment*, **Al-Zuhair Journal for Economic and Media Studies and Research**, Vol. 2, Issue 3, 2022, p. 62.

[20] Khaled Mamdouh Ibrahim, *Previously cited reference*, p. 275

[21] Mourad Karim, *Previously cited reference*, p. 147.

[22] Rabhi Mustafa Alean, Iman Al-Samarrai, *Previously cited reference*, p. 22.

[23] Amer Ibrahim Fandilji, Iman Fadel Al-Samarrai, *Previously cited reference*, [page number not provided].

contemporary educational technologies in the learning process[24]. Consequently, higher education institutions have developed an advanced and integrated system for managing e-learning in higher education, recognizing its role in delivering educational content in digital form.[25]
In most countries, electronic publishing has enabled researchers to publish their studies online for free, without financial or legal constraints. This accessibility allows a wider audience of readers and interested individuals to reach scientific publications freely, thereby expanding scientific knowledge and increasing the impact factor of both researchers and their affiliated institutions through citations and references to published articles and research.[26]

Like many other countries, Algeria has made significant efforts to digitize its higher education sector, which is considered a fundamental pillar of the nation's economic development and growth. This has been achieved by leveraging the role and impact of information and communication technology and adopting digital methods for processing, transmitting, and storing information[27]. Higher education institutions have integrated modern technology, particularly in the use of software and databases, and have made numerous efforts toward digitizing higher education and scientific research. Since 2006, Algeria has implemented a program that defines the responsibilities of the entities tasked with these efforts, including the National Committee for Virtual Education, Regional Evaluation Committees, the Directorate of Higher Education and Training, the Research Center for Scientific and Technical Information, and the University of Continuing Education[28]. The ultimate goal is to pioneer the development of scientific knowledge[29] through digital publishing platforms and make it accessible to researchers and learners via the Internet.

Subsection One: Digitization of Information and Its Availability Through Modern Technologies

Relying on electronic references for teaching and research has become essential for obtaining information, conducting research, and advancing knowledge in ways that align with technological advancements. This necessitates the creation of appropriate digital alternatives for researchers in the knowledge field, utilizing new technological mechanisms that differ from traditional learning and knowledge acquisition methods[30]. These innovations facilitate faster access to and use of information.
Like other state institutions, higher education institutions seek to benefit from the digitization of education and the integration of contemporary information technology into their academic systems. This enables them to enhance and develop higher education using modern tools and techniques that elevate its quality to international standards. Given that the means to achieve this are now readily available, universities can more effectively fulfill their functions and achieve their objectives, as stipulated by Algerian legislation in the second chapter of Executive Decree No. 03-279, issued on

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[24] Khaled Abdu Al-Saraira, *Previously cited reference*, p. 47.
[25] Abdelhaq Belaabed, *Towards Promoting Scientific Research in the UniversityInstitution*, **The 9th International Conference on Promoting Scientific Research**, Faculty of Economic, Commercial, and Management Sciences, JiL Research Center, Algeria, 2015, p. 1.
[26] Talal bin Hassan Kabli, Ibrahim Youssef Mohammed Mahmoud, *E-Learning*, Dar Al-Iman Library, 1st Edition, Saudi Arabia, 2012, p. 94.
[27] Ghazi Farouk, *The Role of E-Learning in Achieving Higher Education Quality*, **The 2nd International Forum on Ensuring Higher Education Quality: Field Experiences and Performance Indicators**, **20 August Universities Forum**, organized by: University of 8 May 1945 Guelma, University of Larbi Ben M'hidi Oum El Bouaghi, University of Mohamed Khider Biskra, University of Kasdi Merbah Ouargla, University of Larbi Tebessi Tebessa, held in Skikda, 2012, p. 88.
[28] Masrahad Bilal, Tebani Amal, Zamour Badr-Eddine, *Ways to Promote Scientific Publishing in Algeria: International Experiences*, **Al-Risala Journal for Human Studies and Research**, Vol. 7, Issue 6, Faculty of Humanities and Social Sciences, Larbi Tebessi University, Tebessa, Algeria, 2022, p. 628.
[29] Mohamed El-Amin Assoul, *The Role of Information and Communication Technology in Achieving Higher Education Quality*, **Doctoral Dissertation in Management Sciences**, Faculty of Economic, Commercial, and Management Sciences, Mohamed Khider University, Biskra, 2016, p. 141.
[30] Ghazi Farouk, *Previously cited reference*, p. 89.

August 23, 2003, which defines the university's missions and the rules governing its organization and operation[31].

There is no doubt that electronic publishing technology plays a crucial role in achieving these goals. It is not limited to education alone but also extends its services to various fields of life.
Providing information via the Internet is one of the most crucial services offered by electronic publishing in education, scientific research, and various other fields. This accessibility is the primary purpose of e-learning, aiming to enhance the quality of learning and research. Advanced technology has made it easier to publish scientific research, ensuring that students and scholars can access the materials they need, regardless of their location. This is achieved either by obtaining content directly from the authors or through digital archives[32], thanks to the widespread use of computers, the Internet, and other communication tools in education[33] and research. Consequently, the information industry has emerged as a result of the interconnection between information technology and telecommunications[34].
Electronic publishing plays a vital role in strengthening this connection by serving as a key digital tool for providing and accessing information. It has multiple applications, including the following:

A. Publishing Electronic Books
Electronic books (e-books) are a significant service of electronic publishing, providing essential academic resources for both universities and schools. Today, most educational institutions rely on e-books for teaching and research purposes. Traditionally, learning was based on printed references, requiring manual browsing[35] through physical books. However, digital books represent a technological shift, as they are digital versions of printed texts that can be accessed on personal computers or handheld devices[36].
An e-book is a file containing a published work, research paper, or dissertation formatted in a way that allows it to be read on electronic devices. These advanced digital formats enable users to browse and print content easily. The popularity of e-books has grown significantly, with numerous academic and commercial publishers[37] adopting them. Companies such as **Google** (through its large-scale e-book project), **Quista**, and **Net Library** [38]have created extensive e-book directories, offering users access to a wide range of digital books across different fields. These books are available in various formats, including **HTML** and **PDF**, allowing users to download them effortlessly.
As a result, educational institutions have increasingly integrated modern technology into their libraries, moving away from traditional systems where books were stored physically, cataloged, and loaned to researchers. Instead, digital libraries now operate through **servers** [39]and interconnected networks, enabling direct access to resources. This transformation allows users to retrieve information and electronic data remotely, from their homes or other private locations, without being physically present at a university.
In Algeria, electronic publishing has facilitated the involvement of key players in providing digital books, similar to international platforms like **Amazon**. Several initiatives have emerged in this field,

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[31] Dalila Hachin, *Difficulties of University Electronic Publishing: The Algerian Scientific Journals Platform as a Model*, **Dafater Al-Makbar Journal**, Vol. 16, Issue 1, Faculty of Humanities and Social Sciences, Mohamed Khider University, Biskra, 2021, p. 168.
[32] Jaafar Hassan Jassim, *Digital Libraries: Their Reality and Future*, Al-Bidaya Publishers and Distributors, 1st Edition, Amman, Jordan, 2012, p. 6
[33] Briza Bouzaib, *Digitization and Its Role in Modernizing Higher Education in Algeria*, **Journal of Public Service Quality for Sociological Studies and Administrative Development**, Vol. 5, Issue 2, **Laboratory of Public Service Quality Sociology**, Mohamed Boudiaf University, M'sila, 2022, p. 70.
[34] Khaled Abdu Al-Saraira, *Previously cited reference*, p. 58.
[35] Mansour Lakhadari, *The Impact of Digital Technology on the Quality of Scientific Research*, **The 11th International Conference on Learning in the Digital Technology Era**, **World Federation of Scientific Institutions**, Tripoli, Lebanon, 2016, p. 5.
[36] Saeed Mabrouk Ibrahim, *Libraries and Education in the Virtual Environment*, Dar Al-Wafaa for Printing and Publishing, 1st Edition, Alexandria, 2011, p. 83.
[37] Khaled Abdu Al-Saraira, *Previously cited reference*, p. 64.
[38] Ghaleb Awad Al-Nawaiseh, *Previously cited reference*, p. 308.
[39] Ahmed Nafi' Al-Midadhah, *Previously cited reference*, p. 42.

including **UNESCO's Global Open Access Portal**[40] **(Une porte ouverte)**. As of **February 2017**, this platform listed **18** Algerian digital archives, such as the **Virtual Library of the University of Algiers**, which is accessible through the largest global open-access repository network. Additionally, UNESCO highlights the **Ministry of Higher Education and Scientific Research** and the **Research Center for Scientific and Technical Information (CERIST)** as central institutions in shaping Algeria's scientific and technical information policies within universities.

Based on this research center, several programs and systems have been developed to enhance scientific research. One key initiative is the creation of a **digital library** for the **Research Center for Scientific and Technical Information (CERIST)**, available at **http://dl.cerist.dz**.[41] This platform provides a digital archive of various publications produced by the center. Additionally, the **Algerian Union Catalog** serves as a collective repository of documentary resources from Algerian libraries, encouraging collaboration and shared access among academic institutions.

B. Publishing Electronic Journals

Electronic journals are a crucial component of digital information sources, providing researchers with easy access to the information they need. No library or research center can function effectively without them. With the **explosion of information** and the growing volume of **intellectual production** in the form of journal articles, research institutions and libraries face increasing difficulties in subscribing to all available print journals worldwide[42]. This challenge is further compounded by the **high costs of printed journals** and the **rapid advancements in information and communication technologies (ICTs)**.

As a result, **higher education institutions and research centers** have gradually shifted from **owning** or **acquiring** traditional printed journals to a **subscription-based access model** for electronic journals. This transition has been facilitated by significant technological advancements, including the availability of modern devices and tools capable of handling electronic resources efficiently[43].

Electronic journals play a vital role in keeping pace with technological progress. They serve as **dynamic** and **interactive** digital platforms that are published periodically, often compiled by multiple authors under a fixed title. These journals are made available on **CD-ROMs, online platforms, or both**, ensuring broad accessibility.

Journals dedicated to **scientific research and academic studies** often require an **online subscription**[44], relying on **electronic publishing technologies** similar to those used for e-books. To ensure their **scientific credibility**, these journals undergo **peer review** by subject-matter experts who assess their academic value, the validity of their methodologies (particularly for experimental research), and the quality of their hypotheses[45].

One of the primary advantages of electronic journals is their **continuous availability**—researchers can **browse, search, and interact** with multiple journals simultaneously, accessing content instantly through **embedded hyperlinks** and digital archives.

From the above discussion, it is evident that **electronic publishing** is indeed the only **digital means** that ensures the availability of information in an accessible and efficient manner. As long as **the internet** is available, users can reach **information sources** regardless of geographical or temporal barriers. Electronic publishing in the **field of information science** ensures **accuracy and speed** in delivering services and retrieving information.

Subsection Two: Facilitating Users' Access to Information

Electronic publishing enables users to **access various sources of information** and benefit from **materials published in languages they do not master**. It also provides services that allow users to obtain **sections of documents that are not permitted for loan**. The services that facilitate **information access and utilization** are outlined below:

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[40] Ghaleb Awad Al-Nawaiseh, *Previously cited reference*, p. 318.

[41] Saeed Mabrouk Ibrahim, *Previously cited reference*, p. 18.

[42] Khoudjia Samiha Hanan, *Electronic Scientific Publishing in Algeria: Between the Hammer of Development and the Anvil of Legal Deficiency*, **Journal of Sharia and Law**, Vol. 48, Issue 3, 2021, p. 213.

[43] Khoudjia Samiha Hanan, *Previously cited reference*, p. 214.

[44] Khaled Abdu Al-Saraira, *Previously cited reference*, p. 105.

[45] Ghaleb Awad Al-Nawaiseh, *Previously cited reference*, p. 404.

A. Indexing Services

Indexing is the process of **analyzing the subject matter** of information resources and expressing their content through an **electronic indexing system**[46]. The growing **volume of intellectual production** in multiple languages has made **indexing services** essential, as it becomes difficult for users to locate specific information without **bibliographic control tools**.

Indexing has become an **important tool for researchers** to access **dependent intellectual production**, such as **journal articles, conference proceedings, institutional reports, and book contents**[47]. In the case of books, an index may include **the names of institutions, organizations, and key figures**.

Among different types of publications, **indexing journals** is of **particular importance** because they contain **the latest research and scientific studies**. Compared to other sources, **journals provide the most up-to-date and relevant information**[48], making them a **crucial resource for academic research and studies**.

A computer can be utilized in the preparation of indexes or parts of them, regardless of whether the indexing pertains to concepts or words. Word indexing involves generating index entries based on the words found in the original document. These entries are extracted from the full text of the document in what is known as text indexing, or they can be derived from document titles through what is referred to as keyword-in-context indexing. This process consists of two main stages:[49]

1. **Planning Stage:** This stage focuses on identifying the needs of users for whom the index is being prepared. It involves defining the scope of coverage in terms of subject matter, language, and format to align with users' requirements. The process relies on specific rules and tools necessary for subject analysis and the physical description of the units to be indexed.
2. **Implementation Stage:** This stage involves content analysis and examining the document to be electronically published. It includes thoroughly reading the document or parts of it to determine its thematic coverage and the concepts it addresses. The results of the indexing process are then recorded in an electronic medium, which is displayed on a computer screen.

B. Abstracting Services

Abstracting refers to **analyzing the content** of documents to extract their **key ideas and information**. This process **saves time** for researchers, allowing them to **expand their reading scope** and efficiently identify **relevant sources** related to their field of interest[50].

Electronic abstracting provides **valuable data** related to publishing. It requires the **original text** to be either **input into a computer** or **produced as an electronic print output**. The computer then processes the text **based on predefined instructions**.

In this regard, **selective dissemination of information (SDI)** differs from **traditional library services** in that **SDI is initiated by the library or information center**, proactively delivering **relevant information to users**, while **traditional library services** provide information only **upon request**.

Subsection Two: Evaluating the Role of Electronic Publishing in Providing Information Services

Electronic publishing **builds a multi-service digital content system** for internet users, significantly **enhancing knowledge updates** in **higher education** with **high efficiency and effectiveness**. It provides services that support users in making **informed decisions** that enrich their **intellectual and academic growth**.[51]

Since **evaluation** is about assigning value to a service, its effectiveness relies on a **set of criteria** that determine the impact of **electronic publishing** on **teaching and research improvement**.

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[46] Jaafar Hassan Jassim, *Previously cited reference*, p. 215.
[47] Ahmed Nafi' Al-Midadhah, *Previously cited reference*, p. 176.
[48] Hassan Ababda, *Electronic Libraries*, Al-Mu'taz Publishing and Distribution, 1st Edition, Amman, 2016, p. 66.
[49] Faten Saeed Baflah, *Previously cited reference*, p. 50.
[50] Hassan Ababda, *Previously cited reference*, p. 69.
[51] aten Saeed Baflah, *Previously cited reference*, p. 53.

First: Evaluating Information Sources

Assessing **the reliability of sources** is crucial to measuring the **effectiveness of electronic publishing** in providing **accurate and high-quality information**. Several factors should be considered when evaluating sources, including:

- **Recency**: Ensuring that information is **up-to-date** and reflects the latest developments.
- **Source authenticity**: Identifying the **original sources** of information to guarantee accuracy.
- **Credibility of online content**: The **ease of online publishing** makes it necessary to **verify sources**, as unreviewed information can lead to **misinformation and unreliable knowledge**.

Another essential factor is **evaluating the quality of information service providers**. Effective electronic publishing relies on **qualified staff** who:

- **Possess strong research skills** in information retrieval and database management.
- **Analyze and solve issues** in digital information systems.
- **Utilize advanced tools and software** to create **accurate indexing and retrieval systems**.

Second: Evaluating Information Services

To measure the **quality of electronic information services**, **various evaluation methods** are used, including **intentional and unintentional assessments**[52]:

1. **Unintentional Evaluation**:
    - Involves **anonymous users** who request services and later provide feedback **without employees knowing they are being assessed**.
2. **Intentional Evaluation**:
    - Uses **direct feedback methods**, such as distributing **questionnaires** to users to assess:
        - **Accuracy of responses**
        - **Customer service quality**
    - Relies on **statistical data** to track the **types of user inquiries** and measure the **response rate and efficiency** of the service.

By applying these evaluation criteria, institutions can enhance **the effectiveness of electronic publishing**, ensuring **better access to knowledge, improved research tools, and high-quality digital services**.[53]

For this reason, electronic publishing is considered one of the most important, if not the most important, internet-related methods. It facilitates access to information at any time and at a minimal cost, thereby strengthening researchers' capabilities and providing them with all the information and data they need in their field of study. Moreover, it influences researchers by documenting scientific connections between scholars, allowing them to identify the strengths and weaknesses of their research and scientific achievements. Electronic scientific publishing is a necessity for ensuring the quality of education and enhancing contemporary scientific knowledge. It also enables access to a vast amount of information from various sources, which leads beneficiaries to seek technical and specialized assistance from information specialists.[54]

Electronic publishing has transformed the way information is acquired, thanks to its speed, ease, and interactive capabilities that researchers utilize. The adoption of digital libraries, for example, stems from prior efforts to develop technologies that facilitate the optimal use of encyclopedic knowledge recorded in books and dictionaries. The impact of electronic publishing on information accessibility is evident in the relationships students establish with their peers, exchanging information to meet their needs and guiding each other in adopting proper scientific research methods and selecting appropriate sources for their studies.

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[52] Hassan Ababda, *Previously cited reference*, p. 75.
[53] Faten Saeed Baflah, *Previously cited reference*, p. 226.
[54] Ahmed Nafi' Al-Midadhah, *Previously cited reference*, p. 44.

Regardless of the many advantages that internet technology offers, electronic publishing stands out as one of its most significant benefits. Its influence is evident in providing information and services essential to researchers, particularly with the widespread use of smart devices. These devices are no longer used solely for personal communication but have become gateways to extended texts, allowing many to access stored information in the form of CDs or PDF files. However, the challenges of fully benefiting from electronic publishing remain significant, facing numerous obstacles that hinder its effective utilization.

Conclusion

Electronic publishing is one of the modern technological methods relied upon for providing various services, especially in the fields of education and scientific research. It fosters learners' creativity and offers an extensive amount of information in an electronic format that facilitates learning and research through a new model that employs computers and electronic communication tools to access educational material or its sources.

Based on the discussion above, several key findings can be drawn, the most important of which include:

- **Modern knowledge acquisition** takes on a new form, distinct from the traditional model, which is relatively slow, makes information difficult to obtain, and is hindered by multiple obstacles.
- **Improving higher education and enhancing research quality** are fundamental areas where modern technology imposes its influence. Most educational and academic institutions have adopted internet-based technologies, including information recording, storage, and publishing, in their educational programs to keep up with current advancements in knowledge and science.
- **The reliance on modern technology** has led to a shift in teaching methods and knowledge acquisition, emphasizing speed in obtaining, storing, and retrieving information at any time.
- **Electronic publishing facilitates easy access to information**, enables its transfer to other locations, and allows for seamless updates and electronic modifications.

Recommendations:

- Developing modern technological methods in teaching and scientific research.
- Enabling all researchers to effectively utilize modern technological tools for research and learning by organizing workshops and training courses in computing.
- Conducting training programs and workshops to enhance proficiency in using new electronic technologies to improve individuals' cognitive abilities.
- Identifying users' needs that contribute to the development of their cognitive and intellectual skills by promoting information awareness.
- Focusing on individual development in the technological field to ensure effective and efficient interaction with electronic devices.

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