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Communication technologies and information management

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Communication Technologies and Information Management

First Edition

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Contenido

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Prologue

Science is an inexhaustible source of knowledge, and its development has been largely driven by the ability of humans to collect, process and share information. In the modern era, access to information has become an essential skill, and proper data management is crucial for scientific research and informed decision-making in all walks of life. You don't have to be a researcher to understand this - any student, professional or citizen today is convinced of this.

It is therefore my pleasure and privilege to present this groundbreaking book entitled *Communication Technologies and Information Management*, which explores the fundamentals of scientific research and how to manage information effectively in the modern era. An academic resource that constitutes a significant advance in the field of didactics of information management and scientific research. Aimed at students, teachers and the general public interested in acquiring solid knowledge in these essential areas, it is notable for its originality and innovative approach.

What makes this book truly transcendent is the way it addresses complex concepts in an accessible way and the large number of proposed activities focused on reshaping theoretical knowledge, making it a valuable tool for students and for anyone who wishes to understand and make the most of the vast world of information. The chapters have been carefully designed, each addressing key issues in a didactic and clear manner.

Chapter I, *Information: A Basic Input*, lays the groundwork by exploring the importance of information literacy and presents key concepts such as the information life cycle, information needs, information sources and information units in an accessible way. The authors have succeeded in demystifying these essential topics and making them accessible to a wide audience.

In Chapter II, III, IV, *Information Retrieval*, Information Access Tools and Artificial Intelligence (AI) Tools for Search. Information Processing and Dissemination, the book delves into a world of tools and techniques that enable readers to successfully navigate the ocean of information available in the digital age; covering databases from all fields of science. The presentation of this information-seeking process is clear and practical, making it easy to understand and apply.

Chapter VI, *Valuation of information*, is a major focus of this work. Here, the authors explore the assessment of the quality and reliability of information in a world where discerning between accurate and false information is critical. The criteria and assessment tools presented are valuable for both students and experienced teachers and researchers.

Chapter VI, *Reference Managers*, provides practical guidance on how to correctly cite and reference bibliographic sources, as well as presenting bibliographic managers for citing and generating reference lists using different citation formats. This section is essential for maintaining academic and ethical integrity in research, and the authors have managed to simplify this process with clarity.

Finally, Chapter VII, *Ethical use of information*, addresses the importance of communicating information in an ethical and responsible manner, always avoiding plagiarism, which is classified according to how it can occur. This chapter is a timely reminder that, in an interconnected world, respect for copyright and the integrity of information is essential.

The book *Communication Technologies and Information Management* is a very important work in the field of information management education and scientific research. Its authors have masterfully balanced originality and innovation with clarity and accessibility, making it a must-have for those seeking to successfully navigate the world of information education and research. This book is a valuable and versatile tool that will benefit all who delve into its pages. It lays the foundation for a deeper understanding of how to efficiently harness information in our quest for knowledge and advancement in society. This book is a compass that will guide students, teachers and anyone interested in the path of knowledge, empowering them for this modern age.

Dr. Aníbal Zaldívar Colado
University City, Mazatlán, Mexico
June 2024

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Introduction

This workbook promotes the development of competences to manage information from diverse sources, achieving the ability to:

- Use appropriate information systems through the search of data for the management of the subject matter.
- Make use of the information sources managed to produce quality texts on the thematic content.
- Communicate information based on established standards.

The structure of this workbook is made up of seven chapters:

The first chapter is oriented on identifying your information needs when posing a research problem.

In the second chapter, you learn about the phases that make up the information retrieval process, elaborating search strategies using the languages of interrogation and Boolean logic, applying the different appropriate information tools.

In the third chapter, they use the appropriate tools according to the information they require; they identify the characteristics of Internet resources (search engines, directories, meta-search engines, portals); and acquire skills in the management of bibliographic, academic and specialised databases.

In the fourth chapter, you will be able to consult tools with Artificial Intelligence (AI) for the search, processing and dissemination of information, through chatbots, Artificial Intelligence (AI) search engines and AI platforms for mapping knowledge.

On the other hand, the fifth chapter aims to raise awareness about the importance of evaluating the results of information search and retrieval, in order to learn how to identify reliable and quality information.

Sequentially, the sixth chapter provides technological tools that facilitate the hierarchisation of main ideas and the elaboration of bibliographic references in accordance with the different rules for citing authors. The appropriate use of technological tools becomes a support for the development of capacities for analysis, relationship, logical order and synthesis.

Finally, the seventh chapter promotes activities to be carried out by the student to make use of technological tools in written communication with strict adherence to the rules and bibliographic style, valuing the ethical use of information.

It is hoped that this book will be of great learning utility in obtaining the bases to carry out information management through the efficient use of communication technologies, since this book was methodologically designed to work in a self-taught way.

Chapter I Information: basic input

Capítulo I Información: datos básicos

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Key A-Books

Promotes skills in the search for and management of information, essential for the academic and professional development of students. Identification of information needs, selection of reliable sources and critical use of data. Information literacy is crucial for effective learning, allowing students to develop competencies in information management.

Abstract

In this first chapter, the reader will be able to identify their information needs and the appropriate sources to consult in order to identify and select the quality information they need for writing the academic paper they must prepare.In the last century, technological changes and innovations occurred that represented, among other changes, the breakdown of learning paradigms. Currently, the concept of literacy includes the mastery of educational technologies and information management, which means that students:

a)   Identify the information need they have in each academic challenge to be performed.
b)   Know and select the source of information to which they should go.
c)   Design the appropriate questioning in the databases or search engines, to meet their information need.
d)   Use the information to generate new knowledge.

Information: basic input		
Objective	**Metodology**	**Contribution**
The objective is for the reader to be able to identify their information needs and the appropriate sources to consult in order to identify and select the quality information they need for writing the academic paper they must prepare.	A didactic approach is used that combines theoretical explanations with practical activities. Key concepts about information retrieval are presented, and a series of exercises are proposed that guide the reader in the formulation of search strategies, the selection of sources, and the evaluation of results. These activities allow the application of acquired knowledge in real-world academic search situations.	It contributes to the development of essential skills in documentary research, providing tools and techniques that enhance the accuracy and efficiency of information retrieval. Additionally, it fosters a critical approach to the selection and evaluation of sources, which is crucial for academic research and problem-solving in professional settings.

Information needs and adequate sources

Feedback

Theoretical explanations and practical activities

Skills development and critical approach

Information Literacy, Information Sources, Information Needs

Resumen

En este primer capítulo, el lector podrá identificar sus necesidades de información y las fuentes adecuadas a las que debe recurrir para identificar y seleccionar la información de calidad que necesita para la redacción del trabajo académico que deberá redactar. En el siglo pasado se dieron cambios e innovaciones tecnológicas que representaron entre otros cambios, la ruptura de paradigmas de aprendizaje. En la actualidad el concepto de alfabetización incluye el dominio de tecnologías educativas y de la gestión de información, lo que conlleva que los estudiantes:

a)   Identifiquen la necesidad de información que tienen en cada reto académico a realizar.
b)   Conozcan y seleccionen la fuente de información a la cual debe acudir.
c)   Diseñen el cuestionamiento adecuado en las bases de datos o buscadores, para satisfacer su necesidad de información.
d)   Utilicen la información para generar nuevos conocimientos.

Resumen gráfico

Información: insumo básico		
Objetivo	**Metodología**	**Contribución**
El objetivo es que el lector podrá identificar sus necesidades de información y las fuentes adecuadas a las que debe recurrir para identificar y seleccionar la información de calidad que necesita para la redacción del trabajo académico que deberá redactar.	Se utiliza un enfoque didáctico que combina explicaciones teóricas con actividades prácticas. Se presentan conceptos clave sobre recuperación de información y se propone una serie de ejercicios que guían al lector en la formulación de estrategias de búsqueda, la selección de fuentes y la evaluación de resultados. Estas actividades permiten aplicar los conocimientos adquiridos en situaciones reales de búsqueda académica.	Contribuye al desarrollo de habilidades esenciales en la investigación documental, proporcionando herramientas y técnicas que mejoran la precisión y eficacia en la búsqueda de información. Además, fomenta un enfoque crítico en la selección y valoración de fuentes, lo cual es crucial para investigaciones académicas y la resolución de problemas en entornos profesionales.

Necesidades de información y fuentes adecuadas

Retroalimentación
Explicaciones teóricas y actividades prácticas

Desarrollo de habilidades y enfoque crítico

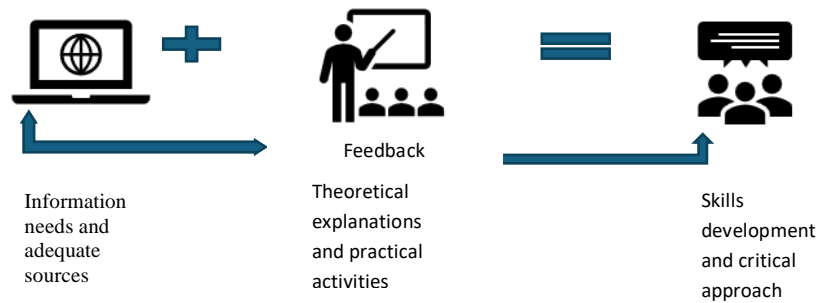**Alfabetización Informacional, Fuentes de Información, Necesidades de Información**

Introduction

In this first chapter, the reader will be able to identify his or her information needs and the appropriate sources to turn to in order to identify and select the quality information needed for the academic paper to be written.

The last century has seen technological changes and innovations that have, among other things, broken learning paradigms. Nowadays, the concept of literacy includes the mastery of educational technologies and information management, which implies that students:

a)   Identify the information needs they have in each academic challenge to be undertaken.
b)   Know and select the source of information to be used.
c)   Design the appropriate questioning in databases or search engines to satisfy their need for information.
d)   Use the information to generate new knowledge.

Search process for information retrieval

Importance of information literacy

Communication between human beings has changed with innovations in technology and the massification of the internet. People have always sought to document and store the record of all kinds of activities they perform in order to inherit or preserve their knowledge. Nowadays, accessing quality data and information represents a challenge for students, which entails the development of information competences and skills for the successful search for information.

The excess of information gave rise to the concept of infoxication, which implies the development of competences and skills to know how to discriminate between what is useful and what is not. Immediate access to information means that search and retrieval strategies have to be designed, as well as classifying the quality of this information. This has led to greater importance being given to the updating of information, due to the speed with which it becomes obsolete: what today is considered a great invention may tomorrow cease to be a novelty. All this obliges us to have competences that allow us to access, use, evaluate and communicate appropriate information, regardless of the format in which it is recorded, whether text, sound, image, among others, to generate useful knowledge for the benefit not only of the individual but also of the collective, i.e. it is necessary to have information skills for lifelong learning, and this is precisely what information literacy (IL) is about.

In the professional training of university students, information literacy should be introduced through the teaching of the appropriate use of Information and Communication Technologies, because they are tools that they will have throughout their lives, with which they will be able to communicate and actively participate in society, in addition, they will have access to scientific information for decision-making and innovation in different fields of knowledge. de Arena (2017) points out that the educational process should include solving a problem with valid information, i.e. the teacher should be the guide that indicates the path to follow to achieve access, use and communication of information.

Information, life cycle and characteristics

Data. By itself, a single piece of information does not say anything; it is the numerical representation that records a part of reality. According to the dictionary of the Royal Spanish Academy (n.d., definition 1), data 'is the information about something concrete that allows its exact knowledge or serves to deduce the consequences derived from a fact'.

Organisations and companies need as an input the recording of data that contribute to the management of their organisational processes in order to achieve success and avoid chaos. A set of data, when interpreted, provides a conclusion of the part of the research that has been carried out in the company. For example: A doctor in organising the health records of his patients should record important data such as age and weight; a company to record the punctuality and attendance of its employees should have a control mechanism that allows him to encourage or reprimand the worker.

From a business perspective, data can be described as structured records or transactions and are particularly relevant because they are the raw material for information. An example of data would be body temperature or sales made to a particular customer or the result of a tennis match or a pupil's maths grade.

Information. A message conveyed by the sender through a medium of communication to the receiver. For a company, the value given to the data collected is fundamental, in order to organise, process and communicate it as useful information. Data becomes information when someone interprets it, gives it meaning, according to a given context.

One of the ways to access data and information is through the use of technology and electronic communication networks. 'Because of their impact and relevance in the different activities of the human context, information and communication technologies [ICTs] have become labour management tools to increase productivity in companies' (Gonzáles et al, 2021, p. 561).

Knowledge. Knowledge occurs when the receiver receives the information, interprets and processes it, impacting with this communication process to its knowledge structure. We can also express that: Knowledge is achieved when we can make a decision or solve a problem or need, based on the processing of data and information.

Information life cycle

Information, like many other things, has a life cycle, which we can appreciate from two perspectives, one of which refers to the technological sphere and the other to what happens in the human dimension. The information life cycle proposed by Vizcaya (1997) reveals the processes through which information passes; the scheme is interpreted through the two perspectives mentioned:

In the technological, i.e. information systems.:

Origen ➡ **Selection.** ➡ **Processing.** ➡ **Storage.** ➡ **Search.** ➡ ➡ **Recovery.** ➡ **Dissemination.**

In the human domain, i.e. the process in which the user achieves the gaining of new knowledge:

New information . ➡ **Intelligence.** ➡ **Decision-making.** ➡ **Impacto.** ➡ **new knowledge**

The following graph shows the relationship between information and knowledge

Box 1

Figure 1

Relationship between information and knowledge
Source: Subsystem adapted to the Vizcaya Information Life Cycle (2003).).

Characteristics of the information

The literature review indicates that in general information has an internal structure and can be qualified according to several characteristics:

1. Significance: It represents something to someone.
2. Importance: It depends on who will use the information, for what purpose and why, therefore, its value is subjective.
3. Validity: It can be valid today and invalid tomorrow.
4. Revaluable: It does not wear out with use, it does not devalue, but improves with use.
5. Transferable: It is easily transferred and is not lost when this process takes place.
6. Reliable: It can be believed because of its qualities and its sources.

Need for information

Information need (lack of information) is a condition in which certain information contributes to the achievement of a genuine purpose. Information originates and is generated because there is a need or interest (*Ortiz, 2010*). Need is wanting something you do not have.

In the writing of any academic activity, one is constantly confronted with the need for information, either because one is unaware of it or because one wishes to go deeper through a literature review. Data and information, available in various media, are the input that satisfies every new information need that arises.

The information need can be expressed as a model of:
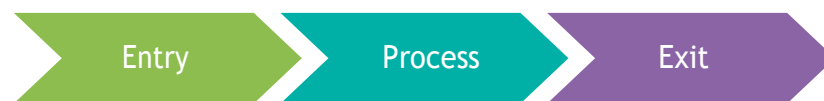
1. The basic components of the system are: 1) problem, 2) process to solve the problem, 3) solution.

2. When a topic to be investigated for the development of an argumentative essay or scientific research is proposed, the first step to be taken is to observe a problem or need in the environment. Once the problem is defined, it is analysed to determine the need for information. The need for information is indicative of a lack of knowledge or the need to go deeper through the references of expert authors on the subject who have published in quality information sources.

Problem solving fills knowledge gaps.

3. When an information need arises, to solve it, a search is made in information sources, accessing them immediately through a device with internet access. The information needed depends on the task to be solved, and so three stages of information needs can be identified:

4. Real need, centred on the information that one would like to obtain. It is essential to formulate a series of questions in natural language, as many as are considered necessary, and to determine the level of amplitude of the response.

5. Expressed need, written in the form of a search request to the information system being used, be it a library, a documentation centre, Internet sites. In other words, questions asked in natural language must be translated into expressions that the system can recognise.

6. A recognised need is one in which the system where the information is sought is able to recognise and understand in order to resolve the demand for information. In other words, it is when we find results in our searches, because our written expressions were adequate for the system**.**

- Expressing an information need

7.   In order to specify information needs, it is necessary to clarify a series of questions that outline precisely what the starting point of the information search process can be, or to determine what it is that you are looking for and where to go to look for it. Some basic questions are:

-       What is the topic or issue I want to research?
-       What type of information do I need (e.g. statistics, scientific articles, news, etc.)?
-       What is the objective of my research? What do I want to achieve with the information I find?
-       What are the key words related to my topic?
-       What sources of information are reliable and relevant to my research?
-       What is the temporal and geographical scope of my research?
-       How will I organise and store the information I find?

8.   Precisions for the information search process

Cabanillas et al (2020) point out that information search involves concepts such as: identifying, locating, retrieving, evaluating, storing and organising. The information search should be carried out considering the steps described here. Before starting an information search, the following points should be considered, in order to obtain greater precision in the results required to provide quality to the academic work requested:

Scope and objective: In some information searches the geographical scope, the temporal scope, as well as the scope of specialisation or depth are taken into account, depending on the objective of the research, that is, it depends on the type of academic work to be done, for example, there are tasks that involve looking for definitions or the representatives of some thematic, where the search can be solved in minutes, however, the search for information becomes more complex when an argumentative essay, a critique, a synthesis, a research protocol or a degree thesis must be written.

Previous knowledge: There is information and knowledge in the mind that is stored in the mind, in each academic challenge that is solved, students grow and are formed, so when starting a search should be   reflected in advance on what is known about the subject and what information you need to look for.

Consultation with experts: Consultation with an expert is carried out to receive guidance or information regarding a topic, and is recommended to focus the search for information. Herrera et al (2022) point out that the expert is considered by his academic degree, the position he holds, his experience in time dedicated to developing some professional activity, i.e., the expert is an individual capable of offering assessments, making forecasts, suggesting viability, relevance, solution, proposing or recommending on some research topic.

The expert can be approached to seek information and to ask for guidance on where to go to retrieve quality information to solve doubts in the search for information.

In order to consult experts, it is first necessary to identify the individuals or institutions that are experts on the subject, and to communicate personally or by some other means of communication.

Reference works: When there is no knowledge of the topic to be researched, reference works are consulted to clarify doubts about the meaning of the topic to be researched, and reference works can also provide guidance on where to go because they can refer you to other works that provide more information on the subject. Reference works have no author and are secondary sources of information. Some examples of reference works are listed below:

Box 2

Table 1

Reference Works

Reference works	Suggested URLs
Dictionaries	https://dle.rae.es/
Encyclopaedias	https://es.wikipedia.org https://www.ecured.cu/Everipedia
Yearbooks	https://www.astroscu.unam.mx
Directories	https://www.seccionamarilla.com.mx/
Catalogues	http://koha.uan.mx/
Biographies	https://www.biografiasyvidas.com/
Anthologies	https://www.cervantesvirtual.com/obra/antologia-de-poetas-mexicanos/

Determine areas of information search. In order to be more specific in the search for information, it is possible to determine the scope of the search, such as when choosing an advanced search, where the following are considered:

- The year of publication: In historical research publications that are very old will be of interest, but this will not be the case in searches for information having to do with the use of technology, so determining the chronological scope is important.
- Language: When information from a certain geographical area is required, the language becomes important, also when you want to broaden the search, the English language will give extensive results. In certain cases online translators are efficient.
- Thematic: Defining the topics, subtopics or keywords of the information search to cover the information need.

Defining the topic. By observing the environment, problems, phenomena or needs can be identified, which can be used as a starting point for research, whether for writing an essay, a critique, an informative note, among other academic activities that may be requested. Likewise, determine the research question and the thematic areas from which the scope of the search for information can be determined, e.g:

Box 3

Table 2

Defining the topic

Problem	Overweight and obesity in Mexico
Question	Why doesn't Mexico have enough action to prevent overweight and obesity?
Thematic área	Health, nutrition, culture, education, economy, physical culture, psychology, politics, prevention, medicine.

Source: own creation

Activity 1
Defining the information need
Instructions:
Answer what the problem, research question and thematic scope would be if you were to conduct an information search using the following reading by Barraza-Salas et al (2009):

Health status and work-related stress among IMSS medical interns in Tepic, Nayarit

One of the common manifestations in health care workers is stress, which can gradually worsen and exceed the individual's capacity or resources to cope with this phenomenon, this manifestation becomes chronic and the person suffering from it manifests unfavourable attitudes and feelings, as their performance declines, they feel physically and emotionally exhausted and the people around them feel a depersonalised treatment towards them, at this level we are already talking about Burnout syndrome. Individuals are immersed in institutions that are too demanding and lack attention to the mental health of their own staff, and may develop psychosomatic symptoms, anxiety-insomnia, social dysfunction in daily activities and depression, which are characteristics that identify the state of mental health of the subject. The aim of this research is to determine the prevalence and intensity of Burnout Syndrome in medical interns, the mental health status of medical interns and the relationship with personal and general characteristics.

Problem:_____
_____
_____
_____

Question:_____
_____
_____
_____
_____

Thematic:_____
_____
_____
_____
_____

This activity will be a support to know how to approach the topic of the integrative case (final essay).

Sources of information

Sources of information. Once the previous steps have been taken, it is important to know where to go to look for information, therefore, you should know the various sources of information that are available and freely accessible to meet your information needs.

Main sources of information:

- Expert consultation: interviews with specialists (questioning researchers, managers, academic experts).
- Reference works: Reference works (dictionaries, encyclopaedias, catalogues, etc.).
- Scientific journals: Publications of scientific articles resulting from scientific research (available in academic search engines or scientific databases such as: Redalyc, Scielo, Dialnet, etc.).
- Popular science journals: Publications to disseminate science to society.
- Institutional: Publications of data and information generated in various public institutions (INEGI, SAGARPA, IMPI, UN, UNESCO).
- Podcast: These are audio publications that are stored on websites and may contain general or specialised information on various topics.
- Newspapers: They contain informative notes of state, national or international impact, chronicles or opinion articles, presented in printed publications or on websites.
- Audiovisuals: These are publications in video format; there are entertainment videos, but also tutorials, interviews, documentaries, etc.
- Books: There are different types of books, textbooks, reference books, manuals, etc.

Activity 2
Sources of Information

Instructions:
Place in the parentheses of the first column, the number of the information source that corresponds to each of the information needs presented.

Subject	**Source of information**
( ) **Management of a party**	1. **Local newspaper**
( ) **Increase of the basic food basket**	2. **National newspaper**
( ) **Environmental pollution**	3. **Reference work (directory)**
( ) **Algebra problem**	4. **Expert consultation**
( ) **Guidance on educational theorists**	5. **Audiovisual tutorial**
( ) **Baseball sports chronicle**	6. **Scientific Journal**

Classification of Information Sources

By the form of representation and physical recording of the information in the information medium (information whose content is complete or predominant):

- Textual. A monograph, a novel (bibliographic version).
- Graphic. A plan, a poster.
- Sound. An audio storage device.
- Audiovisual. A video, DVD, or multimedia device.
- Electronic. An electronic storage device, an online application..

By the nature of the information contained in the informational support:

- Primary. First hand data: periodical articles, books, anthologies, monographs, theses, official documents, association reports, papers presented at conferences or seminars.
- Secondary: Result of processing primary information. Abstracts, compilations and lists of bibliographic references.
- By the conventional form of reproduction:
- Published. Information submitted to editorial process. Essay, thesis, dissertations.
- Not published. Information created and that could be used but has not been subjected to the editorial process, also called gray literature. Student works, bibliographic references.

By the origin of the information:

- Internal. Sources of information generated or created in the organization itself as a result of daily activity. Documentary, non-documentary, personal, electronic.
- External. Information sources that come from or are acquired externally. Documentary, non-documentary, personal, electronic.

Activity 3
Classification of Information Sources
Instructions:
Conduct an information search on the internet for the information sources listed in the following list of links, in the first column specify the type of information source it is and specify each of the classifications according to the type of information source that applies.

1. https://www.redalyc.org/articulo.oa?id=263149891013
2. https://docs.google.com/viewerng/viewer?url=https://primary.jwwb.nl/plugin-documents/d41ea79961c39ae3b6a3cb3c4d915e4ee1238ce8.pdf
3. https://es.wikipedia.org/wiki/Comunicaci%C3%B3n
4. https://dle.rae.es/educaci%C3%B3n?m=form
5. https://www.google.com.mx/maps/search/UAN+/@21.4907042,-104.9121943,15z?entry=ttu

Type of information source	By form of representation	Character of the information contained	Form of reproduction
1.			
2.			
3.			
4.			
5.			

Information units

All human beings have the right to access information, which can be applied to solve information needs, solve problems, innovate and make decisions. It has already been said that, through information, it is possible to reach knowledge. That is why society and its governments gave rise to what are called "information units" in which they seek to obtain, manage and provide access to relevant information to all users who request it.

Examples of information units:

Information Unit	Sources of information	Examples
Traditional library (No use of technology) Electronic Library (Uses computer equipment). Virtual library (accessed through the web).	Books, periodicals, theses, records, videos, maps, etc.	Public Library "Everardo Peña Navarro". UAN Magna Library Virtual Library of Mexico
Newspaper Library	Newspapers, magazines and documents with historical value.	UAN Newspaper Library National Newspaper Library of Mexico
Archive	Legal, historical, political, administrative, private, image, audio and audiovisual documents.	General Archive of the Nation General Archive of the State of Nayarit
Documentation Center	Gray literature (unpublished documents, such as conferences, papers, reports, etc.) books, periodicals and other specialized publications.	Documentation and Analysis Center, Archives and Compilation of Laws The Documentation Center of the UNAM Film Library

Activity 4
Definition of the information needs of the "Integrating Case".

Instructions:
Define the topic of interest that you will present as a final essay (Integrating Case) and pose a problem, as well as the question and related topics.

Problems:_____
_____
_____
_____
_____

Ask:_____
_____
_____
_____
_____

Theme:_____
_____
_____
_____
_____

Declarations

Conflict of interest

The authors declare that they have no conflicts of interest. They have no financial interests or personal relationships that could have influenced this book.

Authors' contributions

Llamas-Rodríguez, Verónica Teresa: Contributed with the revision of the proper wording of bibliographic references and textual citations in APA style and updating of the reference formats from APA 6 to APA 7, transcription of the document to the template for publication by ECORFAN Mexico. Writing of keywords in English and Spanish, CONAHCYT classification, keys to the material, as well as abstracts in English and Spanish.

Llanos-Ramírez, María del Carmen: Contributed with the writing of the introduction. Review and analysis of the writing of the body of the chapter. Contributed to the articulation and integration of topics and subtopics.

Carrillo-Beltrán, Julio César Cuauhtémoc: Contributed to the review and analysis of the entire development of Chapter I, as well as the graphic summary in English and Spanish, highlighting: objectives, methodology and contributions.

References

Background

Barraza-Salas, J., Romero, J., Flores, L., Reyes, B., Piña, N. & Romero, D. (2009). Health status and occupational stress in IMSS medical interns in Tepic, Nayarit. Revista Waxapa, 1(1), 35-41.
Vizcaya, D. (1997). Information: Content processing. Argentina: Paradigma.

Basic

Real Academia Española (2014). Dictionary of the Spanish language (23rd ed.

Support.

Cabanillas García, J. L., Lungo González, R., & Torres Carvalho, J. L. (2020). Information search, content selection and creation, and teaching communication. RIED. Iberoamerican Journal of Distance Education.

Herrera Masó, J. R., Calero Ricardo, J. L., González Rangel, M. Á., Collazo Ramos, M. I., & Travieso González, Y. (2022). The expert consultation method in three levels of validation. Habanera Journal of Medical Sciences, 21(1).

Differences

Gonzáles, J. L. A., Gallardo, M. R. C., & Chávez, M. D. R. C. (2022). Information and Communication Technologies versus Upskilling and Reskilling of public collaborators. Revista Venezolana de Gerencia: RVG, 27(98), 565-579.

Discussions

De Arena, J. L. (2017). To (re)think information literacy in the university. Biblioteca universitaria, 20(1), 23-33.

Chapter II: Information recovery

Capítulo II: Recuperación de la información

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CONAHCYT classification:

Area: Humanities and Behavioral Sciences
Field: Pedagogy
Discipline: Educational theory and methods
Subdiscipline: Other

Key A-Books

Develop critical skills strategies for information retrieval, using questioning languages, Boolean logic and search operators to optimize accuracy in obtaining relevant data. In addition, critical thinking is encouraged through the rigorous evaluation of sources, considering aspects such as relevance, reliability and pertinence. The research also promotes the efficient use of digital tools, combining theory and practice to strengthen research skills and contribute to the generation of new knowledge in various scientific and academic fields. The aspects to understand are: the development of effective search strategies through the use of questioning languages and Boolean logic, as well as the critical evaluation of sources considering their relevance, reliability, objectivity and updating. It is also essential to understand concepts such as documentary noise and silence, which help refine searches and ensure accuracy in information retrieval. In addition, the ability to select, evaluate and adequately structure data allows the generation of relevant and applicable knowledge in different academic and scientific contexts. In this chapter the main focus is on the use of advanced strategies for information retrieval, such as Boolean operators and Boolean logic, considering that this significantly improves the accuracy and relevance of the results in the search for academic data. In addition, it is concluded that the development of critical skills for the evaluation of sources is essential to guarantee the quality of the knowledge generated, since it allows the selection of reliable and pertinent information. Finally, the research highlights the importance of combining theory and practice to strengthen research skills, which is essential for the generation of new knowledge in various scientific fields.

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1702902 CONAHCYT

Abstract

The chapter provides a detailed guide on the information retrieval process, emphasizing the importance of implementing effective search strategies through query languages and Boolean logic. It describes the various phases of the search process, ranging from identifying the information need and selecting sources, to locating, retrieving, selecting, and evaluating the results. Additionally, it explains key concepts such as noise and silence in documents, as well as the use of Boolean operators to enhance search precision. Finally, the chapter includes practical activities to apply what has been learned, through the search for academic articles and the structuring of more complex search strategies.
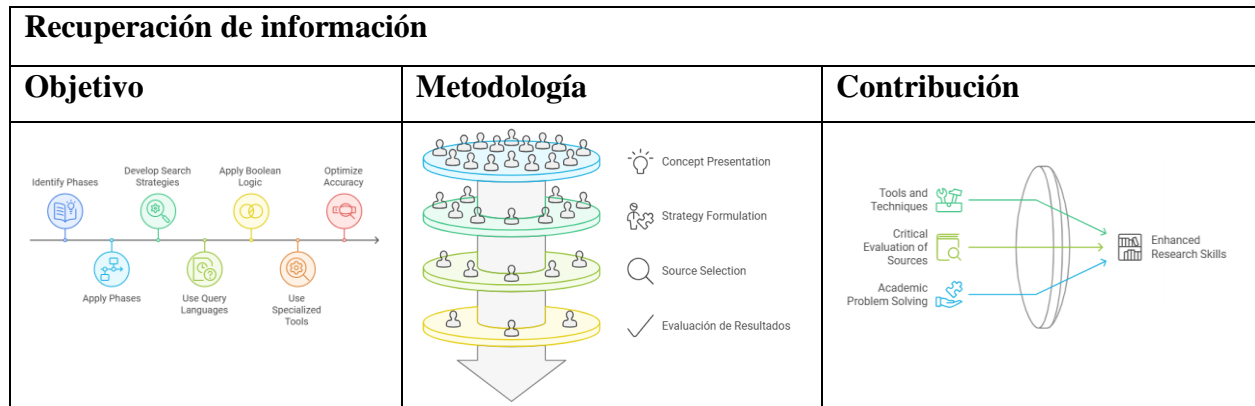
Information searching, Retrieval systems, Search strategies

Resumen

El capítulo ofrece una guía detallada sobre el proceso de recuperación de información, subrayando la importancia de implementar estrategias de búsqueda efectivas a través de lenguajes de interrogación y lógica booleana. Se describen las distintas fases del proceso de búsqueda, que abarcan desde la identificación de la necesidad de información y la selección de fuentes, hasta la localización, recuperación, selección y evaluación de los resultados. Además, se explican conceptos clave como el ruido y el silencio documental, así como el uso de operadores booleanos para mejorar la precisión de las búsquedas. Finalmente, el capítulo incluye actividades prácticas para aplicar lo aprendido, mediante la búsqueda de artículos académicos y la estructuración de estrategias de búsqueda más complejas.
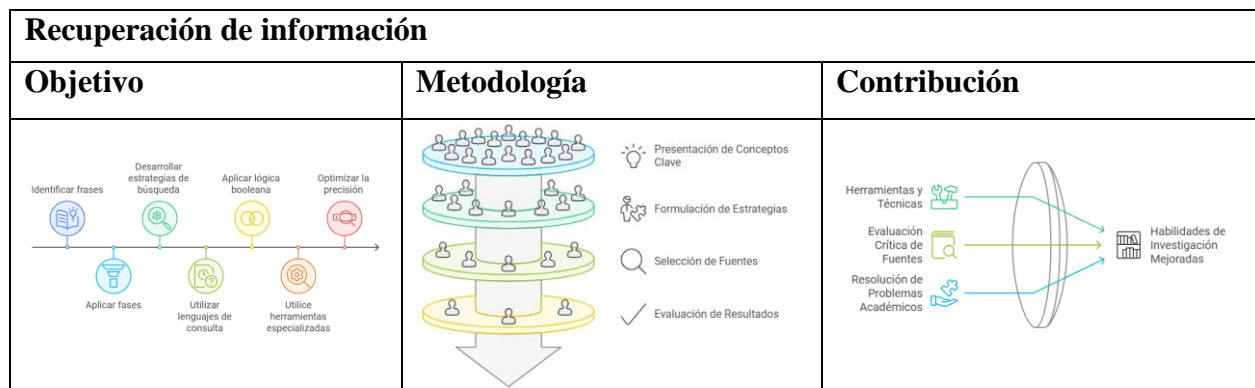
Búsqueda de información, Sistemas de recuperación, Estrategias de búsqueda

Introduction

In this second chapter, the reader will explore the phases that make up the information retrieval process, highlighting the importance of implementing effective search strategies using query languages and Boolean logic. Information retrieval is crucial in the digital age, as it allows access to relevant data in an efficient way, improving decision-making and scholarly research.

Unlike other techniques, information retrieval focuses on the accuracy and relevance of results, using Boolean operators to refine searches and minimise document noise. This approach allows for a more structured and effective search, tailored to the specific needs of the user.

The chapter is divided into several sections, starting with a general explanation of the topic and its importance. Key features of information retrieval, such as indexing, relevance and system evaluation, are detailed. In addition, the central problem of how to find accurate information in large volumes of data is addressed, presenting the hypothesis that the use of Boolean operators and advanced search strategies significantly improves results.

Sections of the book include: 1) Introduction to Information Retrieval, 2) Phases of the Search Process, 3) Key Concepts, 4) Search Strategies, and 5) Practical Activities.

Search Process for Information Retrieval

As noted in Chapter 1, information search and retrieval is a process by which the task of conducting thematic research is solved. The stages of the process are: identification of the information need, identification and selection of information sources.
The steps to be carried out are as follows:

1. Locating and retrieving information (formulating the search). Once the questions have been defined and the search questions have been chosen, it is necessary to formulate the search profile: fragment the question or phrase using only the key words and connect them with operators, and it is also recommended to use synonyms.

2. Selection and evaluation of the information (carry out the search and evaluate the results). Once the search has been carried out, you may find from zero to thousands of results or references. How do you know if you have really answered the question you have started with? This will be discussed in more detail in the next chapter.

Box 1
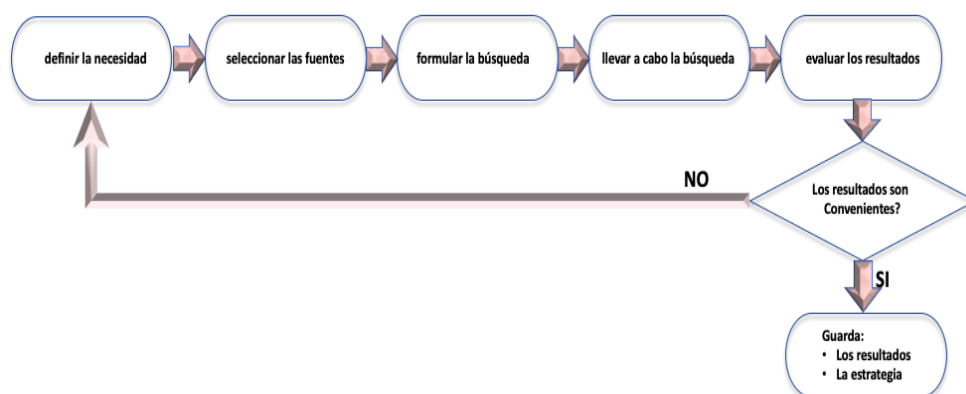
Figure 1

Search process for information retrieval

The first step is to examine the results of the records that have been retrieved and what percentage of those records are relevant. The next step is to recognise potential problems at each stage of the search process. For example, one may have formulated the search too broadly or too narrowly, chosen the wrong database, formulated the search inappropriately, or made a typographical error or incorrectly used a Boolean operator to combine search terms (University of Almeria, n.d.).

Activity 1	
Search for academic articles	
Instructions:	
Choose five general topics that are of interest to you. Conduct a search for academic articles related to each of the topics. From the abstract of each article, write a description of what each paper is about. From the topic chosen in activity 4 of Chapter 1, find 5 current journal articles that address the most important aspects of the topic. Example: Environment	
Article title	**Description no longer than 60 words (use scholarly article)**
Social representations of the environment	In environmental education there is Social Responsibility (SR) on different topics, among which those related to the environment stand out. This article describes some of the main results obtained in a research with students. The results include the characterisation of five types of environmental SR: anthropocentric, utilitarian, covenantal, cultural, naturalistic and globalising.
1.	
2.	
3.	
4.	
5.	

According to Pinto (2015), it is necessary to take into account the key elements that allow the search to be carried out, determining a greater degree of relevance and precision, such as indexes, keywords and thesauri (list of topics). It is important to consider that phenomena such as documentary noise and silence can also occur in the search process.

- **Documentary silence:** refers to those documents stored in the database but which have not been retrieved because the search strategy has been too specific or the keywords used are not adequate to define the search.
- **Document noise**: refers to documents that are retrieved by the system but are not relevant. This usually occurs when the search strategy has been defined too generically (Pinto, 2015, p. 2).

Activity 2.	
Structure of a scientific article	
Instructions:	
The following activity should be carried out using your computer or mobile phone, with the aim of recognising the structure of a research article (Structure of a scientific article Worksheet, n.d.). To do this exercise, copy and paste the following link and follow the instructions on the page: https://es.liveworksheets.com/kq3004319og When you have finished the activity, take a screenshot and show the image as evidence (only works with a grade of 10 will be accepted, if you have not succeeded try again).

Activity 3. Define the need and select the source	
Instructions: According to activity 1 of chapter 2 and having chosen the aspect of interest on that topic. Find five research articles that help the development of the integrative case (Final Project), use reference in American Psychological Association (APA) style. Search databases of recognised organisations. Retrieve data that outline the current situation of the problem. After the search you have already done, answer the following activity, in the following table you can be guided by the example No. 0.	
<center>Problem Recognition</center>	

List of titles of the 5 documents:
    0.   0.   Natural resources and their impact on social responsibility.
    1.	

List of References of the 5 articles in APA Style 7:
    0.   0.   Chilán, J. H. M., Pionce, M. S. P., Loor, J. F. P., & Reyes, J. E. P. (2021). Natural resources and their impact on social responsibility. Science Domain, 7(5), 1243-1261..
    1.	

Source type:	

	Author and year	**Actual Situation** **Based on reliable sources of information**		**Ideal Situation** **Improvement based on research studies**	Research question
0.	Chilán, J. H. M., Pionce, Loor, Reyes. (2021)	Over the last decades, the impact of natural resources on social and corporate responsibility has become notorious around the world, either because of the drastic change in the environment or in our society.		Natural resources refer to goods that are of natural origin and that are altered daily by different human activities, which societies exploit to achieve their development and well-being.	How can corporate social responsibility drive environmental preservation and promote sustainability in different industrial sectors?
1.					
2.					
3.					
4.					
5.					

Activity 4.						
Matrix for Data Collection at Source of Information						
Instructions:						
Now that you have the items described in Activity 3, identify each of the items below.						
Source type:						
Author(s) and year	**Key words**	**Objective of the study** (between 60 and 90 words - textual)	**Methodology** (between 60 and 90 words -textual)	**Result** (between 60 and 90 words -textual)	**Impact** (Number of Citation Number)	**Paraphrase of the content of the article** (between 60 and 90 words-textual)
0.		Natural resources; social and corporate responsibility; business; society; environmental impact	to investigate and evaluate the impact of the natural resources on social and corporate responsibility.	The research carried out is of the literature review type, explanatory and qualitative, aimed at a grouping of data published in scientific journals that grouping of data published in scientific journals in order to access a better understanding of the meanings of the subject to be dealt with, based on the investigative induction of the information obtained.	The main issues that a company should consider concerning environmental aspects are the following: Resource efficiency: Climate change and greenhouse gas emissions: Waste generation and management: Biodiversity and natural spaces:	5	In recent decades, the impact of natural resources on social and corporate responsibility has been evident worldwide, due to drastic changes in the environment and society. Accurate collection of information on these resources is key to gaining new knowledge that will benefit the community. Despite their importance, many organisations neglect preventive measures to preserve the environment, affecting the sustainable exploitation of natural resources essential for development and well-being.
1.						
2.						
3.						
4.						
5.						

Search strategies

A search strategy is defined as the set of procedures and operations that a user performs in order to obtain the information needed to solve a problem (Cosío, n.d.).

Two essential elements for any successful search are keywords and operators; knowledge of these and their correct implementation can save much of the time that may be wasted in the information gathering process.

Keywords are the central motif or focus within the search process, because they are the phrases or terms that help us to retrieve information.

Keywords are phrases or terms that help us retrieve information. They are the central motive or axis within the search process.

Box 2			

Table 1

Example of a search strategy

Example:	Keyword	Synonyms	Related words
How can corporate social responsibility drive environmental preservation and promote sustainability in different industrial sectors?	Corporate social responsibility	Sustainability	Marketing Sustentable
	Environment	Corporate responsibility	Climate change
	Sustainability	Corporate citizenship	Environmental education

Source:Own elaboration

Activity 5
Search strategies
Instructions:
What would be the key words, related words and synonyms that would help you get the information you need to solve the problem of the integrative case?

Keyword	Synonyms	Related words

Operators make it possible to focus the search by linking terms and defining the relationship between them. They are classified according to Torres (2003, p. 9) as follows:

Booleanlogical operators allow you to give a logical order to a search, for example, by establishing a set of terms that you want to appear or not in the return made by the search engine.

- **AND:** Indicates that documents containing all the words specified in the search request will be retrieved. Barroso (n.d.) points out that this operator is useful to limit the search and obtain more specific results.
- **OR:** Orders the database to return all documents that contain at least one of the requested keywords. In some search engines, the symbol '|' can be used instead of 'OR' (Torres, 2003, p. 9).
- **NOT:** This is used to exclude from the search those documents that contain the keyword to which the operator refers. It is especially useful to eliminate irrelevant results that appear in a different context to the one searched for. In some search engines, the symbol '-' or '!' can be used instead of 'NOT' (Torres, 2003, p. 9).

Box 3	

Table 2

Implementing Boolean operators in the search strategy

Boolean Operator	Search Strategy
AND (y)	Artificial Intelligence AND Education
OR (o)	Education AND (chatGPT OR bard)
NOT (no)	Education (chatGPT OR bard) NOT Mexico

Source:Own elaboration

Proximity operators: These operators allow you to specify the relationship between the terms (words) you use in your search

- **NEAR (near).** asks the search engine to retrieve documents or pages that contain the indicated keywords, without being separated by more than 10 words or 100 characters from each other. It

can be replaced by the symbol '~' or by square brackets [ ] in some search engines (Rodriguez, 2003, p. 9).

- **ADJ (together)** is used to retrieve adjacent search sets, where terms must appear together without the presence of another word between them. In some search engines, both words can be enclosed in inverted commas to obtain similar results (Rodriguez, 2003, p. 9).
- **Exact phrases enclosed in inverted commas ('').** indicates the intersection of words in the search, where they appear adjacent to each other and in identical sequence. This is similar to the 'AND' operator but with the requirement that the sequence of words is exact (Rodriguez, 2003, p. 10; American Psychological Association, 2020).

Box 4

Table 3

Implementation of proximity operators in the search strategy

	Operator	Search strategy
Proximity	NEAR (near)	Artificial intelligence NEAR education
	ADJ (Junto)	Education ADJ chatGPT
Exact match	" " (Exact phrase)	ChatGPT as an educational tool"

Source:Own elaboration

Existence operators: These allow a search to be carried out in which the presence or absence of a specified term is established.

Presence (+). indicates that the words must appear in the result and is placed before the keyword to indicate that it must be present in the information retrieved (Rodríguez, 2003, p. 9).

Absence (-). indicates the absence of a keyword, excluding it from the list of results returned by the search engine (Rodriguez, 2003, p. 9).

Truncation (*). used to truncate keywords to the right, at the beginning or in the middle of the keyword. The most commonly used symbol is the asterisk "", which replaces an indeterminate series of letters and allows retrieval of documents containing the keyword or variants of it (Rodriguez, 2003, p. 9).

Box 5

Table 4

Implementation of existence operators in the search strategy

	Operator	Search strategy
Existence	+ (presence)	Artificial Intelligence + Education
	- (absence)	Education - ChatGPT
Truncated	*(unknown or wildcard terms)	Chat* as an educational tool

Source:Own elaboration

Activity 6	
Construction of search strategies using operators	
Instructions:	
Build and decipher more complex search strategies for understanding.	
Strategy Expressed need	Description Real need=natural language
Example: anxiety AND "academic performance".	Documents containing the word anxiety and the exact phrase "academic performance".
education AND emerging AND technologies	
caries (albahaca OR "Ocimum basilicum")	
"soft skills AND hard skills AND education site:edu.mx	
challenge* AND technology AND "21st century education" AND -ntic filetype:pdf	
"emerging technologies applied to education".	

Activity 7. Search operators
Instructions:
Supported by activity 6 and already with the knowledge about the use of search operators, make a video in a team to be published in some Internet platform which demonstrates the correct use of these in expressed needs to apply it in a search engine on the topic chosen for the final work..

Conclusions

This chapter finally concludes that the implementation of advanced information retrieval strategies, such as Boolean operators and Boolean logic, are key elements to increase accuracy and relevance in the search for scholarly data. In addition, the development of critical skills to assess the reliability, relevance and pertinence of sources is essential to ensure the quality of the knowledge generated. The combination of theory and practice in the proposed activities reinforces research competences, allowing the effective application of these strategies in various academic and professional contexts. This facilitates access to relevant information and minimises errors related to noise and documentary silence.

References

Antecedents

Rodríguez, C. (2003). Búsqueda de información en Internet: Operadores booleanos y de proximidad. Revista Anales de Documentación, 6, 169-180.

Basics

American Psychological Association. (2020). Publication manual of the American Psychological Association (7th ed.).

Support

Barroso, J. (s.f). Descripción y uso de los operadores booleanos. Biblioteca Virtual Miguel de Cervantes.

Cosío, D. (s/f). Estrategias de búsqueda. Recuperado el 09 de septiembre de 2017.

Universidad de Almería. (s/f). Guía de búsqueda y recuperación de información.

Differences

Pinto, M. (2015). Silencio y ruido documental: conceptos básicos en la recuperación de información. Revista Interamericana de Bibliotecología, 38(2), 157-172.

Discussions

Torres, C. (2003). Estrategias de búsqueda en bases de datos. Revista de Investigación Bibliotecológica, 17(33), 9-22.

Chapter III: Information access tools

Capítulo III: Herramientas de acceso a la información

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CONAHCYT classification:

Area: Humanities and Behavioral Sciences
Field: Pedagogy
Discipline: Educational theory and methods
Subdiscipline: Other

Key A-Books

Encourage open access to information, which allows students to use resources without restrictions, thus facilitating scientific and technological progress. Similarly, the importance of the use of technological tools that allow the efficient management, analysis and use of large volumes of information is emphasized. Finally, the application of search methods is highlighted, with the use of logical operators, proximity and absence, which optimize the precise location of relevant information, promoting the generation of new quality knowledge. Adequate use of technological tools, such as databases, search engines and academic search engines, which are essential to access reliable information. In addition, be aware of basic and advanced search methods, using logical, proximity and absence operators to optimize the accuracy and relevance of the results. Recognizing the importance of open access to information fosters equity and innovation, while ethics and responsibility ensure that the knowledge obtained is used with integrity, respecting copyrights and avoiding misuse of information. Finally, critically evaluating the quality of sources ensures that the knowledge generated is reliable and meaningful. This chapter offers a complete overview of the different tools and resources that are available for searching, accessing and retrieving information, which can be used in academic and professional contexts. An extensive diversity of databases, both specialized and multidisciplinary, as well as search engines and repositories, are entered and analyzed, all of which guarantee valuable and reliable information. The importance of knowing and using this type of resources in an ethical and responsible manner facilitates the research process, thus ensuring the generation of knowledge.
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A-Books shelf URL: https://www.ecorfan.org/a-books.php

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Abstract

Nowadays, tools for accessing information and generating knowledge are of utmost importance in the academic, scientific, and social fields. Using technology ensures the effective management of large amounts of information. This chapter analyzes how open access to information contributes to scientific and technological progress, while providing access to various documentary databases, search engines, academic search engines, and repositories. It explores different basic and advanced search methods, including logical, proximity, and absence operators, which facilitate the generation of universal knowledge. It also ensures that the quality of the knowledge generated from the obtained information is used ethically and responsibly.

Information access tools		
Objetives	**Methodology**	**Contribution**
Open access Scientific and technological progress Technological Documentary databases Repositories	Technology Information Documentary databases Search engines Repositories Search methods	Process of searching Open access Technological advancement Ethically and responsibly

Open access, databases, knowledge generation

Resumen

Hoy en día, las herramientas de acceso a la información y la generación del conocimiento son elementos de suma importancia en el ámbito académico, científico y social. Utilizar la tecnología garantiza el manejo de grandes cantidades de información. En este capítulo se analiza cómo el acceso abierto a la información contribuye al avance científico y tecnológico, al mismo tiempo se accede a diferentes bases de datos documentales, motores de búsqueda, buscadores académicos y repositorios. Utilizando diferentes métodos de búsqueda básicos y avanzados con operadores lógicos, de proximidad y de ausencia, con lo que se hace más fácil la generación del conocimiento universal. Asegurando que la calidad del conocimiento que se genera con la información que se obtiene, sea utilizada con ética y responsabilidad.

Herramientas de acceso a la información		
Objetivo	**Metodología**	**Contribución**
Acceso abierto Avances científicos Tecnología Bases de datos documentales Repositorios	Tecnología Información Bases de datos documentales Search engines Repositorios Metodos de búsqueda	Proceso de búsqueda Acceso abierto Avances tecnológicos Uso ético y responsable

Acceso abierto, bases de datos, generación del conocimiento

Introduction

In this third chapter, the reader will be able to consult the tools for accessing information according to the information required, such as databases (bibliographic, full-text, academic and specialised), Internet search engines (search engines, academic search engines, repositories). Databases are important as they offer specialised and reliable access to information that is properly organised and structured, allowing personalised searches and access to quality, valuable and reliable content. These tools provide up-to-date and specialised resources, essential for the efficient management of information in academic and professional contexts.

Document databases

A database is defined as a collection of information on a given subject, structured in records (Smith, 2020). Databases are nowadays produced in digital format, which allows a large amount of information to be accumulated in a small amount of space and to be searched more efficiently at a later date.

A typical database record consists of a set of fields with attributes and values. These records contain relevant information such as the author, date of publication, publisher, title and edition of a given publication. In addition, they may include a summary or excerpt of the original publication for ease of reference and understanding.

Box 1

Food science & technology : information quarterly of the Institute of Food Science and Technology.

Colaborador(es): Institute of Food Science and Technology (U.K.)

Tipo de material: 🔗 Recurso continuo

Detalles de publicación: London : Boston Hannah Communications, Ltd., c2001-

Descripción: v. : il. ; 30 cm

ISSN: 0950-9623

Otro título: FS & T | Food science and technology | FS&T

Tema(s): Tecnologías de alimentos-Publicaciones serias | Conservas alimenticias-Publicaciones serias | Food industry and trade-Periodicals | Food Technology-Periodicals

Clasificación LoC:TX341 | .F6

Figure 1
Catalogue Catalogue Catalogue Library of the Autonomous University
of Nayarit in normal view

Classification of documentary databases

A database is defined as a set of information structured in records and related to a specific subject (Smith, 2021). Databases are nowadays created in digital format, which allows a large amount of information to be stored in a small space and facilitates subsequent searching.

A typical database record consists of fields with attributes and values (Brown, 2020). These records contain details about the author, date of publication, publisher, title, edition and other relevant aspects of a given publication. In addition, they may include a summary or excerpt of the original publication to provide an overview of the content.

A) According to content

There are two main types of reference databases.

Referential databases

These are representations and/or references to primary sources, and their purpose is to describe and enable the location of documents in different formats, such as print, sound, iconographic, audiovisual or electronic. It is important to note that these records do not contain the original text, but provide essential information about the documents. This information may include summaries and descriptors, which makes it secondary information. They are further divided into:

1. **bibliographic databases:** which present lists of references to printed literature. An example of this type of database is a library catalogue, which allows you to locate books and other documents in a library.

2. **Directory databases:** which represent primary sources related to people, organisations, companies, products, among others.

3. **Bibliographic databases:** Online public access catalogues (OPACs) are computerised public access systems that allow search, query and display of a library's bibliographic and non-librarian records.

They are designed to interact with users and are an essential part of automation systems in libraries.

Box 2
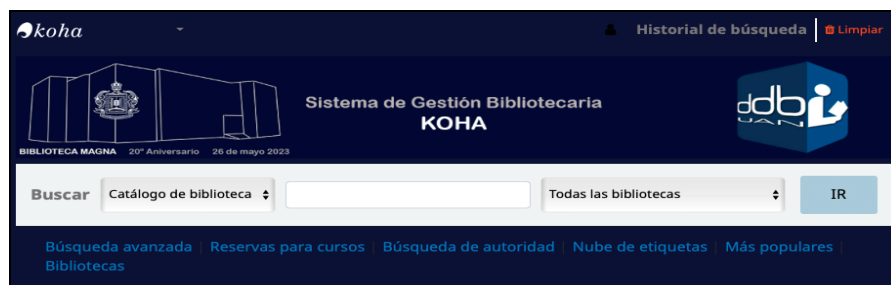
Figure 2

Online public access catalogue of the Universidad Autónoma de Nayarit

Source: [UAN› Bibliotecas, 2023]

Box 3

Figure 3

Register Catalogue Catalogue Library of the Universidad Autónoma de Nayarit in ISBD view

Source: [UAN› Bibliotecas, 2023]

Activity 1 Use of the online catalogue	
Instructions: Enter the catalogue of the UAN Magna Library. Perform the following searches and fill in the missing data in the tables. In addition, locate topics of your interest, using the different search options offered by the system.	
Basic Search :	
Title Author Number of copies Year ISBN Symbol Barcode of titles for home lending APA Reference Vancouver Reference	 TA332.5.F8 2012
Title Author Number of copies Year ISBN Symbol Barcode for titles on home loan Reference in APA style Reference in Vancouver style	Instructional Design: Theories and Models: A New Paradigm of Instructional Theory.
Title Author Number of copies Year ISBN Symbol Barcode for titles on home loan Reference in APA style Reference in Vancouver style	 9684388020
Title Author Number of copies Year ISBN Symbol Barcode for titles on home loan Reference in APA style Reference in Vancouver style	Human Anatomy Latarjet M
Title Author Number of copies Year ISBN Symbol Barcode for titles on home loan Reference in APA style Reference in Vancouver style	 HV6025 .C3 1955
Advanced Search:	
a) Locate a thesis that strengthens the theme of your integrating case Title Author Number of copies Year ISBN Symbol Barcode for titles on home loan Reference in APA style Reference in Vancouver style	

b) Locate a map of the municipality to which you belong
Title
Author
Number of copies
Year
ISBN
Symbol
Barcode for titles on home loan
Reference in APA style
Reference in Vancouver style

c) Locate a book that strengthens the theme of your integrative case study.
Title
Author
Number of copies
Year
ISBN
Symbol
Barcode for titles on home loan
Reference in APA style
Reference in Vancouver style

d) Locate an article in a scientific journal that strengthens the theme of your integrative case.
Title
Author
Number of copies
Year
ISBN
Symbol
Barcode for titles on home loan
Reference in APA style
Reference in Vancouver style
Title
Author
Number of copies

e) Locate a DVD, CD or Videocassette related to your area of knowledge.
Title
Author
Number of copies
Year
ISBN
Symbol
Barcode for titles on home loan
Reference in APA style
Reference in Vancouver style
Title
Author
Number of copies
Year

2. **Source databases or databanks: They contain primary or original information. These databases can be classified into two types**

a) **Numerical databases:** which provide numerical information such as timetables, fares, statistics and quotations.

b) **Full-text databases:** which, as their name suggests, provide access to complete books, articles, journals, magazines and newspapers.

a. Numerical databases*:* These databases contain primary or original information. They also provide numerical information such as timetables, fares, statistics, quotations.

The following is an example of a numerical database:

INEGI Database

The National Institute of Statistics, Geography and Informatics (INEGI) database aims to provide society and the State with quality, relevant, accurate and timely information, in order to contribute to national development, under the principles of accessibility, transparency, objectivity and independence (Instituto Nacional de Estadística, Geografía e Informática [INEGI], n.d.).

The great impact that this numerical database has had is the online information service it provides, so that the student can access geographic and statistical data of our country, state, locality and community or context in which he/she develops (INEGI, n.d.).

To access the database, one can visit the official INEGI portal at www.inegi.org.mx. Through the available menu, information can be obtained by browsing three of its main lists: Information Programmes, Consultation Systems and Infrastructure, using its indexes as a reference. One way to search for information is through the search box located on the top right hand side of INEGI's official website. Here, simply enter the concept of interest and select the 'Search' button to start a general search. Another option for searching and retrieving information is through 'Mexico in Figures: National Information', where you can select the state and municipalities of interest on the map or in the list displayed, which includes all the states of our country (INEGI, sf).

Box 4
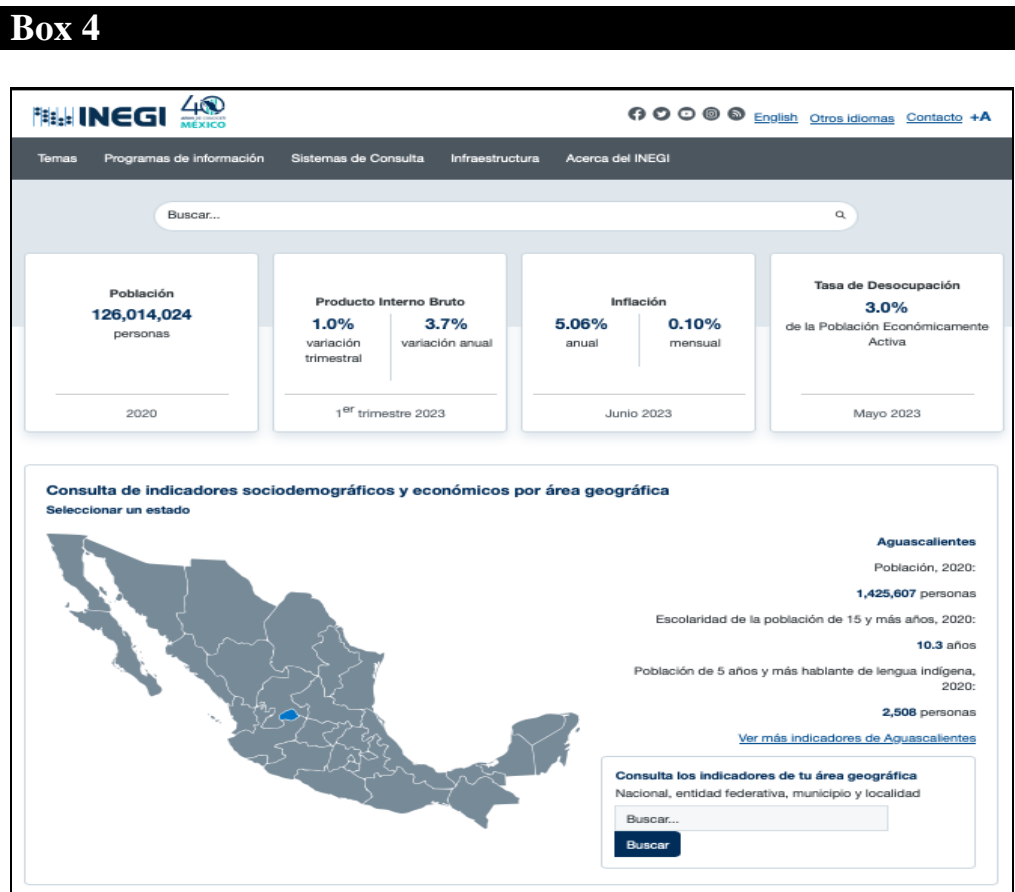
Figure 4

Main screen of INEGI's numerical data base

Source: [INEGI, s/f]

		International organisations	**INEGI**	
			National	**Local**
0.		**World Bank Group (WBG).** Climate change, poverty and inequality are critical challenges of our time, and it is crucial that we address them together, aware of the interconnections between people, planet and economy. address them together, mindful of the interconnections between people, the planet and the economy. The impacts of climate change (in terms of loss of livelihoods, food and water insecurity, and impacts of climate change) are and water insecurity, and adverse impacts on human capital), coupled with poverty and inequality, pose a serious threat to the goals of the Millennium Development Goals (MDGs), pose a serious threat to the WBG's goals of alleviating extreme poverty and boosting shared prosperity. shared prosperity. In cases where climate change interacts with other social, economic and environmental pressures Where climate change interacts with other social, economic and environmental pressures, compound risks emerge that can increase vulnerability, exacerbate grievances and deepen pre-existing fragility4. Climate change also increases the risks of internal displacement risks of internal displacement, migration and instability. The costs of unmitigated climate change are increasing every year, and rapid and ambitious climate action is needed by all countries. Harnessing and mobilising private capital in support of this agenda is also of paramount importance to achieve both scale and impact.	In 2018, only 12.5 % of large establishments in Mexico had staff engaged in environmental protection activities. - 56.6 % of large economic units did not apply any environmental protection measures; 27.5 % said they were unaware of the obligation and 15.9 % were environmental protection measures; 27.5 % said they were unaware of the obligation and 15.9 % complied with at least one of these measures, at least one of these measures. - In 2018, 65.1 % of large companies sent their waste to landfills; 65.1 % of large companies sent their waste to landfills; 15.9 % of large companies sent their waste to landfills (landfills); 29.4 % transferred it to service companies for waste handling and transportation, and 5.5 % recycled or reused it in the production process. - In 2020, 106,523,139 kg of municipal solid waste were collected daily. In 2018 the figure was 107,055,547 kg.	One of the main environmental problems is related to solid waste; This is the result of consumerism combined with the inadequate disposal of solid waste. In the state, it is estimated that around 1,800 tonnes of solid waste are generated daily (INEGI, 2021). (INEGI, 2021); of which 81.6 per cent of households collect it from the municipal services to be deposited in the 13.21% of households in the state report burning their waste, while 2.08% leave it in a container or deposit, 1.48% take it to the public dump, and the rest throw it away in some other place. somewhere else (1.31%) or bury it (0.34%).

b. Full-text databases: At the time of the search, it is indicated when access to all the information of the searched document is available

Below are some examples of full-text databases

Dialnet: is a multidisciplinary bibliographic platform that provides access to a wide variety of academic and scientific content in Spanish. This database includes articles, books, theses, journals, congresses and other academic documents, covering various disciplines.

Dialnet is a useful tool for researchers, students and professionals interested in academic literature in Spanish (Dialnet, 2023).

Box 5

Figure 5

DIALNET database main screen

Source: [Dialnet, 2023]

The official Dialnet website can be accessed through the following URL: www.dialnet.unirioja.es. On the main screen there is a search box to enter keywords related to the research. When browsing the results, click on the titles to access the full text. It has advanced features such as search alerts and personal library.

Redalyc: (Red de Revistas Científicas de América Latina y el Caribe, España y Portugal) is an online platform that offers access to a large collection of scientific and academic journals in various subject areas. This database focuses on quality publications produced in Latin America, the Caribbean, Spain and Portugal, and aims to foster the dissemination and visibility of research conducted in these regions (Redalyc, 2023).

Redalyc can be accessed through its official website at www.redalyc.org. Once there, you will find the main menu that allows you to navigate and search for information efficiently. By using the search bar, results are obtained either by author, title or specific keywords. In addition, Redalyc even offers filtering and sorting options to refine the search results. Once the desired article is found, the full text can be accessed in PDF format for reading and downloading.

Box 6
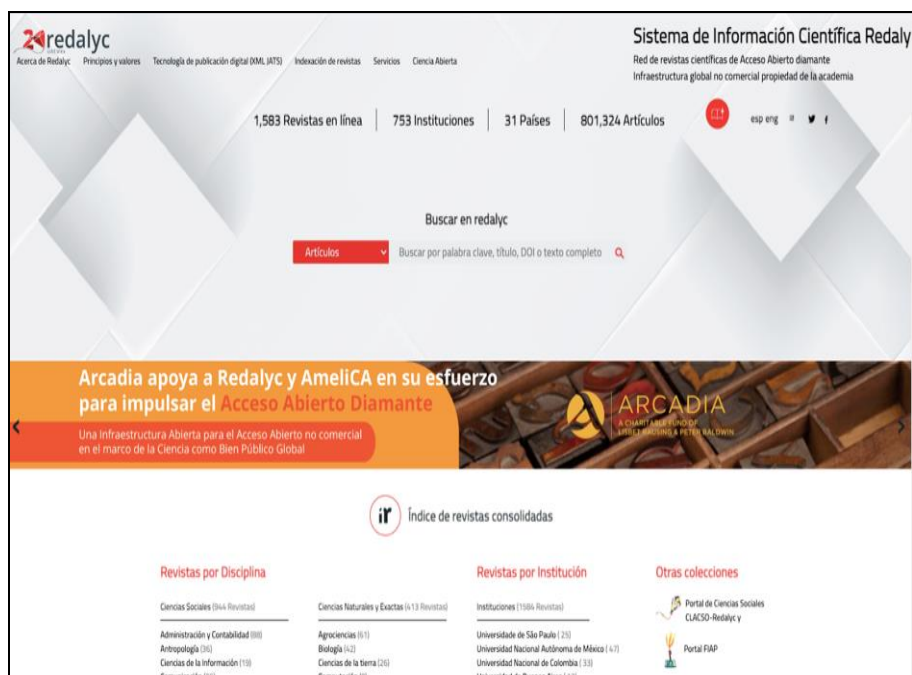
Figure 6

Redalyc database main screen

Source: [Redalyc, 2023]

DOAJ: (Directory of Open Access Journals): is a database that collects and provides access to high-quality open access scientific journals in multiple disciplines. This platform seeks to promote the dissemination of scientific knowledge free of charge and without restrictions, allowing researchers and the general public to access peer-reviewed and open access scientific articles (DOAJ, 2023).

Visiting the database can be done from its official website at www.doaj.org. Through the homepage, you can search for journals by title, subject or ISSN, and explore the different categories available. We recommend using the filters and advanced search options to refine your results and access articles of interest.

Box 7
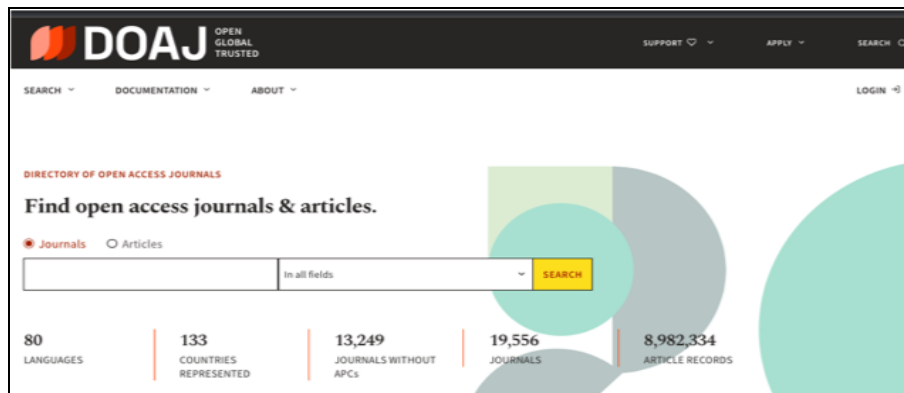
Figure 7

DOAJ database main screen

Source: [DOAJ, 2023]

Conricyt: (Consortium for Higher Education Publications): Conricyt is a Mexican consortium that provides access to a wide variety of academic resources and databases to higher education institutions and research centres in Mexico. Through Conricyt, users have access to a wide range of resources, including databases, scientific journals, e-books and other academic materials, facilitating research and learning in different disciplines (Conricyt, 2023).

CONRICyT, can be visited on the official website at the URL www.conricyt.mx. Through the portal, users can explore the various databases available, such as PubMed, IEEE Xplore, ScienceDirect, and perform advanced searches, access scientific articles, journals and other high quality academic resources.

Box 8

Figure 8

CONRICyT database main screen

Source: [Conricyt, 2023]

B) According to coverage

4.   **Scientific-technological databases:** these are aimed at researchers in various scientific and technical areas.

Within this group, we can distinguish two sub-types:

(a)   Multidisciplinary databases: they cover several scientific or technical disciplines.

(b)   Specialised databases: they compile and analyse documents relevant to a specific discipline or sub-discipline, such as biomedical, pharmaceutical, chemical, agri-food, social, humanistic research, among others.

a) Multidisciplinary databases: The following are some of the most important multidisciplinary resources.

Box 9
Table 1
Database

Database	Description
Academic Search Complete:	It is a multidisciplinary database widely used in academia. It provides access to a wide range of resources, including scholarly articles, scientific journals, technical reports, theses, e-books and more. The database covers diverse areas of knowledge, such as social sciences, humanities, natural sciences, technology, medicine and more (Academic Search Complete | EBSCO, 2023).
Annual Reviews:	It is a database that publishes annual reviews in various areas of science, such as biology, chemistry, physics, psychology, economics and more. It provides an up-to-date and critical synthesis of the state of research in each field (Annual Reviews, 2023).
Dialnet:	It is an online bibliographic and hemerographic database that offers access to a wide variety of academic content in Spanish. It was created by the University of La Rioja, in Spain. It covers different areas of knowledge, including social sciences, humanities, natural sciences, engineering, health sciences and more. It provides access to thousands of scientific journals, books, theses, conference proceedings and other academic documents (Dialnet, 2023).
JSTOR:	It is a digital database that provides access to an extensive collection of scholarly articles, books and primary sources in a variety of disciplines. Founded in 1995, JSTOR has established partnerships with libraries and publishers to digitise and preserve high quality scholarly content in multiple fields of knowledge (JSTOR, 2023).
Redalyc:	It is a scholarly database that focuses on research and publications by authors from Latin America and the Caribbean. It provides access to scientific articles in various disciplines and promotes the dissemination of regional research (Redalyc, 2023).
Scopus:	It is a bibliographic and abstracting database of academic and scientific literature, covering a wide range of disciplines. It is one of the world's largest and most recognised databases in the field of research.

Box 10
Table 2
Platforms

Platform	Description
Gale Engage Learning:	Online learning platform developed by Gale, a renowned publisher of educational and research resources. offers a wide range of educational resources, including e-books, journal articles, videos and reference materials in various academic disciplines (Education, Learning and Research Resources Online | Gale, 2023).
ProQuest:	Database platform offering access to a wide range of academic and professional resources. Provides a diverse collection of content covering areas such as social sciences, humanities, business, health, technology and more. ProQuest includes a variety of resources, such as journal articles, theses and dissertations, technical reports, e-books and newspapers (ProQuest, 2023).
Scielo:	Scientific Electronic Library Online is an electronic library and online scientific publishing platform that provides open access to a large collection of scientific and academic journals in Latin America, Spain, Portugal and other Spanish and Portuguese-speaking countries. It covers diverse areas of knowledge and promotes the visibility of research in the region (scielo, 2023).
ScienceDirect:	Online platform offering access to a wide range of scientific, technical and medical journals. It hosts thousands of peer-reviewed academic journals in diverse fields of knowledge, including natural sciences, social sciences, engineering, medicine and more (About ScienceDirect | Elsevier, 2023).
Source OECD:	Online platform offering access to publications, statistics and other data produced by the Organisation for Economic Co-operation and Development (OECD). It provides information on economics, development, public policy and other areas relevant to OECD member countries (About the OECD - OECD, 2023).
SpringerOpen:	Platform that publishes peer-reviewed open access journals in various areas of knowledge. It provides free access to scientific articles and promotes the dissemination and sharing of knowledge (SpringerOpen, 2023).
Taylor & Francis Online:	Online platform that hosts an extensive collection of academic journals, books and research articles in various disciplines. It offers access to high quality multidisciplinary content, covering areas such as social sciences, humanities, natural sciences, technology and medicine (Taylor and Francis Group, 2023).
Web of Science:	Scientific information platform offering access to a wide range of scholarly resources, including scientific journals, conferences, books and patents, covering a variety of academic disciplines, selective indexing of scholarly literature, which means that it only includes articles and journals of high quality and academic relevance (Web of Science. 2023).
Wiley Online Library:	Digital resource platform offering access to a wide range of academic, scientific and technical content. It covers a wide variety of knowledge areas, including social sciences, humanities, health sciences, natural sciences, technology and more. Journals are peer-reviewed and contain high-quality research and scholarship (About Wiley Journals - Librarians, Wiley Online Library, 2023).

Box 11

Table 3

Journals

Nature:	A journal that covers diverse scientific areas and is known for its rigorous peer review and the quality of its publications (Portfolio Nature, 2023).
Science AAAS:	The official journal of the American Association for the Advancement of Science (AAAS) is known for the rigour of its peer review and the quality of its publications, and publishes outstanding research in a variety of scientific disciplines (Mission and History | American Association for the Advancement of Science [AAAS], 2023).

b) Specialised databases: Some of the specialised databases are listed below

Specialised databases collect and analyse documents relevant to a particular discipline or sub-discipline: Biomedical, Pharmaceutical, Chemical, Agrifood, Social, Humanistic, Economics, Management, etc. research.

Box 12

Table 4

Specialised databases by area of knowledge

Agricultural, Livestock and Fisheries Biological Sciences Area	
Fisheries Engineering, Agricultural Engineering, Aquaculture, Biology, Veterinary Medicine and Zootechnics.	
BioONE:	Database specialising in biological sciences and related fields. Its content focuses on research, articles and scholarly publications in areas such as biology, ecology, botany, zoology, microbiology, among other biological disciplines (About the BioOne Digital Library | BioOne, 2023).
AGRICOLA:	USDA database covering a wide range of topics related to agriculture and food science, including biological sciences, agricultural production, pest management, genetics, among others. It provides access to scientific literature, techniques and resources related to agriculture and applied life sciences.
Health Sciences Area	
Dental Surgeon, Nursing, Medical Surgeon, Pharmacobiological Chemist, Nutrition, Physical Culture and Sport.	
Access Medicine:	Online database providing access to a wide range of resources related to medicine and evidence-based medical care, Clinical Medicine, Surgeries, Genetic Medicine, Neurology, Medical Diagnostics, Geriatrics, Medical Epidemiology, Gynaecology and Obstetrics,
Codex alimentarius:	Surgical Treatments, Paediatric Treatments and Immunology. It includes textbooks, diagnostic and treatment guides, clinical cases, videos and other resources related to various medical specialties (McGraw-Hill, 2021).
IMBIOMED:	Database focuses on food safety and aims primarily to ensure the protection of consumer health and promote fair practices in the food trade. Standards, regulations and other related texts, such as codes of practice, under the joint FAO/WHO Food Standards Programme. The main goals of this programme are to protect consumer health, ensure clear trade practices and promote coordination of all food standards agreed upon by governmental and non-governmental organisations (About Codex | FAO-WHO Codex Alimentarius, 2023).
JAMA Network:	Specialised database in the field of health sciences. Focuses on collecting and disseminating information related to medical, biomedical and general health research (Alvaro, n.d.).
MEDLINEPlus:	Database specialised in the field of medicine and health. It contains a wide variety of information and resources related to research, clinical studies, systematic reviews, scientific articles, clinical practice guidelines and other relevant topics in the medical field. (JAMA Network, 2023).
PubMed:	Online database offering information on health and wellness (MedlinePlus, 2023).
Area of Economic and Administrative Sciences	
Administration, Accounting, Economics, Computer Science, Marketing, Computer Systems, Tourism, Tourism Innovation and Management, and Agribusiness..	
EconLit:	Database specialising in economics and related disciplines. Provides access to journal articles, books, technical reports and working papers in economics, finance, statistics and related fields (American Economic Association, 2023).
Business Source Complete:	Comprehensive, multidisciplinary database covering management, accounting, economics, marketing, finance and related fields. Includes academic journal articles, company reports, case studies and industry analysis (Business Source Complete | EBSCO, 2023).
Social Sciences and Humanities Area	
Political Science, Education, Law, Philosophy, Psychology, Applied Linguistics, Korean Studies, Korean Studies, Communication and Media.	
PsycINFO:	Database produced by the American Psychological Association (APA). Contains a wide range of scholarly literature in the field of psychology and related disciplines, including clinical psychology, experimental psychology, educational psychology, health psychology, developmental psychology and more. Includes journal articles, books, theses and conferences (American Psychological Association, 2021).
SpringerLink:	Platform providing access to scholarly books and journals in science, technology, medicine, humanities and social sciences (Springer, 2023).
ERIC:	database provides access to a variety of educational resources, such as scholarly journal articles, research reports, theses and dissertations, books and book chapters, conferences and presentations, teacher training materials, and multimedia resources, related to education, including teaching, learning, pedagogy, educational administration, educational psychology, educational technology, among others (Home Page, a part of the U.S. Department of Education - Institute of Education Sciences [IES], 2023).
ILOLEX:	A database developed and maintained by the International Labour Organization (ILO) that focuses on providing legal information related to the world of work and labour rights. It contains a wide range of legal documents, such as international labour conventions, recommendations, judicial decisions, national laws and regulations, reports of expert committees and other labour-related legal instruments (About the ILO/International Labour Organization, 2023).
Political Database of the American:	Database offers centralized and systematized information on political institutions and processes, national constitutions, branches of government, elections, political and constitutional studies and other topics related to the strengthening of democracy in the region. With more than 1,500 pages of information, the PDBA is one of the preferred sources of political information on the Internet and reaches more than 600,000 users per month. About the Political Database of the Americas (Political Database of the Americas, 2023).

Basic Sciences and Engineering Area	
Computer and Control Engineering, Electronics, Mechanics, Chemistry, Mathematics and Mechanical Engineering.	
IEEE Xplore:	Database focused on engineering, technology and related disciplines, offering access to articles, conferences and technical standards (Institute of Electrical and Electronics Engineers, 2023).
ETDEWEB: Energy Technology Data Exchange Worldwide:	Database specialising in the field of energy and related technologies. Covers a wide range of energy-related topics, including conventional and alternative energy sources, energy generation technologies, energy efficiency, energy policy, environment and sustainability, among others (ETDEWEB, 2023).
MathSciNet:	Bibliographic database that indexes and provides access to peer-reviewed mathematical literature. It contains information on journal articles, books and conference proceedings in the field of mathematics. It also provides links to the full version of articles when they are available online (American Mathematical Society, 2023).

Activity 3

Retrieval of information from multidisciplinary databases

Instructions:

Recognised the topic of the final paper, search for five research articles in recognised multidisciplinary databases that help the development of the integrative case (Final Paper), use reference in American Psychological Association (APA) style.

After the search you have already done, answer the following activity, in the following table you can be guided by the example No. 0.

Matrix for Data Collection at Source of Information

Title of the document: Impact of corporate social responsibility on private health institutions in Azogues

Reference in APA Style 7:

    0. Calle, C. A., Erazo, Á. J., & Vásquez, E. E.. (2022). Impacto de la responsabilidad social empresarial en las instituciones de salud privadas de Azogues, Ecuador. *Revista Universidad y Sociedad, 14*(5), 621-629. Epub 30 de octubre de 2022. Recuperado en 18 de enero de 2024, de http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S2218-36202022000500621&lng=es&tlng=es.

Source type:

    0. 0.   Magazine article

Author(s) and year	Key words	Purpose, Hypothesis or Objective of the study (between 60 and 90 words -textual)	Methodology (between 60 and 90 words -textual)	Result (between 60 and 90 words -textual)	Impact (No. Citation)	Paraphrase of the content of the article (between 60 and 90 words -textual)
0. Calle, Erazo y Vásquz	Corporate Social Responsibility; Health; Quality; Service; Customers; Social Responsibility	The aim of this research is to determine whether private clinics in the city of Azogues include CSR practices in their strategic planning by evaluating the management of the administration. The application of surveys allows for the collection of information from the sample and identifies whether these policies, through the perception of both the internal and external public, are reflected in the corporate image of the health entities.	The study methodology used for this research had a mixed qualitative-quantitative approach. The qualitative approach allows us to identify the degree of knowledge that people have about a phenomenon or circumstance, and the way in which they identify it. The quantitative approach consists of determining variables that will enable the problem to be analysed and the objectives to be achieved.	The results of the research are divided into five dimensions: external public, community and environment, ethical values, corporate image, internal public and suppliers. The analysis is based on surveys carried out with users, administrative and operational staff working in private clinics in the city of Azogues.	13	Corporate Social Responsibility (CSR) in the health sector involves selecting suppliers, qualified personnel and setting competitive prices to build customer loyalty and obtain economic benefits. An investigation in private clinics in Azogues revealed the inclusion of CSR policies in their internal plans. They seek excellence with continuous training, awareness campaigns and an ethical approach to business, improving their corporate image for the common good.

Search engines

Search engines are websites that help us to easily find other websites on the internet. They usually work by entering keywords, (University of Seville, 2014).

How do search engines work?

They use 4 components:

1. A program that scours the internet to locate addresses and retrieve documents.
2. An indexing system, which is a program that receives the pages retrieved by the robot and returns them in the form of an index in a database.
3. A search engine or searchengine. It is in charge of analysing and organising the query requested by the user in the index of related documents.
4. An interface is the connecting element that facilitates the exchange of data (Rodriguez, 2001).

**Search engines or content search engines**

These are Internet tools that make it possible to locate resources on the Internet on a given topic or search item.

Google: is the most widely used search engine worldwide. It provides relevant and accurate search results, and has a wide range of additional features and services, such as search for images, maps, videos, news and much more. Google also offers services such as Gmail, Google Drive and Google Docs. It uses advanced algorithms to index and rank websites, providing users with relevant and up-to-date results.

These tools are made up of several sections that facilitate the search for information.

1. **Search box,** where you type in the keywords you want to search for, and to the right of it you will find the 🔍 button which means 'Search'.
2. **Search tools**, which allow you to specify the search by country, language or date.
3. **Result data,** which indicates the number of results found, the number of pages retrieved and the time spent on the search.

List of retrieved links, where each result is composed of several lines. These lines show the search term, a part of the paragraph in which the keywords are found and, at the end, the corresponding URL or link.

Box 13
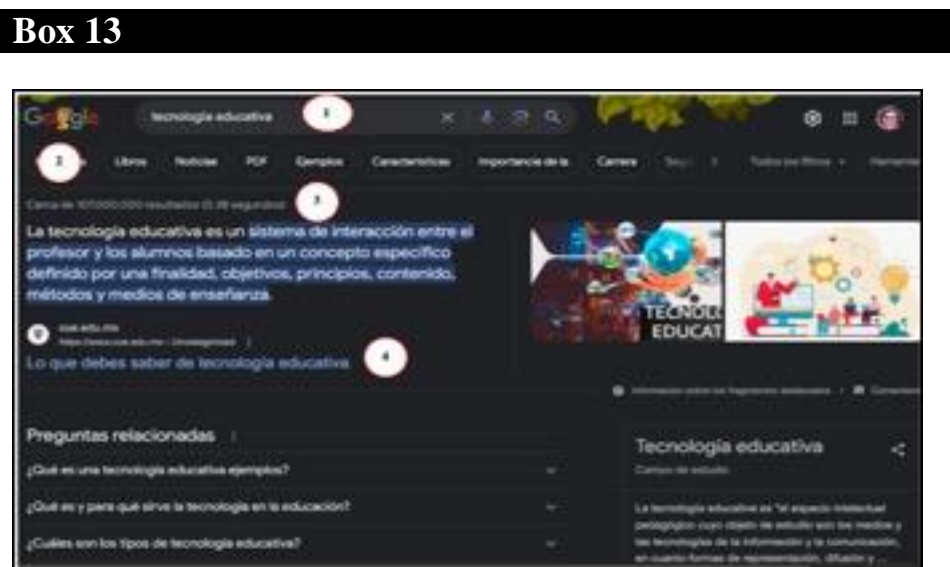
Figure 9
Advanced Google Search

The following table lists a number of advanced Google operators that allow for more effective searching.

Box 14

Table 5

Google Operators

Operator	Description
Site	Website where information is required
" "	To consult exact phrases
Filetype	Type of file required in the query
Allinurl	Searches for terms in the content of the web page (web address)
Allintitle	Searches for the first term in the content of the web page (web address)
Inurl	Search for the terms in the title of the Web page
Intitle	Searches for the first term in the title of the web page
(Rango) ..	To indicate a period to consult

Box 15

Table 6

Example: Using Google operators

| Conduct a search and retrieval of information in Excel spreadsheet files (xls), on maize grain production in the States of Nayarit and Hidalgo, only from the National Institute of Statistics and Informatics (INEGI).			
Term	States	Website to request	Types of files requested
Maize	Hidalgo and Nayarit	www.inegi.org.mx	Excel (xls)

Box 16

Figure 10

Advanced Google Search Screen

This would be the instruction indicated in the search box:

Term	Term	Term	Operator	Operator
Maize	Nayarit	Hidalgo	site:inegi.org.mx	Filetype:(xls)

Box 17
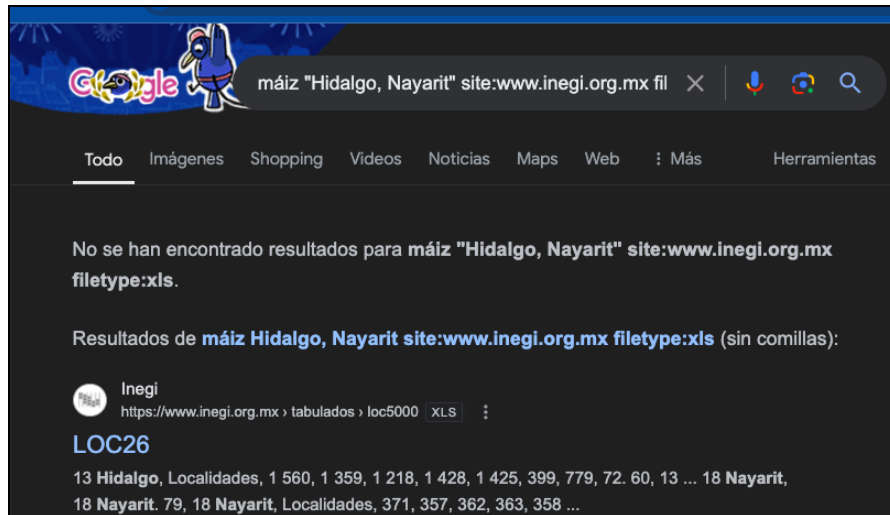
Figure 11

Advanced Google search result

The idea of integrating a series of functions and operators, in order to have a wider knowledge of the scopes offered by some search engines, leads to more efficient searches.

Academic Search Engines

These are Internet tools that allow you to locate resources on a subject. Academic search engines are information systems that focus exclusively on indexing and providing access to online resources related to academia. This includes scientific journal articles, research, conference presentations, theses and dissertations, patents, books and websites of educational institutions.

Google Scholar

Provides a simple and comprehensive way to search for scholarly and scientific literature from one window and across a wide variety of sources and disciplines. These sources include articles, theses, dissertations, abstracts, academic publishers, professional communities, online repositories and other websites (Google, 2023).

Box 18

Figure 12

Advanced Google Search result

Some important features of Google Scholar are as follows:

- It was created in 2005 and its main contribution lies in the ease of providing cited academic materials.

It records journal articles, books with the indication of the libraries where they can be found, documents and web pages of academic institutions, and research and theses from open access repositories.

The consultation of available digital books is due to the agreements signed with prestigious university libraries.

The homepage has a search box and direct links to advanced search options, preferences, language tools, and more.

- Using the advanced search, it is possible to search by field, author, date, all words, exact phrase or by specific areas.

Records retrieved can be displayed in quantities such as 10, 20, 30, 30, 50 or 100 per screen.

Google Scholar allows you to search all scholarly literature from one window, browse related works, citations, authors and publications, locate the full document through the library or on the web, keep up to date with the latest developments in any research area with programmable alerts, and describe who is citing your publications and create a public author profile.

It also offers functionalities such as:

- **My Library**, where you can save the results of your searches. Firstly, a Google account is required to create a space where you can save the results of your searches, with the advantage of being able to retrieve them whenever you need them.

- **My Citations**, which provides information on the citations made to articles.

- **Alerts** to create alerts on topics of interest

- **Statistics** It displays a summary of the most recent citations of academic publications, providing a parameter to assess the quality of the information.

- **Configure** the number of search results per page, the language of the searches and links to libraries.

- **Advanced search** Provides the possibility to narrow searches (Google, 2023).

In summary, Google Scholar is a valuable tool for searching academic and scientific literature, providing access to a wide variety of sources and offering useful features for researchers and students (Google, 2023).

Activity 4
Progress of the integrative case
Instructions:
Present the progress of your case study. Be sure to include a clear introduction, a general outline of the content, and the key points you have developed so far. This progress will allow you to evaluate your progress and provide you with feedback so that you can improve your final work.

Repositories

Institutional repositories

(RI) are electronic platforms that store and preserve, in digital form, works created in the scientific and academic areas of an educational institution. These repositories are intended to collect, preserve, disseminate and provide open access to the academic and intellectual work of universities, research centres and other organisations, in accordance with the principles of the Open **Access (OA)** movement.

The fundamental aim of IR is to facilitate the dissemination and exhibition of the work of students, teachers and researchers, thereby fostering the exchange of knowledge and promoting academic cooperation. Through IR, users can browse through a variety of documents such as scientific articles, theses, dissertations, research reports, etc., available in digital format.

Access to IR is free of charge for anyone interested in consulting the academic content hosted on these platforms. This means that first year students can use this tool to access works related to their experience using previous research and knowledge in their field of interest.

Aramara Institutional Repository

The Aramara Institutional Repository is an online platform where researchers and postgraduate students of the Universidad Autónoma de Nayarit can deposit and share their academic and scientific work. Through this repository, visibility and free access to the university's intellectual production is promoted, which contributes to the dissemination of knowledge and the strengthening of collaboration between researchers at national and international level (UAN, 2023).

To access the Aramara Institutional Repository, you can visit the following URL: http://dspace.uan.mx:8080/

Box 19

Figure 13

Aramara-UAN Institutional Repository Screen

National Repository

The National Repository is an open access digital platform that offers a wide range of academic, scientific and technological information resources in full-text format. Unlike other platforms, access to this repository does not require subscription, registration or payment, which means that anyone can consult the available materials free of charge. This initiative aims to foster the exchange of knowledge and facilitate access to research and educational resources (UAN - Repositorio Institucional Aramara, 2023). To access the National Repository, simply visit the following URL: https://www.repositorionacionalcti.mx/. Through this platform, you will be able to search, explore the various collections available and access the full text of the documents that interest you.

Box 20

Figure 14

National Repository Screen

The reference

The main objective of La Referencia is to promote open access to scientific production in Latin America. Through a platform with interoperability standards, it facilitates the exchange and visibility of science and learning products generated by higher education and scientific research institutions. They are responsible for integrating scientific articles, doctoral and master's theses from more than one hundred universities and research institutions from the following countries: Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Spain, Mexico, Panama, Peru and Uruguay (LA Referencia, 2023).

To access LA Referencia and its activities, you can visit its official website at the following URL: https://www.lareferencia.info/es

Box 21

Figure 15

National Repository Screen

Conclusions

This chapter provides a comprehensive overview of the different tools and resources that are available for searching, accessing and retrieving information, which can be used in academic and professional contexts. An extensive diversity of specialised and multidisciplinary databases, search engines and repositories are entered and analysed, all of which guarantee valuable and reliable information.

The importance of knowing and using these resources in an ethical and responsible manner facilitates the research process, thus ensuring the generation of knowledge.

References

Antecedents

Álvaro, O. (s/f). IMBIOMED, base de datos.

Brown, A. (2020). Introduction to Database Management. New York, NY: ABC Publishers.

Rodríguez, J. (2001). Bases de datos. Editorial Alfaomega.

Universidad de Sevilla. (2014). Guías y tutoriales de informática. Cómo buscar información en internet. Sevilla, España.

Basics

American Economic Association. (2023). Asociación Económica Americana.

American Mathematical Society. (2023). American Mathematical Society: Homepage.

American Psychological Association. (2020). Publication manual of the American Psychological Association (7th ed.).

Annual Reviews. (2023). Home.

Asociación Estadounidense para el Avance de la Ciencia | Misión e Historia (AAAS). (2023).

BioOne. (2023). About the BioOne Digital Library.

Conricyt (Consortium for Higher Education Publications): (2023). Título del sitio.

Dialnet. (2023). Acerca de Dialnet.

DOAJ (Directory of Open Access Journals): (s.f.). About DOAJ

EBSCO. (2023). Academic Search Complete | EBSCO.

EBSCO. (2023). Business Source Complete | EBSCO.

Elsevier. (2023). About ScienceDirect | Premier platform for discovering peer-reviewed scientific, technical and medical information.

Elsevier. (2023). About Scopus—Abstract and citation database |

ETDEWEB. (2023). de ETDEWEB

FAO-WHO Codex Alimentarius. (2023). Acerca del Codex.

Gale. (2023). Education, Learning and Research Resources Online—Gale.

Google. (2023). About Google Scholar.

Google. (2023). Búsqueda Avanzada

Support

Institute of Education Sciences (IES). (2023). Institute of Education Sciences (IES) Home Page, a part of the U.S. Department of Education.

Institute of Electrical and Electronics Engineers. (2023). En IEEE Xplore.

Instituto Nacional de Estadística, Geografía e Informática. (sf). Página oficial del Instituto Nacional de Estadística, Geografía e Informática: Quienes somos.

International Labour Organization. (2023). Acerca de la OIT.

JAMA Network. (2023). JAMA – The Latest Medical Research, Reviews, and Guidelines.

JSTOR. (2023). JSTOR Home.

LA Referencia. (2023). La Referencia: Plataforma de acceso abierto a la producción científica en Latinoamérica.

Diferences

McGraw-Hill. (2021). AccessMedicine – Internal Medicine Clinical Resource.

MedlinePlus. (2023). MedlinePlus—Información de Salud de la Biblioteca Nacional de Medicina.

National Agricultural Library. (2023). Biblioteca Nacional de Agricultura.

National Library of Medicine. (2021). PubMed.

OECD. (2023). About the OECD.

Political Database of the Americas. (2023). About the Political Database of the Americas.

Portafolio Naturaleza. (2023). | Sobre Naturaleza Portafolio.

ProQuest. (2023). ProQuest | Mejor investigación, mejor aprendizaje, mejor conocimiento.

Redalyc (2023). ¿Qué es Redalyc.org?

Repositorio Nacional. (2023). Repositorio Nacional.

Scielo. (2023). Scientific Electronic Library Online

Discussions

Smith, J. K. (2020). The role of databases in organizing and accessing information. In A. Davis & B. Johnson (Eds.), Advances in Information Technology (pp. 55-76).

Smith, M. (2021). Database Systems: Concepts, Design, and Applications.

Springer. (2023.). About SpringerLink.

SpringerOpen. (2023). About SpringerOpen.

Taylor and Francis Group es parte de la División de Publicaciones Académicas de Informa PLC-Sobre nosotros. (2023).

Universidad Autónoma de Nayarit. (2023). Dirección de Desarrollo Bibliotecario› Bibliotecas.

Universidad Autónoma de Nayarit. (2023). Repositorio Institucional Aramara.

Web of Science. (2023). About Web of Science.

Wiley Online Library. (2023). Acerca de Wiley Journals—Bibliotecarios.

Chapter IV: Tools with Artificial Intelligence (AI) for the search, processing, and dissemination of information

Capítulo IV: Herramientas con Inteligencia Artificial (AI) para la búsqueda, proceso y divulgación de información

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CONAHCYT classification:

Area: Humanities and Behavioral Sciences
Field: Pedagogy
Discipline: Educational theory and methods
Subdiscipline: Other

Key A-Books

The research presents significant contributions to the field of Science and Technology through the exploration and analysis of tools based on artificial intelligence that optimize information management. It highlights the role of knowledge maps, which allow organizing and visualizing complex data, facilitating the identification of patterns, relationships and gaps in the scientific literature. It also highlights the contribution of chatbots as virtual assistants, improving accessibility and interaction with information, while addressing ethical and technical challenges. Finally, AI-based search engines are recognized for overcoming the limitations of traditional methods, providing more accurate and relevant results through the use of advanced algorithms. Together, these technologies not only enhance efficiency in information management, but also strengthen the foundations for a more agile and effective development of scientific knowledge in the digital era. To apply to the generation of universal knowledge, it is essential to understand three key aspects highlighted in the research. First, the ability to organize and analyze large volumes of data using tools such as knowledge maps, which facilitates the identification of complex relationships and gaps in existing knowledge. Second, the relevance of chatbots as mediators in accessing and interacting with information, highlighting the need to consider both their technical potential and the ethical dilemmas posed by their implementation. Third, the use of artificial intelligence-driven search engines, whose precision and personalization capabilities optimize the retrieval of relevant information, overcoming the limitations of traditional methods. These elements make it possible to build an efficient and ethical infrastructure for managing knowledge, expanding the possibilities for collaboration and scientific progress in a globalized context..

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Abstract

This chapter examines the use of artificial intelligence (AI)-based tools for information management. It explores three key technologies: knowledge maps, chatbots, and AI search engines. Knowledge maps organize and visualize large data volumes, helping to identify relationships and gaps in the literature. Chatbots serve as virtual assistants, enhancing interaction and information access while also addressing ethical and technical concerns. Finally, AI search engines provide more precise and relevant results through advanced algorithms, surpassing traditional methods. These tools represent significant advancements in optimizing information management in the digital age.

Herramientas de acceso a la información		
Objetivo	**Metodología**	**Contribución**
Analyze	Methodology	Research
AI-based chatbots	Search engine	Knowledge
Information	Information management	Ethical
Searching, processing, and disseminating information	Critical analysis	

Artificial Intelligence, Information Management, Search Engines

Resumen

Este capítulo examina el uso de herramientas basadas en inteligencia artificial (IA) para la gestión de información. Se exploran tres tecnologías clave: mapas de conocimiento, chatbots, y motores de búsqueda IA. Los mapas de conocimiento organizan y visualizan grandes volúmenes de datos, facilitando la identificación de relaciones y vacíos en la literatura. Los chatbots actúan como asistentes virtuales que mejoran la interacción y el acceso a la información, abordando también aspectos éticos y técnicos. Finalmente, los motores de búsqueda IA ofrecen resultados más precisos y relevantes mediante algoritmos avanzados, superando a los métodos tradicionales. Estas herramientas representan avances significativos en la optimización del manejo de información en la era digital.

Herramientas de acceso a la información		
Objetivo	**Metodología**	**Contribución**
Analizar	Metodologia	Investigación
Chatbox basado en AI	Motor de búsqueda	Conocimiento
Información	Manejo de información	Ética
Búsqueda, proceso y divulgación de información	Análisis crítico	

Inteligencia artificial, Gestión de información, Motores de búsqueda

Introduction

In this fourth chapter, the reader is introduced to a set of artificial intelligence (AI)-based tools designed to optimise the search, processing and dissemination of information. Through the use of chatbots, specialised AI search engines and advanced knowledge mapping platforms, it explores how these technologies can be effectively applied to information management.

In today's digital age, information is an invaluable resource whose volume is growing exponentially. However, the abundance of data poses significant challenges in terms of locating, processing and disseminating relevant and reliable information. In this sense, AI stands out as a crucial tool that allows the optimisation of these processes, facilitating access to structured and relevant knowledge.

Section 1: Knowledge Maps

The first section of this chapter delves into knowledge mapping, an advanced technique that, through the use of artificial intelligence, allows the organisation and visualisation of large volumes of information. This tool is essential for identifying relationships between concepts, authors, and trends in specific areas of knowledge. Here, we explain how knowledge maps can be generated and used to obtain a comprehensive view of a topic, allowing researchers and practitioners to quickly identify key areas and gaps in the literature. In addition, the importance of these maps in developing research strategies and making informed decisions is discussed.

Section 2: Chatbots

In the second section, chatbots are explored as AI-based interaction tools designed to facilitate immediate communication and access to information. Chatbots have evolved to be sophisticated virtual assistants that not only respond to queries, but can also learn and adapt to the user's needs. This section of the chapter details how chatbots can be integrated into different platforms to assist in finding information, perform automated tasks, and offer personalised support. It also addresses the ethical and privacy considerations that arise with the use of these technologies, as well as the technical challenges that still need to be overcome.

Section 3: AI Search Engines and Information Processing

The third and final section focuses on AI-based search engines and their role in information processing. These search engines go beyond traditional techniques, employing advanced algorithms that allow for greater precision and relevance in the results obtained. Here we describe how these engines can analyse and process large amounts of data in real time, classifying information according to its importance and reliability. In addition, the ability of these engines to learn from user interactions, continuously improving their performance, is discussed. This section also provides a comparison between traditional and AI-powered search engines, highlighting the advantages that artificial intelligence brings to the information management process. Overall, this chapter provides a detailed and practical overview of how artificial intelligence tools are transforming the way we access, process and disseminate knowledge in the digital age.

Knowledge mapping

Generating knowledge maps by interacting with artificial intelligence is an extremely useful tool for analysing a specific topic in an integrative case, as it allows to efficiently identify and visualise the most relevant and impactful articles related to that topic. These knowledge maps are created from dynamic matrices that are linked to search engines, reference managers, chatbots and the collection of data from various information sources.

The ability of artificial intelligence to analyse large amounts of information and extract key points in an automated way is fundamental in the generation of knowledge maps. By using a data collection matrix that incorporates tools such as subject-specific search engines, reference managers to access relevant literature, chatbots to answer queries, and the integration of data from various sources, a deep and comprehensive view of the topic at hand can be obtained.

This approach not only facilitates the identification of the most relevant and high-impact articles, but also makes it possible to establish connections between different sources of information, detect emerging trends, and provide a more accurate and objective assessment of the topic under analysis. Knowledge maps generated through artificial intelligence are a valuable tool for students, researchers, academics and practitioners seeking to delve deeper into a specific topic in an effective and efficient way.

In this chapter, we will explore various AI tools that enable students to:

- Search for information efficiently and accurately.
- Process complex data and extract valuable insights.
- Communicate and share information in a clear and engaging way.

AI platforms for mapping knowledge

Research tools that help to explore and visualise connections between research papers with maps.

a) Reseach Rabbit https://www.researchrabbit.ai/
b) Open Knowledge Maps https://openknowledgemaps.org/
c) Connected Papers https://www.connectedpapers.com/
d) Litmaps https://w tmaps.com/ww.li

Illustrated guide to mapping knowledge from AI tools

Step 1.

Box 1
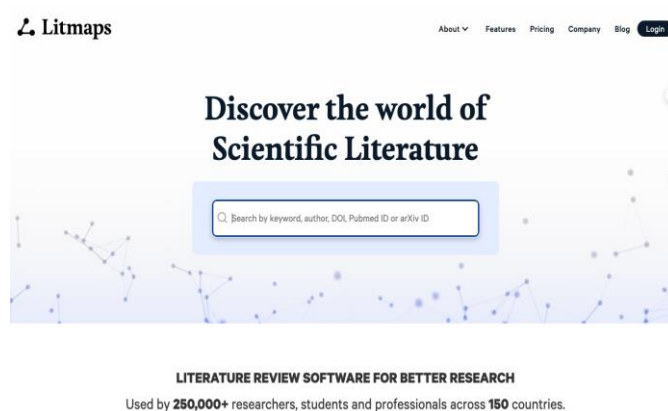
Figure 1

Registration for platform use

Source: [litmaps, 2024]

Box 2
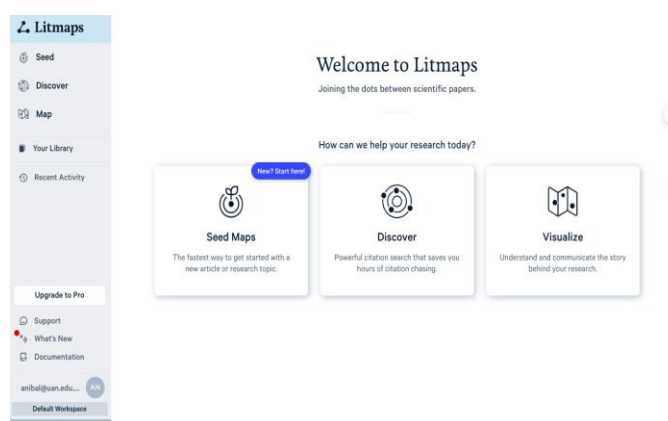
Figure 2

Document tracing

Source: [litmaps, 2024]

Note: Searching for a document is possible with the Discover option (refers to searching from a need) or by making use of the Seed Maps option (using a document as a seed).

Box 3
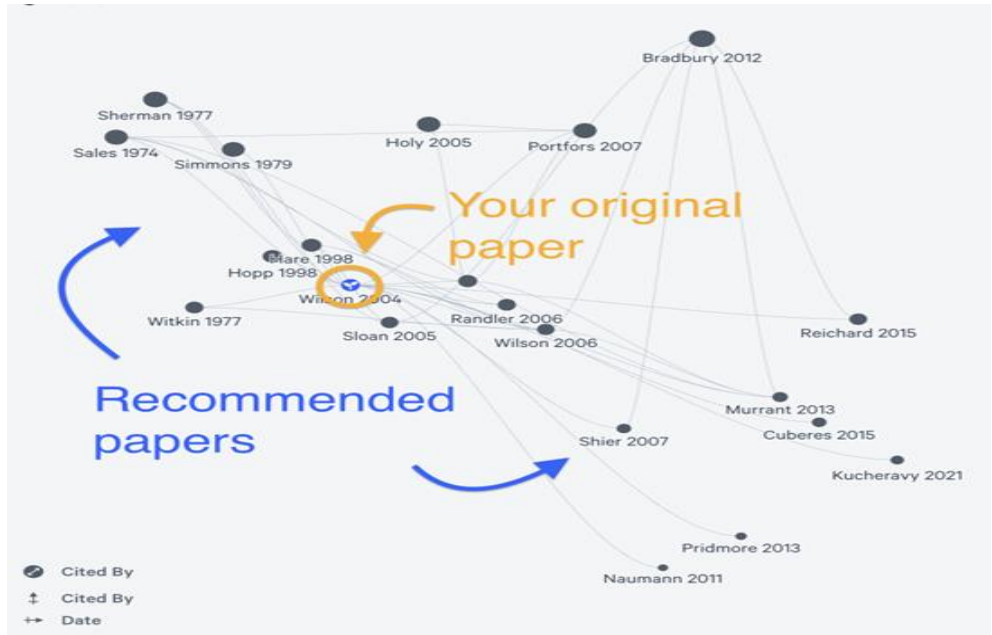
Figure 3

Map of knowledge generated from selected document

Source: [litmaps, 2024]

Activity 1						
Use of AI platforms for knowledge map generation.						
Instructions:						
Use AI to generate knowledge maps on the topic chosen for the integrative case. Search for the 5 impact articles from the knowledge map by AI, making use of the following: Information Source Data Collection Matrix.						
Title of the document:						
Source type:						
Author(s) and year	**Key words**	**Purpose, Hypothesis or Objective of the study** (between 60 and 90 words - textual)	**Methodology** (between 60 and 90 words -textual)	**Result** (between 60 and 90 words -textual)	**Impact** (No. Citation)	**Paraphrase of the content of the article** (between 60 and 90 words -textual)
1.						
2.						
3.						
4.						
5.						

Defining the research problema

Artificial intelligence (AI) has become an invaluable tool for addressing diverse issues in multiple domains. In the context of the integrative case, the strategic use of a chatbot as an assistant can be fundamental to effectively determine and explore the problem to be addressed.

Prompts strategy

The prompts strategy focuses on guiding the AI assistant through specific questions and requests, with the objective of extracting relevant information and facilitating the problem analysis process. This involves asking questions that allow the chatbot to understand the context, identify key factors, and generate ideas and possible solutions.

Some key guidelines to consider in the prompt strategy include:

1. Clear problem definition: asking the chatbot to summarise the issue at hand in a concise and precise manner, identifying the core elements.
2. Background analysis: Asking the assistant to research and gather background and contextual information on the issue in order to gain a deeper understanding.
3. Identification of key factors: Guide the chatbot to highlight the most relevant factors influencing the issue, such as social, economic, technological or regulatory aspects.
4. Idea generation: Ask the attendee to propose approaches and potential solutions, considering different perspectives and scenarios.
5. Evaluation and recommendations: Asking the chatbot to evaluate the alternatives raised and formulate strategic recommendations to effectively address the issue.

Steps:

Problem definition:

a. Identify an issue for the integrative case for the purpose of applying the prompts strategy.
b. Clearly delimit the problem to be addressed within the integrative case.
c. Establish specific and measurable objectives for the identification of the issue.

Research and information gathering:

a. Gather relevant information about the integrating case, including the context, background, objectives and challenges.
b. Identify the different actors involved in the integrating case.
c. Analyse the possible causes and consequences of the problem.

Selecting the right chatbot:

a. Evaluate the characteristics and functionalities of different AI-based chatbots.
b. Select a chatbot that is compatible with the type of information that needs to be processed and with the objectives of the prompts strategy.
c. Consider aspects such as the ability to understand natural language, the generation of coherent responses and adaptability to different contexts.

Development of the prompts strategy:

a. Design a series of prompts to guide the chatbot in identifying the problem.
b. Prompts should be clear, concise and specific, and adapted to the language and style of the selected chatbot.
c. Consider different types of prompts, such as open-ended questions, closed-ended questions, information requests and specific tasks.

Implementation of the prompts strategy:

a. Interact with the chatbot using the pre-designed prompts.
b. Monitor the chatbot's responses and make adjustments to the prompting strategy as needed.

c.   Collect and analyse the information obtained from the chatbot to effectively identify the issue.

Evaluation and improvement:

a.   Evaluate the effectiveness of the prompts strategy in identifying the issue in the integrative case.
b.   Identify areas for improvement in the prompts strategy and in the interaction with the chatbot.
c.   Implement the identified improvements to optimise the prompts strategy and obtain more accurate results.

Reflection

The strategic use of a chatbot as an assistant can be a valuable tool in the process of determining and analysing the problem of the integrating case. Through a careful prompting strategy, the chatbot can be guided to obtain relevant information, identify key factors and generate valuable insights and solutions. This approach can contribute significantly to the development of an in-depth and informed analysis of the issue at hand.

Box 4
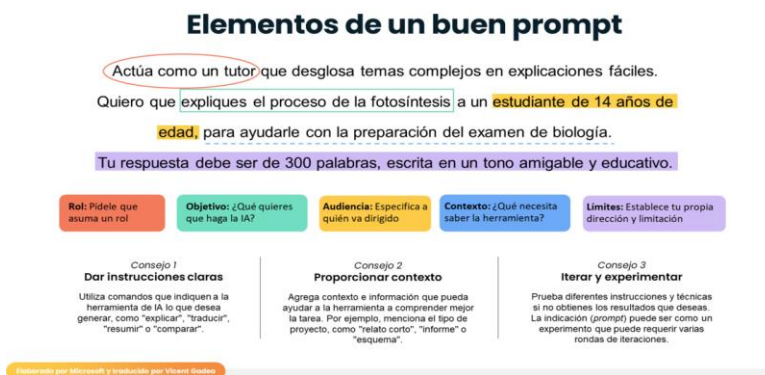
Figure 4

Basic anatomy of a prompt

Source: [vicentgadea, 2024].

1.   Chatbots

Chatbots are computer programmes that simulate conversations with human users through text or voice interfaces. Implemented with AI, chatbots can provide personalised assistance, answer questions, solve problems and offer recommendations.

ChatGPT

(ChatGPT is a language model developed by OpenAI, based on the GPT-3.5 architecture. It is an enhanced version of the GPT-3 (Generative Pre-trained Transformer 3) model that has been trained on a wide variety of text data to understand and generate natural language.

Box 5
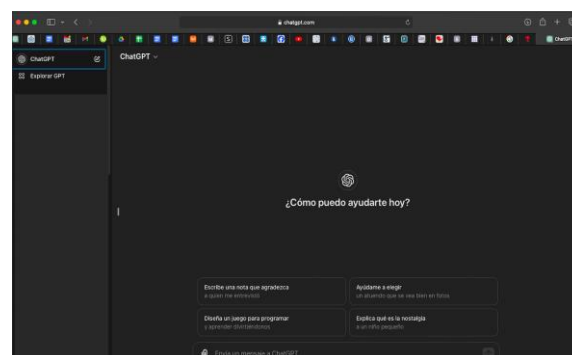
Figure 5

Dialogue interface with ChatGPT

Source: [Chatgpt, 2024]

ChatGPT is designed specifically for text generation tasks in the form of conversations or dialogues. It can receive a series of messages as input and produce a coherent and relevant response based on those messages. The model has been trained with a huge amount of data from the internet, including books, articles, web pages and other publicly available sources of information. This allows it to have knowledge about various topics and provide answers based on that knowledge.

ChatGPT has proven useful in a wide range of applications, such as virtual assistants, chatbots, customer support, interactive tutorials, generating answers to frequently asked questions and more. However, it is important to keep in mind that ChatGPT is an artificial intelligence and its answers are limited to the information it has been trained with, so it may have errors or generate incorrect answers in some cases (OpenAI, 2023).

Gemini

Gemini, formerly Bard, is a large language model (LLM) chatbot developed by Google AI. It is trained on a massive dataset of text and code, and can generate text, translate languages, write different types of creative content and answer your questions in an informative way (Google AI, 2023).

Box 6

Figure 6

Dialogue interface with Gemini

Source: [gemini.google, 2024]

Cloud

Claude is an artificial intelligence assistant created by Anthropic. He has a broad knowledge base that allows him to help with all kinds of tasks such as writing, analysis, answering questions, mathematics, programming and more. It is direct and objective in its answers, but can also give detailed explanations if needed. He aims to be as helpful as possible to the humans interacting with him. They can ask him about anything and he will do his best to help them. He does not hesitate to admit when he does not know

Box 7
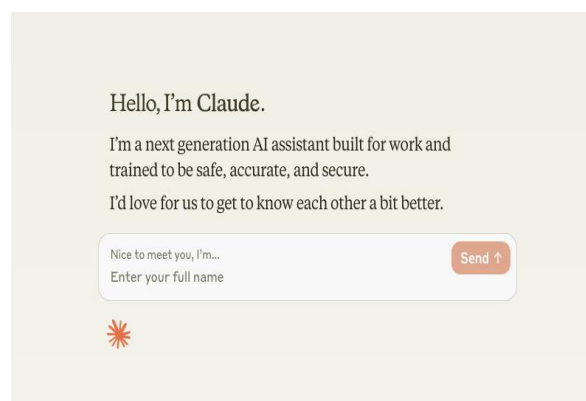
Figure 7

Dialogue interface with Cloude

Copilot

Microsoft Copilot is a chatbot based on the GPT-4 AI language model. It can understand and communicate fluently in the language of your choice. It also has the ability to generate imaginative and innovative content.

Box 8

Figure 8

Dialogue interface with Copilot

Activity 2. Using prompt instructions to develop a conversation with an AI
Instructions:
Following the steps mentioned in the Prompts Strategy section, you will need to make use of AI with some chatbot. The activity will be to build a problem for the integrative case exercise.

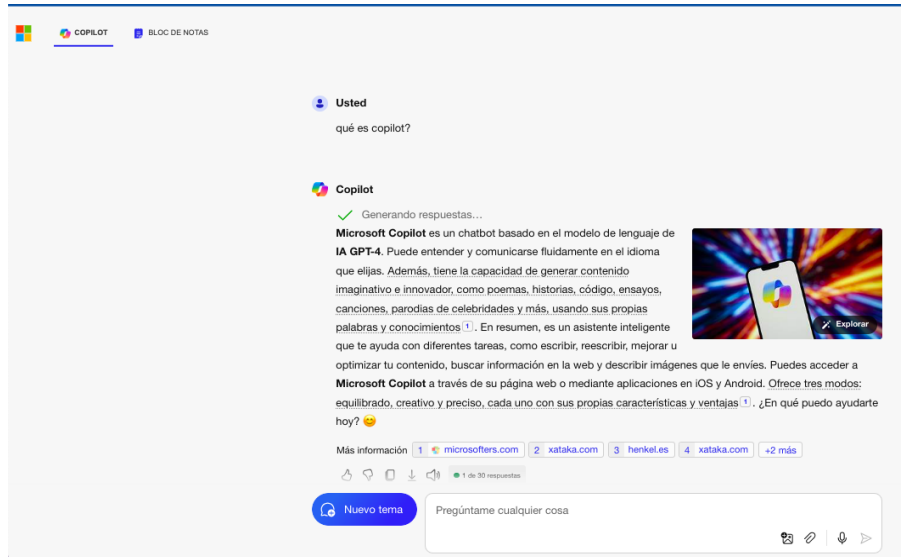| Example:	
Independent variable	Dependent variable
Mindfulness	Academic performance

Question: How does the use of the Mindfulness technique influence the academic performance of young people in higher education?	

Activity	
Independent variable	Dependent variable

Approach:

2. AI Search Engines and Information Processing

SciSpace

SciSpace is a research platform that helps researchers find, read, understand and share research papers.

- **Search:** SciSpace's search engine works with Google Scholar, so you can be sure to find the latest and most relevant research papers.
- **AI Assistant:** SciSpace's AI Assistant can help you understand complex research papers by providing abstracts, explanations and citations.
- **Collaboration:** SciSpace's collaborative workspace allows you to share documents with colleagues and discuss them in real time.

- **Publishing:** SciSpace's publishing platform allows you to submit your articles to academic journals and preprint servers (Scispace, 2023).

Box 9
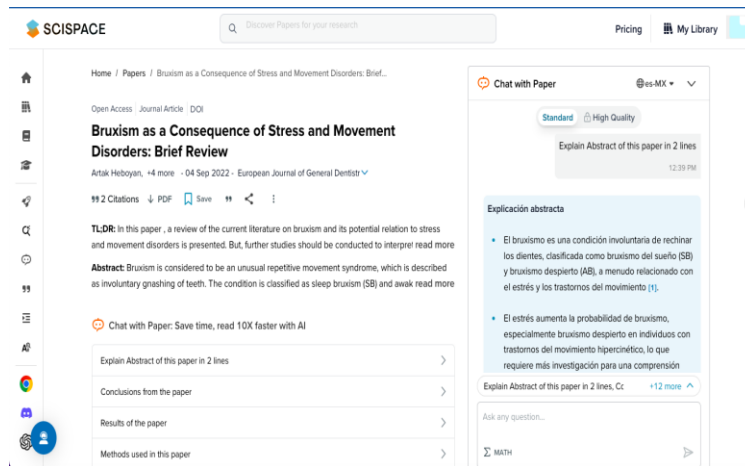
Figure 9

Information search and processing with IA

Illustrated guide to searching and processing information with IA

Step 1.

Box 10

Figure 10

Search by terms or question on desired topic in SCISPACE

Step 2.

Box 11

Figure 11

List of search results

Step 3.

Box 12

Figure 12

Conversation with IA in selected document

Consensus

Consensus is a search engine that uses AI to find answers in scientific research. It can help you to:

- Search: the Consensus search engine works with Google Scholar, so you can be sure to find the most recent and relevant research papers.
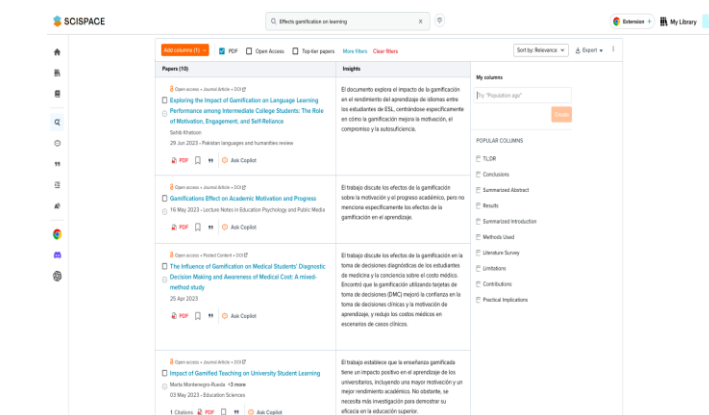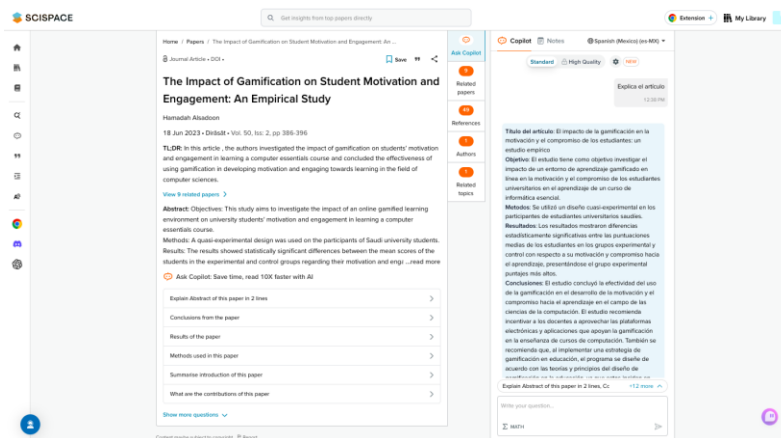- AI Assistant: Consensus' AI assistant can help you understand complex research papers by providing summaries, explanations and citations.
- Writing: Consensus can help you write better research papers by providing feedback on your writing style, suggesting citations and generating outlines.
- Collaboration: it allows you to collaborate with other researchers on research projects by sharing documents, comments and annotations (Consensus, 2023).

Box 13
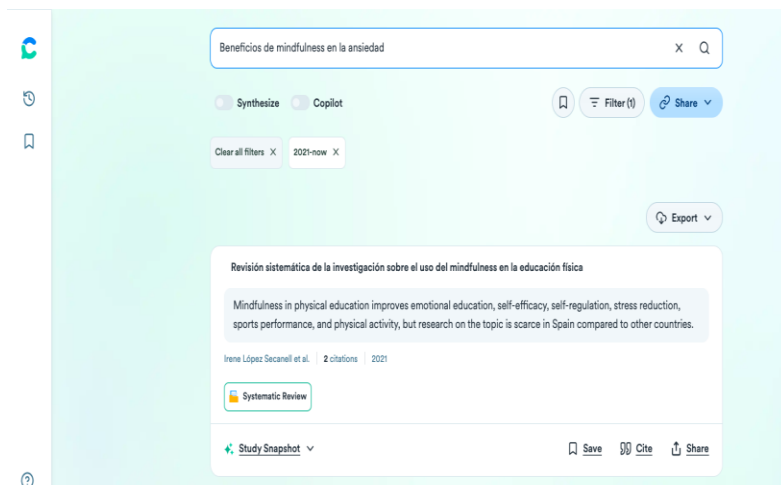
Figure 13

Consensus platform search engine

Humata

Humata is a platform that uses AI to help you understand and analyse your research papers:

- **Search:** Humata's search engine works with Google Scholar, so you can be sure to find the most recent and relevant research papers.
- **AI Assistant:** Humata's AI assistant can help you understand complex research papers by providing summaries, explanations and citations.
- **Analysis:** can help you analyse your articles by tracking your citations, identifying trends in your research, and generating visualisations of your data.

-   **Writing:** can help you write better articles by providing feedback on your writing style, suggesting citations and generating outlines (Humata, 2013).

Box 14
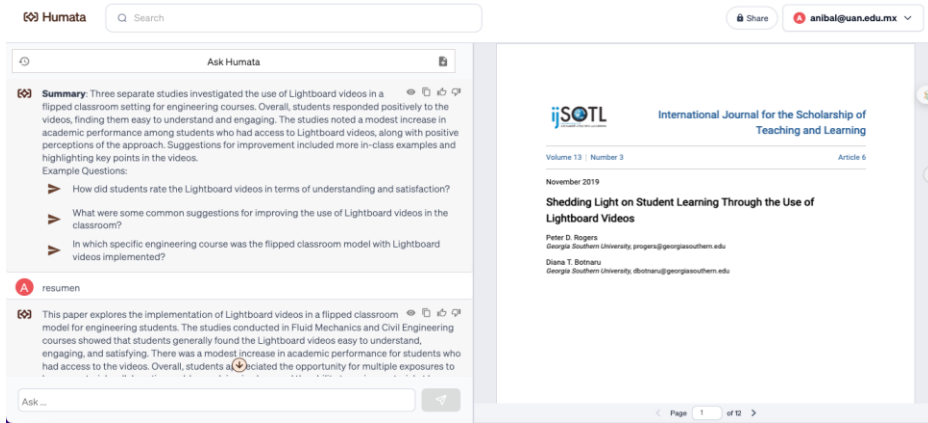
Figure 14

Humata platform interface

Activity 3
Instructions:
Find 6 articles and at least 2 books that contribute to the final paper (integrative case). Use the following Sci-space chatbots https://typeset.io/ or https://app.humata.ai/ to decompose articles and feed in matrix below
Title of the document:
Reference in APA Style 7th edition:
Source type:

Author (s) and year		Key words	Purpose, Hypothesis or Objective of the study (between 60 and 90 words -textual)	Methodology (between 60 and 90 words -textual)	Result (between 60 and 90 words -textual)	Impact (No. Citation)	Paraphrase of the content of the article (between 60 and 90 words -textual)
1.							
2.							
3.							
4.							
5.							
6.							

Data for books		
Topic or keyword:		
Author(s) and year		Description of the source	Paraphrase of source content (between 60 and 90 words)
1.			
2.			
APA Style Reference 7:		

Conclusions

The main conclusions of the research highlight the profound transformation that artificial intelligence-based tools are bringing about in scientific information management. First, knowledge maps emerge as indispensable instruments for organising and visualising complex data, allowing for a more precise identification of patterns, relationships and gaps in the literature. Second, chatbots stand out as virtual assistants that not only improve interaction and access to information, but also pose ethical and technical challenges that must be addressed to ensure their responsible use. Finally, AI-powered search engines offer a significant improvement in the accuracy and relevance of results, overcoming the limitations of traditional methods.

Together, these technologies represent a strategic move towards more efficient, collaborative and ethical information management, making a substantial contribution to the advancement of universal knowledge in the digital age.

References

Antecedents

Connected Papers. (s. f.). Home.

Open Knowledge Maps. (s. f.). *Home*.

Basics

OpenAI. (2024). ChatGPT (modelo GPT-4) [Modelo de lenguaje]. OpenAI.

OpenAI. (2024). *ChatGPT* (modelo GPT-4) [Modelo de lenguaje]. SciSpace.

OpenAI. (2024). *ChatGPT* (modelo GPT-4) [Modelo de lenguaje]. Microsoft Copilot.

OpenAI. (2023, julio 3). *Qué es ChatGPT* [Respuesta a una pregunta de usuario]. ChatGPT.

Support

Consensus. (2023, julio 03). *About Consensus*. Consensus.

Claude (Asistente de Inteligencia Artificial) (2023). *Descripción de Claude* [Transcripción de conversación].
Anthropic.

Differences

Google AI. (2023). What is Bard?. Bard.

Humata. (2023, julio 03). *About Humata*. Humata.

Litmaps. (2024). *How to use litmaps*.

Discussions

Research Rabbit. (s. f.). *Home*.

Scispace (2023, julio 03). *About SciSpace*. SciSpace.

Vicentgadea. (2024, mayo 16). *Cómo crear prompts efectivos para la IA: Una guía completa*. vicentgadea.

Chapter V: Valuation of the Information

Capítulo V: Valoración de la Información

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CONAHCYT classification:

Área: Humanities and Behavioral Sciences
Field:Pedagogy
Discipline:Educational theory and methods
Subdiscipline: Other

Key A-Books

The student is provided with tools to critically evaluate under clearly defined criteria the quality of the information obtained from the different information sources to which he/she resorts to satisfy his/her need for information. The clarity of the need for information; the research in different sources of information, which should not be limited to a single resource; as well as the evaluation of the same, applying criteria that allow us to determine its reliability and quality. In order for a student to be able to communicate the findings obtained in the satisfaction of his need for information (valid knowledge); it is necessary that he has the competencies that provide him with the ability to access reliable and quality sources, evaluate them critically in such a way that he obtains new information and generates new knowledge.
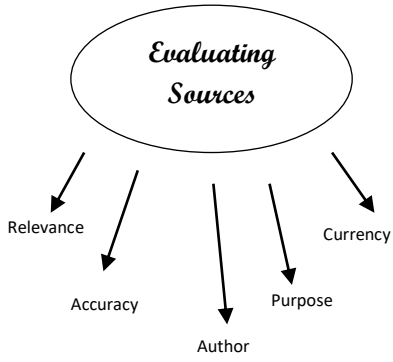
Abstract

Chapter V of the *Technologies of Communication and Information Management* workbook is used by the academics of the Basic University Core program at the Autonomous University of Nayarit (Universidad Autónoma de Nayarit). The objective of this chapter is for students to critically evaluate the information obtained from different sources. Determine which information is useful and which is not, which implies knowing and applying criteria that allow them to reach informed conclusions. Evaluate the relevance, reliability, accuracy and objectivity, ensuring that they work on the basis of quality information that will lead to the generation of useful and solid knowledge, providing them with the ability to make informed decisions.

Evaluation of the Information		
Objectives	Methodology	Contribution
Information evaluation *make informed decisions*	Evaluating Sources Relevance · Accuracy · Author · Purpose · Currency	*The student will be able to draw well-founded conclusions and make decisions based on the information.*

Evaluation of information, evaluation criteria, quality of information, reliability of information.

Resumen

El *Capítulo V* del libro de trabajo de *Tecnologías de la Comunicación y Gestión de la Información* es utilizado por el cuerpo académico del programa del Tronco Básico Universitario en la Universidad Autónoma de Nayarit. Este capítulo tiene por objetivo que los estudiantes valoren críticamente la información que se obtiene de diversas fuentes. Determinen cuál es información útil de la que no es, lo que implica conocer y aplicar criterios que permitan llegar a conclusiones informadas. Evalúen la relevancia, fiabilidad, precisión y objetividad, asegurando que se trabaje sobre la base de información de calidad que llevará a la generación de conocimiento útil y sólido, dotándoles de la capacidad de tomar decisiones fundamentadas.

Valoración de la información		
Objetivos	Metodología	Contribución
Evaluación de la información *Toma de decisiones informadas*	Evaluación de información Relevancia · Objetividad · Autoría · Propósito · Actualidad	*Conclusiones sólidas y toma de decisiones sobre la base de la información.*

Evaluación de la información, Criterios de evaluación, calidad de la información, confiabilidad de la información

Introduction

Chapter III deals with the evaluation of information managed in databases, academic search engines, web pages and other sources, in order to ascertain its quality and reliability. Criteria will be applied to determine the relevance, reliability, accuracy and objectivity of the sources, in order to have a solid basis for generating useful knowledge applicable to any context.

Firstly, the concept of value and reliability of sources is addressed, followed by the evaluation criteria applicable to books, articles, news, websites, among others. Finally, an information evaluation log is presented, for the verification of information and analysis of biases.

Value and reliability of sources

When conducting research, it is important to be aware of the value and reliability of information sources.

- Value refers to how relevant a source of information may be.
- Reliability refers to how much we can believe the information found.

Value is relative to the subject matter. For example, if someone is doing historical research they are likely to be interested in retrospective sources that are topical, but someone else with a different research topic may not find them valuable.

Reliability is becoming increasingly relevant because communicating and publishing information is now available to anyone, regardless of their level of knowledge or ethics.

There are several criteria for considering the value and reliability of sources, such as:
Currency (date of publication).

Objectivity. This refers to information that is not biased, loaded with the author's biases or judgements to persuade the reader.

Character of the information. Whether they are primary or secondary sources.

The authority on the subject. Example: what a recognised researcher says on the subject of the economy in Mexico is not of the same value as what the first person interviewed on the street who has minimal information on the subject says.

The publishing house or organisation that publishes. There are publications that are widely recognised for the seriousness of their work. There are journals that have an editorial board (a group of experts of recognised standing) that reviews the quality and endorsement of what is published.

Examples of reliable and unreliable sources

Information	Reliable source	Unreliable source	Criterion not met
A book about swimming .	Olympic medal-winning swimmer .	A person who does not play the sport .	You have no authority on the subject you are talking about.

The decision to look at one source or the other depends primarily on our need for information.

Information evaluation criteria

Information evaluation criteria are those that focus on user satisfaction, analysis and assessment of the content provided in the environment *(Pinto, 2012)*.

How to evaluate the information found?

Once the information sources and resources have been consulted, it is necessary to analyse and evaluate them.

General criteria to take into account:

Criterio	Questions
Author	Are you a specialist in the field? Do you belong to an academic or research institution? What is the reputation of the publisher of the book or journal?
Objectivity	Does it contain accurate information? Does it contain reasoned and substantiated conclusions? Is it information that manipulates opinions? Does it indicate the sources of information used and are they well cited?
News	What is the date of the article or book we are consulting? Is the data contained therein up to date?

By type of resources:

Books

In order to evaluate a book, the following criteria need to be taken into account:

- The purpose: Why was the book written?
- The publisher: Who publishes the book?
- The organisation and content: Does the content of the book provide the information you need?

Is there additional material such as appendices?

- The date of publication: Some topics such as health require up-to-date information. For other topics such as geology, you should assess both past and current information. It is important to know what dates the information is written for the use you need to make of it in your topic.

- The authority, /the author: Is the author an expert in the field? Where is the author employed? What else has he/she written? Has he/she won any awards?

- The bibliography: Academic papers always contain a bibliography of the sources consulted. References are sufficient and appropriate to the content.

- Validity: Is the book important to your ongoing research project? Ask yourself whether the book is useful to you?

- Coverage: Does the book cover the topic fully, partially or generally?

- Audience: What type of reader is the author writing for? Is the level of the book appropriate to your needs? Who is the book aimed at?

- Illustrations Does the book present diagrams, graphs, maps, photographs, etc. to illustrate concepts? Are these illustrations relevant? Are they presented in a clear and professional manner?

Activity 1	
Evaluation Criteria: Book	
Instructions:	
To consult and evaluate a book, perform the following activity: Consult the Magna Library's Koha online catalogue at the following link: www.koha.uan.mx Search for two books, which are listed below. Then answer the following questions.	
Title of the book:	
"The Labyrinth of Solitude".	
Does the book seek to inform about?	
Who are the perpetrators?	
Which publisher publishes it?	
Do you have ISBN registration?	
What is the year of publication?	

Title of the book: "Nayarit: Protagonists of Education".	
Does the book seek to inform about?	
Who are the perpetrators?	
Which publisher publishes it?	
Do you have ISBN registration?	
How many pages does it have?	
What is the year of publication?	

Journals

Journals must meet certain minimum quality requirements. To compare and evaluate the importance of a given journal with respect to others in the same scientific field, we must take into account the Impact Factor (IF), among other criteria.

The Impact Factor (IF) measures the influence, importance and level of research appearing in indexed scientific journals. The IF is calculated according to the number of times an article is cited in the bibliographic references of other authors, which means that the more times the articles have been cited in relation to the total number of documents published, the higher the IF contributed by the author(s) to the journal.

In the evaluation of scientific performance, journals with a high IF are usually rewarded. The higher the impact, the higher the quality of the publication. The higher the quality, the greater the visibility of the publication and the greater the competition for publication in the journal.

To evaluate an article in an academic journal consider the following criteria:

Reputation: is the article published in a journal that is respected in the field of study? Is the journal recognised by the academic community?

Indexing: Is the journal indexed in relevant databases in the field of study? Is it included in impact indexes such as JCR or SJR?

Purpose: Why did you write the article? Are you seeking to persuade the reader to do something?

Reliability and timeliness: Does the article have a solid base of bibliographical references, are they correctly cited and referenced?

Organisation: Is the material organised and focused, and is the argument or presentation comprehensible?

Utility: Is the article relevant to the current research project?

Authority: Is the author an expert in the field? Where does the author work? What else has the author written? Has the author won awards or recognition?

Coverage: Does the article cover the topic comprehensively, partially, or is it a general overview?

Audience: What type of reader is the author writing for, does it relate to the type of journal?

Illustrations: Are tables, graphs, maps, photographs, etc. used to illustrate concepts? Are the illustrations relevant? Are they clear and professional looking?

Activity 2 Evaluation Criteria: Journal	
Instructions: To consult and evaluate a Journal, perform the following activity: **Consult the following links:** https://quo.eldiario.es https://www.revistas.unam.mx/index.php/inter/issue/view/6217 Evaluate the two Journals (Outreach and Scientific). Afterwards, answer the following questions.	
Name of the Journal: INTER DISCIPLINA Journal	
Which publisher or educational institution publishes it?	
What is the ISSN of the journal?	
What type of journal is it (popular or scientific)?	
What indexing does it have?	
Choose an article from the journal and write the title.	
Write the author's name	
Write the date of publication	
How many pages the article has	
What is the structure of the abstract?	

Name of the Journal: QUO Magazine	
Which publisher or educational institution publishes it?	
What is the ISSN of the journal?	
What type of journal is it (popular or scientific)?	
What indexing does it have?	
Choose an article from the journal and write the title.	
Write the author's name	
Write the date of publication	
How many pages the article has	

News

The following criteria should be taken into account when evaluating a news item:

Structure: The news item has: epigraph, headline, lead and body of the news item. Does the text correspond to the format (structure) of the news item? Does the epigraph contribute to contextualise the title?

Does the title reflect the most important part of the text? Does the lead have a piece of information that is then developed in the text? Do the epigraph, title and lead have different information? Can the body be understood without reading the lead or the headline? Does the lead have the most important pieces of information? Is the information hierarchised according to importance?

Truthfulness: The event that led to the news item was carried out in the best possible conditions. Is the news item covered by other media?

Objectivity: Does the journalist provide only objective data or information? Is there bias (politics or position)? Does the text respond to the concept of news? Does the information correspond to the newspaper's own guidelines? Does the text have its own direct source or interview? Is the direct source well quoted? Is the testimony of the direct source well quoted? Does the direct source provide relevant or different information to what is already reported in the text? Does the text have an indirect source? Is the indirect source well quoted?

Brevity: The news item answers what happened, where it happened, to whom it happened, how it happened and why it happened.

Clarity: Is the text written without spelling mistakes? Is the text well written? Does the text use formal language? Are the comments made respectful?

Novelty: Does the article have any newsworthy elements?

Social Interest: Is the information of interest?

Information on the Internet

The following criteria should be taken into account when assessing information on the Internet:

Authorship: Is the person or organisation responsible for the content of the website? Can it be identified? Is there a logo that identifies the institution? Is there biographical information (brief information on their academic or professional curriculum)? Is there an email address to contact or verify the legitimacy of the person responsible? What details of the URL are visible? E.g. type of domain (e.g. edu, org, com, etc.) Is there a mission statement about the content?

Updating: Does the date of creation of the website appear? Is updating of information indicated? Is there evidence that there is maintenance of the site and updating of resources? Are there many broken links? Is the content educational, commercial, informative, etc.?

Accessibility: Is the design compatible with different browsers or screen resolutions? Does it comply with the WAI (Web Accessibility Initiative: recommendations for making Web content accessible)? Portal for the use of bibliographic resources for people with disabilities: Is there help for the user on the structure of the contents and navigation of the site?

Content: Is the information objective and is the information on the site rigorous (supported by bibliographic citations, correctly formulated, free of grammatical errors, etc.)? Are links to other sources included to verify the information? What is the focus of the resource (informative, academic, etc.)? Does it meet the stated aims and purposes of the content creator, and do the links it contains lead to relevant or interesting sites in terms of quality and relevance to the topic, or are they distracting?

Functionality Does it contain a site map that hierarchises and organises the contents of the site and are the links active? Does it have an internal search system? Does the site have a logical and simple structure?

Design: What type of information does it contain (textual, visual, audio)? Does the image or files contained slow down the loading and navigation of the website? Does it need additional software to read, print or listen to the resources it contains? Does the information display well in any browser? Is there a text-only option? Do the pages of the website have a homogeneous style or format?

Navigability Is it possible to access the content menu from any page within the website? Do the navigation buttons allow you to navigate through the site logically? Does it contain interactive components?

Information Evaluation Log

The Information Evaluation Log allows you to reflect on each of the criteria to be taken into account when evaluating an information source and helps you to integrate them when making a judgement.

Information Evaluation Log

Question: What are the conditions that the North Atlantic Basin must have in terms of atmospheric temperature, winds and latitude for tropical cyclones to form there?		Source address 1 www.cfe.gob.mx/es/LaEmpresa/ meteorological/phenmeteriological/cyclone-tropicals
Characteristics of the publishing website	Who publishes the Website (Institution, entity or person behind the Website).	The Federal Electricity Commission of Mexico (CFE).
	What is the purpose of the website (to inform, to sell, etc.)?	Provide information about the company and its services. To provide online services to its customers. Provide information on basic concepts related to electricity, meteorology, environment, among others.
	Who is the target audience for the website?	To customers of the CFE and all those interested in learning about the topics they offer.
	Does it have advertising, and is the advertising separated from the content?	No advertising
Information about the author of the content	Who is the author of the content?	It is not explained
	What are your credits? Are you qualified to give the information you are giving?	It is not explained
Characteristics of the contents	Does the content provide clear and complete information to meet your need for it?	It lists the conditions that must be in place for Tropical Cyclones to develop. However, they are not explained in depth.
	Is the information factual or analytical?	Factual
	Is the information objective or subjective?	Objective
	When was the content published, and is it current and up to date?	Last updated on 3 May 2010.
	Are other sources properly cited and copyright respected (both images and content)?	No other sources are cited. No explanatory pictures.
Reliability and relevance	According to the data collected on sources, are their contents reliable?	Yes, because the entity that publishes them is serious and its purpose is to provide information to its customers. Although no author is cited, the information is factual and is therefore the same as that specified in other sources dealing with the same subject.
	According to the data collected on the source, is the information useful for solving your question?	Yes, it is useful, but it must be complemented by information from other sources.

Source: Eduteka (2008). Evaluation of information sources. Gavilán Model

Activity 3
Information evaluation log

Activity 4
Evaluation of web-based information sources

Instructions:
Given the example above, research and answer the questions in the "Information Evaluation Log".

Below is the table for analysis and evaluation of these information sources.

Search some of the following websites: Google Scholar, Dialnet and Redalyc.

Question:

How does stress influence academic performance in higher education students?

		Address Source 1	**Address Source 2**
Characteristics of the publishing website	Who publishes the website (Institution, entity or person behind the website)?		
	What is the purpose of the website (to inform, to sell, etc.)?		
	Who is the target audience for the website?		
	Does it have advertising? Is the advertising separated from the content?		
Information about the author of the content	Who is the author of the content?		
	Write three publications the author has made?		
Characteristics of the contents	Does the content provide clear and complete information to meet your information needs?		
	Is the information factual or analytical?		
	Is the information objective?		
	On what date was the content published?		
	Are other sources correctly cited and are other sources respected? Copyright (of images and content) are respected.		
Reliability and relevance of sources	According to the data collected on sources, are their contents reliable?		
	According to the data collected on the source, is the information useful for solving your question?		

Source: Adapted from Eduteka (2008). Evaluation of information sources. Gavilán Model.

Instructions:
According to the topic of your case study (final paper), answer the questions in the following table "Evaluation of web-based information sources", to rate whether the website contains useful information that will help you in writing your case study.

Website:

	Yes /No	Comment
Is the Website owned by a government entity, a commercial organisation, educational institution, a non-profit entity, or an individual author? If so, what is its general information?		
What is the purpose of the website (to inform, to sell, etc.)?		
What type of audience is the website aimed at?		
Is it possible to contact the organisation by telephone number, postal address, or e-mail address?		
Is it possible to contact the organisation by telephone number, postal address, or e-mail address?		
What country does the website belong to, and is it easy to identify its origin (check the domain)? .mx for Mexico; .cr for Costa Rica; .co for Colombia; .es for Spain; .ar for Argentina, etc.).		
After analysing the above data, do you consider that this website is supported, has no commercial interests, and can provide reliable information that matches what you are looking for in your research?		
Information about the author of the content :		
Is the author clearly identified on the page? At least the author's full name and a contact address such as e-mail address.		
Is information provided about the author's education, positions held, and current occupation?		
What qualifies you as knowledgeable enough to provide the information published on the website?		
You have the link Who are we? What information about the author can be found on the web?		
After analysing the above data, do you think this author is suitable to speak on the topic you are researching and to provide you with true and reliable information?		
Information on content:		
In what type of publication is the content presented (article, blog, book, news, interview, essay)?		
On what date was the content published? Are they current and valid?		
What is the purpose of the content (to inform, to sell, to persuade the reader about an idea)?		
Does the content provide useful information to meet your information needs?		
Is the content presented in a clear manner, free of grammatical, spelling and typographical errors?		
Are the images and content of the website intended to persuade you about political, social, religious or cultural interests that may bias the objectivity of the information?		
If graphs and tables containing information or data are presented, are they clearly labelled and easy to read?		
If the information published on the website comes from other sources, is it correctly cited?		
Do you provide additional resources and links relevant to the topic?		
Does the information contradict information found elsewhere?		
Are the contents linked from other pages? What kind of pages are they?		
After analysing the above data, do you believe that this content provides you with valid and reliable information to meet your research objectives?		

Methodology

In order to achieve the proposed objective, the student is led to carry out a critical and systematic analysis of the sources.

The criteria applicable to books, articles, news and digital media, among others, are reviewed and analysed. Verification logs and bias analysis are used in order to determine the quality and reliability of the source.

Results and Conclusions

The student will be able to reach solid conclusions and make decisions based on the information.

Declarations

Conflict of Interest

The authors declare that they have no conflicts of interest. They have no financial interests or personal relationships that could have influenced this book.

Authors' Contribution

Martínez-Castillo, Fabiola: Research and Chapter Development.
Arteaga-Medina, Rosalva: Research and Chapter Development.

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References

Antecedents

Callison, D. (2002). *La Valoración Autentica*

Committee on Developments in the Science of Learning & Committee on Learning Research and Educational Practice. (2000). *How People Learn; Brain, Mind, Experience and School.*

Colorado State University Libraries. (s.f.-b). *Research Guides: How to Do Library Research*: How to Evaluate Books. Recuperado 4 de julio de 2023

Colorado State University Libraries. (s.f.-c). *Research Guides: How to Do Library Research: How to Evaluate Journal Articles*.

Basics

Pinto, M. (11 de agosto de 2007). *Alfin: Alfabetizacion Informacional, recursos e ideas sobre cultura de la información y nuevas alfabetizaciones*.

Pinto, M. (2012). ALFIN-EEES. Alfabetización en Información para aprender a aprender en el Espacio Europeo de Ensenanza Superior.

Support

Eduteka (2008). *Evaluación de fuentes de información. Modelo Gavilán*.

Gonzalez, F., & Molano, B. (2008). *Modelos para resolver problemas de información*.

Discussions

Educarchile (2015). *¿Cómo escribir una noticia?*. Recuperado el 19 de octubre de 2015

Universidad de Alcala. (2011). *Criterios de Evaluación de Información*.

Universidad Nacional Autónoma de México. (2022). *Latindex—Sistema regional de información en línea para Revistas científicas de América Latina, el Caribe, España y Portugal*.

Chapter VI: Reference Managers

Capítulo VI: Gestores de Referencias

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CONAHCYT classification:

Area: IV Humanities and Behavioral Sciences
Field: Pedagogy
Discipline: Educational theory and methods
Subdiscipline: Other

Key A-Books

El sexto capítulo del libro de trabajo de la asignatura Tecnologías de la Comunicación y Gestión de la Información (TCGI) aborda temas para la correcta elaboración de trabajos académicos de calidad. Este material está diseñado para apoyar a los estudiantes del Tronco Básico Universitario (TBU) en la redacción de documentos científicos. El capítulo incluye herramientas, técnicas y estrategias para la administración eficiente de referencias y citaciones académicas, así como el uso de programas informáticos que facilitan la aplicación de distintos estilos de citación. Además, se proporciona orientación sobre la gestión de grandes volúmenes de información. Este trabajo es el resultado de la actualización en 2024 de la segunda edición del libro, originalmente publicada en 2016, elaborado por el cuerpo académico de Tecnologías de la Información (TGI) de la Universidad Autónoma de Nayarit (UAN). A través de grupos de trabajo, se documentan las novedades en los estilos de citación y referencia, incorporando las mejores prácticas en la administración de información y las actualizaciones de software gratuito para la gestión de referencias, accesible para estudiantes de educación media superior.

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Abstract

Chapter VI of the *Technologies of Communication and Information Management* workbook is used by the academics of the Basic University Core program at the Autonomous University of Nayarit (Universidad Autónoma de Nayarit). This chapter updates citation and referencing styles, presenting the correct use of each and the best practices for managing references through specialized software.
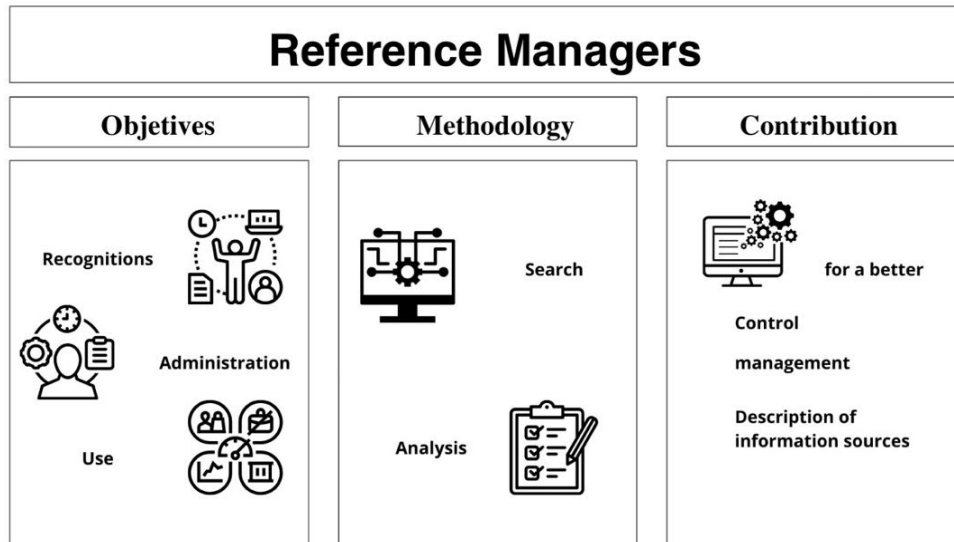
Reference managers, citation styles, scientific writing

Resumen

El *Capítulo VI* del libro de trabajo de *Tecnologías de la Comunicación y Gestión de la Información* es utilizado por el cuerpo académico del programa del Tronco Básico Universitario en la Universidad Autónoma de Nayarit. Este capítulo actualiza los estilos de citación y referencias académicas, presentando el uso adecuado de cada uno y las mejores prácticas para la gestión de referencias a través de software especializado.

Gestores de referencias, Estilos de citación, Redacción científica

Introduction

In Chapter VI, the reader will acquire skills in the use of personal bibliographic database managers to generate reference lists using different citation formats. Throughout their academic training, students often have to write texts, reports, projects or essays, for which they regularly make all kinds of consultations in different sources of information. In this constant search and analysis of the data provided in relation to the need for immediate information for the preparation and writing of a new document, you will have to decide both on the selection of the bibliography and the citation style to be used.

The bibliographical references will serve to describe the sources used in the new document and at the same time serve as a theoretical basis for the bibliographical foundation of the contributions of the works consulted. However, documentary material usually tends to grow in an uncontrolled way, so that the use of manual methods to collect, organise, store and access information becomes inefficient, so the use of technology facilitates the task of information retrieval.

Citations and bibliographic references

When writing academic texts, citations are added to the same researched and selected with the criteria of value and quality, the bibliography is a main element in any academic work, where all the references of the citations used in the body of the work are listed, in order to locate, identify and respect the authorship (Universidad Carlos III de Madrid, 2014).

For this purpose, it is important to know the elements that make up a bibliographic reference: author, title, medium or support, edition or version, publication data, date, series, numbering, identifier, availability and additional information, this is done according to the format chosen and suggested in the research, also called citation styles; on this occasion we only refer to the APA and Vancouver style, these styles should be applied to the entire work respectively and at the end the bibliography or references will be placed.

Importance of citing a source

To cite is to reproduce the ideas or words of other authors as relevant information, it refers to mentioning the source from which the information was obtained. The importance of citing is to increase the value of the work, mainly of an academic nature, it is the basis of the statements and conclusions that you as an author can reach. It allows other people's ideas and work to be acknowledged, so that the reader can access the original source of the information (Miyahira, 2023). Citations have several functions:

- They present advances in knowledge in the fields of study.
- They provide a source for generating arguments for or against the topic being discussed.
- They allow the work being done to be related to the knowledge found in the state of the art.
- Correct citation and referencing preserves the intellectual property of the authors and thus avoids plagiarism.
- Preserving the originality of the information allows it to be used in a more organised and creative way.
- Facilitates the reader's access to the original source of the information

What should be cited?

Ideas, research, opinions or theories, statistical data or graphs and images that are not in the public domain. Reference to words or phrases said by other people or paraphrasing and quotations that have been used by other authors (Colín Rojas & Montiel Calzadilla, 2023).

Citation standards and styles

There are several citation styles, among the most common are the APA (American Psychological Association) or IEEE style used in the social sciences, Vancouver and Harvard in the health sciences and Chicago (or Turabian) in other fields, among others.

APA 7th Edition

APA is not only a style for citation and referencing, it is also a style for structuring professional documents. APA structured papers include: a title page, main text and references. Each element of an academic paper has specific rules for presentation and structuring. Font sizes, font type, line spacing and page borders are relevant for presentation (APA, 2020a). Despite their relevance in document structure, this learning unit programme will address the formats for citation and referencing in the format suggested by the American Psychological Association in its most current version, seventh edition (APA).

Box 1

Table 1

Use of references in APA 7th edition

Book with an author	Surname(s), A. A. (Year of publication). Title in italics. City: Publisher. Example: Goleman, D. (2000). *La inteligencia emocional: Por qué es más importante que el cociente intelectual.* México: Ediciones B.
More than 20 authors	Use the usual format Surname(s), A. A. up to nineteen authors and then use the ellipsis after the name of the nineteenth author. Write the last author of the work Example: Villa Gracia, A., Meo, A., Camacho López, A., Miguez Santacruz, A., Horno López, A., Marcos Rafael, C.,Daza Orozco , C., Rosain, D., Mercado Mercado, E., Ávarez Gandolfi, F., Paula Alejandra, F., Del Vigo, G., Elena, G., Muñoz, J., Banega Peyrot, J., Urbano, K., Diego, L., Guerra, M., Cobos Cobos, T., ... Cerdan Martinez, V. (2018). Visual narratives. Colombia: San Mateo University Foundation.
Book with publisher	Surname(s), A. A. (Ed.) (Year of publication). Title in italics. City: Publisher. Example: Pérez López, C. (Ed.) (2009). Advanced Statistical Methods with SPSS. Madrid: Thompson.
Book in electronic version	Surname(s), A. A. (Year of publication). Title in italics.DOI or URL Example: De Jesús Domínguez, J. (1887). Administrative autonomy in Puerto Rico. http://memory.loc. gov/cgibin/query/r?ammem/lhbpr:@field%28DOCI D+@lit%28lhb- pr33517%29529
Website	Surname(s), A. A. (Year of publication). Title of the article. Title of the web page. http://www.xxxxxx.xxx Example: Cintrón, G., Lugo, A.E. & Morris, G. (1978). Mangroves of arid environments in Puerto Rico and adjacent islands. Biotropica. http://www.jstor.org/pss/2388013
Unpublished thesis, in print	Surname(s), A. A. (Year of publication). *Title in italics* (Unpublished master's or doctoral thesis). Name of the institution, Location. Example: Nuria Villalba, I. (2010). Role of calcium in penile vascular regulation and its implication in diabetic vasculopathy (Unpublished PhD thesis). Complutense University of Madrid, Madrid.
Published thesis retrieved from online database	Surname(s), A. A. (Year of publication). *Title in italics* (Master's or doctoral thesis, name of the institution that awarded the degree). Name of the database. Example: García Torres, A.C (2018). *Inter-municipal migration in Nayarit to the municipality of Bahía de Banderas: welfare assessment of Nayarit migrants* (Master's thesis, Universidad Autónoma de Nayarit). Aramara Institutional Repository.
Journal article in database with no assigned DOI	Surname(s), A.A. (Year of publication). Title of the article. *Name of the journal in italics, volume (*number of the journal*)*, start number - end page number. URL. *Note*: It is not necessary to indicate the database from which the article was obtained, nor the date. Example: Baron A, R. (2007). Behavioral and cognitive factors in entrepreneurship: entrepre- neurs as the active element in new venture creation. *Strategic Entrepreneurship Journal, 1 (* 1-2), 167-182, https://onlinelibrary.wiley.com/doi/10.1002/sej.12
Article with assigned DOI	Surname(s), A.A. (Year of publication). Title of the article. *Name of the journal in italics, volume (*number of the journal*)*, start number - end page number. DOI. *Note*: it is not necessary to indicate the date on which the article was accessed. Example: Bradburd, R. M. & Ross, R. D. (1989). Can Small Firms Find and Defend Strategic Niches? A Test of the Porter Hypothesis. *The Review of Economics and Statistics, 71*(2), 258-262. DOI: 10.2307/1926971
PDF file	Surname(s), A. A. (Year of publication). *Title in italics.* URL Example: INEGI. (2020). *Presentation of results, Nayarit.* https://www.inegi.org.mx/contenidos/ programmes/ccpv/2020/doc/cpv2020_pres_res_nay.pdf

Source: American Psychological Association (APA) in its 7th Edition of the material APA Standards Guide 7th edition
(APA, 2020b)

Vancouver

Vancouver style is mainly used by medical journals, as well as by the National Library of Medicine (NLM) and Pubmed (a citation site for biomedical literature).

Box 2	
Vancouver	
Use of references in Vancouver format	
Book	Surname(s), A. A. Title of book. Edition. Place of publication: Publisher; year. Examples: Laín Entralgo P. Historia de la medicina. Barcelona: Ediciones científicas y técnicas; 1998. Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J, editors. Harrison principles of internal medicine. Mexico: McGraw-Hill; 2012
Book chapter	Surname(s), A. A. Chapter title, In: Director/Coordinator/Editor of the book. Title of the book. Edition. Place of publication: Publisher; year. initial-final page of the chapter. Examples: Franklin AW. Management of the problem. In: Smith SM, editor. The maltreatment of children. Lancaster: MTP; 2002. p. 83-95.
Magazine article	Surname(s), A. A. Title of the article. International abbreviation of the journal. year; volume (number): initial and final page of the article. Example: Vitoria JC, Bilbao JR. New developments in coeliac disease. AnPediatr. 2013;78(1):1-5.
Online magazine article	Surname(s), A. A. Title. Abbreviated journal name [Internet] year [accessed]; volume (number): pages or length indicator. Available at: URL. Example: Abood S. Quality of improvement initiative in nursing homes. Am J Nurs [Internet]. 2002 [Accessed 22 Nov 2012]; 102(6). Available from: http://www.nursingworld.org.
Book or monograph on the internet	Apellido(s), A. A. Título [Internet]. Lugar: Editor; año [revisión; consultado]. Disponible en: URL. Example: Richardson ML. Approaches to differential diagnosis in musculoskeletal imaging [Internet]. Seattle (WA): University of Washington School of Medicine; 2007-2008 [revised 2007-2008; cited 2009 Mar 29]. Available from: http://www.rad.washington.edu/mskbook/index.htmlpA
Website	Author/s. Title [Internet]. Place of publication: Publisher; Date of publication [revised; accessed]. Available at: electronic address. Example: European Space Agency. ESA: Missions, Earth Observation: ENVISAT. [Internet]. [Accessed 3 Jul 2012]. Available at: http://envisat.esa.int/

Source: Biblioguias Library. Citation and bibliography: Plagiarism and the ethical use of information: Vancouver style. Autonomous University of Madrid.
https://biblioguias.uam.es/citar/estilo_vancouver

Harvard

The Harvard style originated at Harvard University. It has been adapted by individual institutions, there is no manual or formatting rules, so it is imperative to follow the regulations specified by the institutions that apply it.

This style is used in the fields of archaeology, biochemistry, biology, economics, environment, health services, administration, philosophy, politics, theatre, television and media (University of York, 2023a).

IEEE

The IEEE style of referencing is specified by the Institute of Electrical and Electronics Engineers and is widely used in electronics and related disciplines. The user should be sure to check the specifications requested when referencing in this style.

IEEE uses numbers in its citations, where the number serves the function of relating the citation to the reference. Numbers are enclosed in square brackets {} (University of York, 2023b).

Activity 1			
Bibliographic citations			
Instructions:			
Select the appropriate citation style to list a minimum of five bibliographical references to the topic of the integrative case (Final Project).			

1.			
2.			
3.			
4.			
5.			

Bibliographic managers

A bibliographic manager, also known as a reference manager or citation manager, is a tool or software designed to help researchers, academics and students organise, manage and cite bibliographic references used in their research work, such as scientific articles, books, theses, essays, among others.

Bibliographic managers allow users to collect and store centrally the bibliographic references of the materials they have consulted. These references can be imported manually or through online academic databases and/or library catalogues. In addition, some bibliographic managers have the ability to extract metadata automatically from PDF documents or other files, thus facilitating the creation of a personal library, which allows bibliographic references stored in the manager, can be organised by tags, keywords or custom categories to facilitate the search for information retrieval and offer advanced search functions, which allow you to find specific references.

One of the most outstanding aspects of a bibliographic manager is its ability to automatically generate citations and bibliographies in different citation style formats, such as APA, Vancouver, Harvard, Chicago, among others. This streamlines the citation process and ensures the accuracy and consistency of references used in academic papers.

Popular examples of bibliographic managers include Zotero, Mendeley, EndNote and RefWorks. Each of these managers offers different features and functionalities, so it is advisable to evaluate their features and choose the one that best suits your individual needs.

Some of the advantages of using bibliographic managers are the following:

- Easier creation of citations and bibliographic reference lists.
- Automatic capture of citation information directly from web pages.
- Possibility of saving PDF, files, images, links and complete web pages.
- Allows notes to be appended with the auto-save option.
- It has a quick search system for citations within the collections.

-       Export system with a list of styles.
-       Integration with Microsoft Word, Open Office or Google drive.
-       Allows the creation of folders for different collections or jobs.
-       These programmes can, from data capture or during the import process, detect the presence of duplicate records and some allow the editing of records during this process.
-       Organise information as soon as it is reviewed.
-       Be selective and do not divert attention to other issues or data that had not been raised.
-       Identify where you have more data and where you need more data.
-   Be able to go back to the source if needed.

Main features of bibliographic database managers

Zotero

It is a free software reference manager with an open licence. Zotero consists of a desktop application, available for Mac, Windows and Linux, which allows you to manage your references, and a connector for the Chorme, Firefox and Safari browsers, which automatically detects and captures all kinds of bibliographic information on the web.

It is also possible to use Zotero as a cloud application by creating an account on Zotero.org. If we synchronise our desktop Zotero with our web account, we can access our bibliographic references from any computer.

Installing Zotero is very simple. Go to the website of the manager, Zotero.org, and click on DOWNLOAD.

Box 3
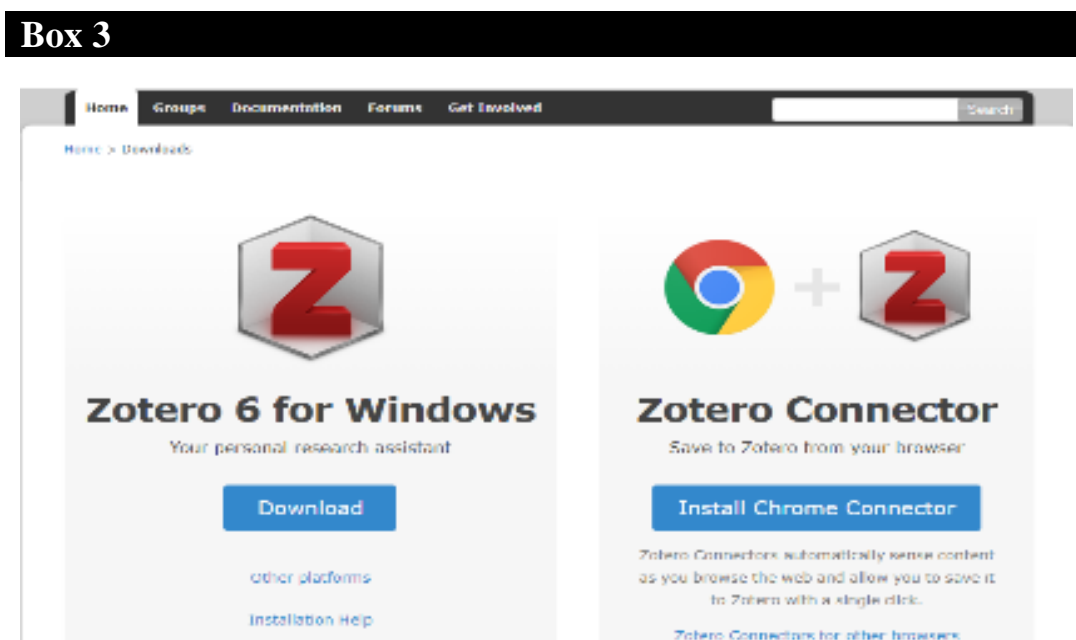
Figure 1

Installation of Zotero

https://www.zotero.org

The download page automatically detects our operating system and our browser. Click DOWNLOAD and download and install Zotero 5.0. The plugins for Word, Google Docs and Libre Office are installed together with Zotero on our computer.
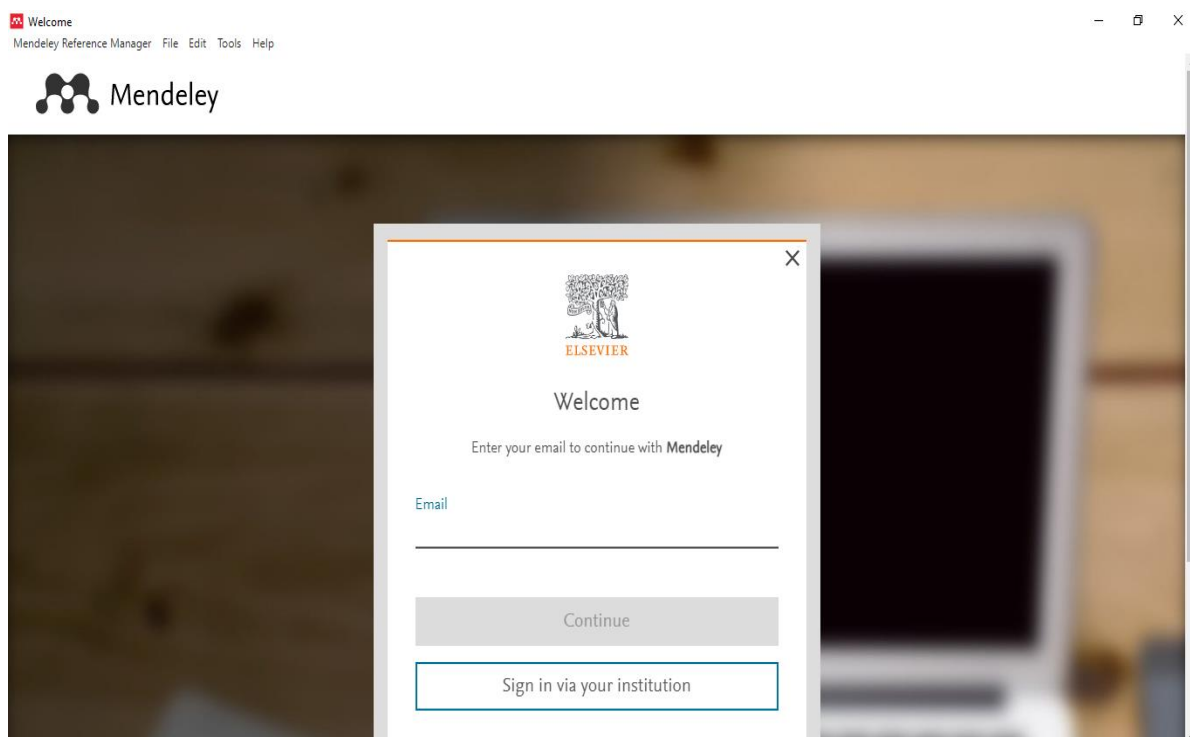
From the download page, we install the plug-in for our browser.

A Zotero icon (a Z or a small rectangle) will be installed on the right side of the toolbar of our browser.

Activity 2
Bibliographic information managers
Instructions:
Visit the Zotero website*(www.zotero.org)* and download the free software. Then create a list of five references.

1.	
2.	
3.	
4.	
5.	

Mendeley

Box 4

Figure 2

Mendeley manager website

Mendeley software

First we need to create an account and download Mendeley Login to register at http://www.mendeley.com/

Register: It is possible to log in with your Facebook id and password, but it is more advisable to register separately. The first thing you will be asked for is your name and an email address.

The profile will show the data you have entered. You can change it at any time.

In this second step, we click on Download, and the Mendeley Desktop programme is installed on our computer, where we can work with our references without using a browser, even without an Internet connection.

The Mendeley icon is installed on your desktop and you can start using it: You can always log in to your account from http://www.mendeley.com/, or via Medeley Desktop.

References in Word

New versions of Microsoft Office Word offer the possibility to generate bibliographies automatically, based on the source information provided for the document. Each time a new source of information is created, it is saved on the computer so that it can be searched and used in any document. It is possible to automatically export references from a catalogue, databases or websites, be it books, videos, etc., and import them into your own database in Word's reference manager.

Once the reference database is created in Word, it is possible to use it to insert the citation while writing the document, the selected references will automatically appear and create the bibliography in the different bibliographic formats.

RefWorks

It is a tool that allows you to create your own bibliographic reference base, accessible from anywhere in the world via the Internet. These references will be available for the articles and give them the appropriate bibliographic format.

RefWorks is a commercial online bibliographic management software. To use it you need to register as an individual or institutional user. When registering as an individual user you can use it free of charge and try it out for thirty days.

EndNote

This is a reference manager under licence from Thompson of which there are two versions: local and online. A 30-day trial can be downloaded from the site: http://endnote.com/downloads/30-day-trial. EndNote's features include: automatically collects, stores, organises and inserts citations and bibliographies, allows attachment of files to a record (up to 1 GB) and a larger capacity to store up to 25,000 references, displays files and annotations in PDF format, full-text search, automatically updates references, compares duplicate references quickly, among others.

Activity 3	
Bibliographical references	
Instructions:	
Based on the theme of the integrative case (Final Project), use the bibliographic manager of your choice to reference five sources of information.	

1.	
2.	
3.	
4.	
5.	

Review questions

Answer the following questions according to what you have learnt in chapter VI Reference managers

1.   What are the functions of citations?
2.   According to the different citation styles, how would you cite a journal in Vancouver style?

3. Explain what a bibliography is.
4. What elements make up a bibliographic reference?
5. What are the most common citation styles?
6. Which style would you use in an academic document in the area of Health?
7. What is a bibliographic manager?
8. Indicate the name of a bibliographic manager and describe some of its characteristics.

Declarations

Conflict of interest

The authors declare that they have no conflicts of interest. They have no financial interests or personal relationships that could have influenced this book.

Authors' contribution

Madero-Ortega, Montserrat: contributed with the revision of the new versions of the Refworks and Citavi managers, drafting of the APA section and updating of the reference formats from APA 6 to APA 7, transcription of the document into the template for publication by ECORFAN Mexico. Drafting of keywords in English and Spanish, CONAHCYT classification, keys to the material, as well as abstracts in English and Spanish.

Meseguer-Mendoza, América Irene: contributed to the writing of the introduction. Review and analysis of the Zotero and EndNote managers. Participated in the writing of the body of the chapter. Contributed to the articulation and integration of themes and sub-themes.

Ventura-Basto, Sarah Graciela: contributed to the search, review and analysis of the reference managers EasyBib and BibTex.

Rueda-Rea, Manuel Alejandro: contributed to the review and analysis of the Bidme and Mendeley reference managers, developed a guide for the installation of the Zotero and Mendeley reference managers, describing the necessary steps for their installation and use. He developed the graphical summary of the chapter in both English and Spanish, highlighting: objectives, methodology and the contribution to the student to manage references automatically.

Abbreviations

UAN: Autonomous University of Nayarit
TBU: University Core
TCGI: Communication Technologies and Information Management
CONAHCYT: National Council of Hunmanities, Science and Technology
APA: American Psychological Association
IEEE: Institute of Electrical and Electronics Engineers

References

Antecedents

Universidad Carlos III de Madrid. (2014). Biblioteca Universidad Carlos III de Madrid.

Universidad de Alcalá. (2011). Biblioteca Universidad de Alcalá.

Universidad Autónoma de Madrid. (s/f). Citas y elaboración de bibliografía: El plagio y el uso ético de la información: Estilo Vancouver.

Basics

American Psychological Association. (2020a). Guía Normas APA 7a edición. normas-apa.org.

American Psychological Association. (2020b). Guía Normas APA 7a edición. normas-apa.org. Recuperado el 22 de junio de 2023.

Support

University of York. (2023a). Harvard referencing style. Referencing styles - a Practical Guide.

University of York. (2023b). Harvard referencing style. Referencing styles - a Practical Guide.

Differences

Colín Rojas, J. A., & Montiel Calzadilla, E. (2023). *Citas y referencias bibliográficas en la escritura académica* (Universidad Nacional Autónoma de México, Ed.; 1st ed.).

Discussions

Miyahira, J. (2023). Importancia de citar y referenciar correctamente en los trabajos académicos. *Revista Médica Herediana*, *33*(4), 225–226.

Chapter VII Ethical use of information

Capítulo VII Uso ético de la información

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CONAHCYT classification:

Area: VII Humanities and Behavioral Sciences
Field: Pedagogy
Discipline: Educational theory and methods
Subdiscipline: Other

Key A-Books

The contribution made by this chapter allows strengthening the values in the ethical use of information of those who read the document, at the same time that it orients them in some spaces that exist for the dissemination of information, in which they will have the opportunity to share the results of their work, taking into account the current regulations, which will avoid committing plagiarism and falling into illegalities, using the anti-plagiarism tools at their disposal. The reader-student's ability to develop not only to identify reliable sources and use the tools that facilitate their access is indispensable, but also the ethical use of the information handled in research or academic work, not to commit plagiarism and to know which tools can help us to avoid legal problems, as well as to develop competencies for their proper use and to be able to make known the results of the work done in the most appropriate dissemination space. For a student to be able to communicate the findings obtained, he/she must first know the spaces that will allow the dissemination of these, but also know how to use and communicate this information ethically, which he/she will not be able to do if he/she is not aware of committing plagiarism since he/she does not know that he/she can transgress the legality of its use, therefore it is essential to address it in the chapter, together with tools that can help avoid these problems.

RENIECYT

Registro Nacional de Instituciones y Empresas Científicas y Tecnológicas

I702902 CONAHCYT

Abstract

The chapter VII on the ethical use of information provides guidance for people who communicate information and who are often unaware of the implications of publishing it, the legal regulations that must be followed to avoid committing plagiarism, as well as recommendations for making ethical use of the information.

Ethical use of information		
Objetives	**Methodology**	**Contribution**
Capable reader	A didactic approach is used	Formation of valuesin the use of information
Ethical use of information without violating legal regulations	Theoretical and practical activities	Development of skills in handling anti-plagiarism tools
Know and use tools that detect plagiarism	Disclosure of information	Correct application of ethical and legal regulations
	Ethical use of information	Disclosure of information
	Plagiaism and antiplagiarism tools	

Ethical use of information, Plagiarism, Dissemination method

Resumen

El *capítulo VII sobre el uso ético de la información* proporciona una orientación para las personas que comunican información y que muchas veces desconocen las implicaciones que con lleva publicarla, las normativas legales que se deben atender para no cometer plagio., así como recomendaciones para hacer un uso ético de la información.

Uso ético de la información		
Objetivo	**Metodología**	**Contribución**
Lector capaz	Se utiliza un enfoque didáctico	Formación de valores en el uso de la información
Uso ético de la información sin infringir normas legales	Actividades teóricas y ´practicas	Desarrollo de habilidades en manejo de herramientas antiplagio
Conocer y utilizar herramientas que detectan plagio	Divulgación de la información	Aplicación correcta de normatividad ética y legal
	Uso ético de la información	Divulgación de la información
	El plagio y herramientas antiplagio	

Uso ético de la información, Plagio, Método de divulgación

Introduction

Nowadays there are numerous techniques, tools and methods for disseminating academic texts, however, one must not lose sight of the central objective, which must be to communicate to the public, in a clear way, the value and impact of the research carried out in order to promote the understanding and socialisation of the problem raised. In this way, the audience and the medium through which the results of the research will be made known must be considered in the first instance in order to transmit the information appropriately.

Dissemination spaces:

Scientific journals

These are periodical publications that accept, through their editorial board, the publication of texts which must be original and current. Experts in the field are involved in this medium. There are multidisciplinary and specialised journals, and some accept advances on topics and lines of research developed by students, professors and tutors. It is recommended to go to the portal offered by the National Council of Science and Technology (CONACYT) which offers an Index of Mexican Journals of Scientific and Technological Dissemination (www.conacyt.mx/index.php/comunicacion/indice-de-revistas-mexicanas-de-divulgacion-cientifica-y-tecnologica), as well as the website www.revistas.unam.mx/front/ and the databases of the digital library of the Magna Library. Example: Journals, Scholarly, Scientific Journals, Academic Journals, academic journals, refereed or specialised journals.

Outreach journals

These journals are written for a general public. Their aim is to disseminate various topics of popular interest, using a common language. Example: Magazines, general magazines.

Personal blog

It is a term in English that means journal, which is used to name a website where you can publish your own scientific texts or those of other authors. In this space the complete text is presented and the design is subject only to the requirements of the author of the blog. Example: Wordpress and Blogger pages.

Colloquia and conferences

The colloquia and congresses are academic or scientific spaces where knowledge is shared, these allow to advance in their contribution to research training according to Pérez et all (2019), they also have a social function as they are spaces that reinforce social ties and also provide information for the study of scientific productivity. In order to communicate the information, it is logical that the text must be published; dissemination can be developed in various formats and sites. However, the text must meet the requirements of the rules of writing and citation in order to have quality (in the book 'Elaboration of Academic Works through the Development of Thinking Skills' there are strategies for citation and referencing of information). The need to read and understand scientific information is indisputable, as well as to observe the main characteristics and the way in which this type of text is structured.

Expository texts

Expository texts aim to explain and inform in a fair and objective way. They are constructed through: concepts, descriptions, classifications, bibliographical references, relations and comparisons of ideas. Through reading or writing expository texts, learning is achieved.
There are two types of expository texts:

Informative texts

They only seek to inform in a clear and objective way about a subject of general interest and do not require knowledge of the subject. Example: books, encyclopaedias, newspaper articles, among others.

Scientific texts

Their purpose is not only to inform, but also to make complex phenomena or concepts understandable and requires knowledge of the subject matter. Examples: conferences, essays and articles in scientific journals.

In order to write scientific texts, one must have the capacity and ability to manage information, process it and express it in writing, citing the ideas of authors. After writing this type of text, you must have the knowledge of the means to disseminate the results obtained in the research work.

Activity 1	
Using technology to communicate scientific texts	
Instructions:	
Choose one of the tools to disseminate your integrative case in the group. Example:	
Tool to disseminate integrative case	**Description of why you have chosen - no more than 50 words**
VII Interdisciplinary Research Colloquium	The colloquium is held every year and gives students, teachers and researchers the opportunity to participate with argumentative essays, research protocols or research results. They check that the documents comply with ethical and legal regulations, I think it is an adequate space.
1.-	

Ethical use of information

It is necessary for students to develop information competences, understood as the ability to recognise information needs, find, evaluate and critically handle information obtained from different sources, both printed and electronic.

From this perspective, it is considered that plagiarism can be avoided, once students begin to work with their own criteria, they will find the authentic part of handling and quoting, although at first it will be difficult, but as they practice they will increase their knowledge and will naturally support the ideas of others with their own ideas, mentioning the sources of the information in the correct way.

Sánchez (n/d, p. 1) points out that 'the availability of enormous sources of information and the little control that exists over them, makes organisations vulnerable not only to the loss of information but also to the risk of plagiarism' by their collaborators, and that access to these diverse sources via the internet allows the possibility of copying diverse materials such as articles or images, often without considering the copyright of these, leading to legal problems later on due to carelessness or ignorance. He states that 'plagiarism is considered as the appropriation of a work, thus violating the author's economic, moral and related rights' (p. 7).

Nowadays, plagiarism figures have increased significantly, due to the rampant practice of surfing the internet, which makes it more vulnerable and volatile to copy and steal the ideas, papers, concepts, and works of any author. This incident is known as *Cyberplagiarism Ibidem (p.9)*

Muños et all (2021) mention that 'the avoidance of plagiarism has to be achieved by putting in place the means to raise awareness that in universities there are moral rules that should not be ignored, preventing, teaching, but also sanctioning' (p.115); they point out that there are different measures to sanction students who do not comply with these measures, both punitive and coercive, depending on the regulations of each university. But beyond that, students should be made aware of the need to avoid plagiarism by citing and referencing the works that have contributed to their work (Martín, 2020).

In this context, the contribution made by Artificial Intelligence, which in the last year has seen its use in different digital platforms on the internet, and which is not always used ethically, must also be addressed. This subject has been addressed in previous units, but it is considered relevant to mention, without 'demonising' its use, for which UNESCO (2019) is cited, where it indicates that:

Recalling the *Qingdao Declaration*, adopted in 2015, on harnessing information and communication technologies (ICT) to achieve SDG 4, which states that new technologies should be harnessed to strengthen education systems, access to education for all, effective and quality learning, and equitable and more efficient service delivery, we are aware of the urgency of reaffirming and renewing this commitment as we move into an era characterised by the widespread application of artificial intelligence (p.29).

Also Flores and Garcia (2020, p. 2) point out that:

SDG 4 highlights that AI technologies are used to ensure equitable and inclusive access to education (UNESCO, 2019). This implies having to change the role of teachers in the transmission of knowledge they provide to the younger generation.

Plagiarism

According to the Royal Spanish Academy (RAE), plagiarism is defined as the action of 'substantially copying the works of others, giving them as one's own'. It is the practice of taking credit for ideas, words or concepts from other people and using them in an oral or written work as if they were one's own. Plagiarism does not only apply to text, but also to images, photographs, tables, graphs, etc.

Martín (2020, p.1) points out that plagiarism 'undermines academic honesty and copyright and infringes the ethical standards of scientific communication, as expressed in the guidelines of the Committee on Publication Ethics (COPE) and the Code of Ethics of the American Psychological Association (APA)', violating originality and the recognition of other people's ideas, two essential characteristics of scientific and academic communication. 'There are also Creative Commons licences5 that are based on copyright, but allow the author to decide which rights to keep and which to release' (ibidem, p. 2). Plagiarism is taking the ideas, words or phrases of others, without giving due credit to the person who expressed them.

It is very common among students to copy and paste without acknowledging the author's work by citation and without considering the ethical and legal repercussions that this 'may bring'. To avoid falling into plagiarism, it is necessary for students to do their own reasoning, to learn to paraphrase and to quote correctly.

Types of plagiarism:

- **Unintentional plagiarism**: due to ignorance, when the person is not aware that he/she is committing a dishonest act or because he/she is unaware of citation regulations.

- **Intentional plagiarism:** when someone claims someone else's idea or words as their own, but is aware that they are doing something wrong.

- **Plagiarism for payment:** when someone hires another person or company to do the work or buys work done by someone else.

- **Total plagiarism:** when a published work is copied in its entirety.

- **Self-plagiarism:** the practice of presenting one's own previously published work as if it were recent. That is, when the same text is used in a new document without citing the previous or original work.

- **Inappropriate paraphrasing:** when quoting and paraphrasing the ideas of an author changes the meaning or takes the original idea out of context.

- **Unauthorised copying:** when images, photos, diagrams are taken and used without the author's and/or publisher's permission.

- **Copying of a translation:** when texts are translated into other languages and the authorship of what is written is not acknowledged.

Readaptation to Martin's proposal (2020, p.2). It is not necessary to cite when the facts or data are known or the result of one's own ideas.

What can be plagiarised?

Any work that is published and/or registered must be cited or permission must be requested for the use of it, which could be at a cost (scientific articles, music, films, scripts, among others). Otherwise, the authorship will be usurped and it is conducive to fraudulent use of the author's intellectual and economic rights.

When it is not considered plagiarism

- Expressing one's own ideas.
- Acknowledge and properly cite the work of another author.
- Present the results of the methodology used.
- Use common knowledge or knowledge in the public domain.

Some examples of common knowledge:

- The Autonomous University of Nayarit was founded by Governor Julián Gascón.
- The order of the factors does not alter the product.
- Water you shall not drink, let it flow.

On the other hand, it is indispensable to mention that the protection of literary and artistic works exists through WIPO (s/f, para. 1), where it is stated that 'The Berne Convention, which was adopted in 1886, deals with the protection of works and authors' rights. It provides creators such as authors, musicians, poets, painters, etc., with the means to control who uses their works, how and under what conditions',

Also the Federal Copyright Act (2020) protects, as its name suggests, copyright, where it states in Article 1 that it:

has as its object the safeguarding and promotion of the cultural heritage of the Nation; protection of the rights of authors, performers, publishers, producers and broadcasters, in relation to their literary or artistic works in all their manifestations, their performances, their editions, their phonograms or videograms, their broadcasts, as well as of other intellectual property rights. (p.1)

Muñoz et al (2021, p. 1) mention in a study carried out with university students on 'the perception of university students on possible strategies to eliminate plagiarism in their academic work'. In addition, in the conclusions they state that:

Students admit that plagiarism usually occurs due to ignorance, but it comes from previous educational stages; in this sense, they call for actions aimed at informing them of the importance of not committing plagiarism, how to access information sources and resources and how to cite, but also about the regulations that govern it and the consequences of not doing it correctly. (p. 17).

In this sense, the academy of communication technology and information management has been concerned to produce this book, which addresses the recommended processes and strategies for respecting the contributions of authors, avoiding plagiarism and promoting the ethical use of information.

Plagiarism detectors

Plagiarism detection software is available and is useful for detecting possible errors. Below is a table with some examples of such programmes:

https://copyleaks.com/es/
Plagiarism and Artificial Intelligence Content Detector

- **Smallseotools**

https://smallseotools.com/plagiarism-checker/
Small SEO Tools is an integrated collection of 100% free PRO SEO tools. Popular SmallSEOtools like Plagiarism Checker, Article Rewriter, Backlink maker and more than 70 other free tools.

- **Articlechecker**

www.articlechecker.com
PlagiarismChecker is a tool that allows you to perform a Google search of large blocks of text, which is easier than cutting and pasting sentence after sentence.

- **Plagium**

www.plagium.com
This tool performs a Google search of a text, but with the advantage that it works in several languages.

- **PlagiarismDetect**

www.plagiarismdetect.com

A plagiarism detector that allows you to load entire documents, instead of cutting and pasting blocks of text. It is a free tool, but registration is required.

A plagiarism detector that allows you to upload entire documents, instead of cutting and pasting blocks of text. It is a free tool, but registration is required.

- **Duplichecker**

www.duplichecker.com
Another tool that allows you to submit text to search engines, both whole documents and extracts.

- **SeeSources**

www.plagscan.com/seesources/
Searches the Web for sources similar to the text you entered. You can browse both excerpts and entire documents.

- **Viper**

www.scanmyessay.com
Is an Anti-Plagiarism scanner. Although free to use, Viper is software, so it is more than a web-based tool. It offers some advantages, such as being able to compare side-by-side, submitted text against potentially plagiarised text.

- **Turnitin**

www.turnitin.com
This anti-plagiarism tool checks submitted work for incorrect citations or potential plagiarism by checking the document against the world's most accurate and comprehensive text comparison database.

Used by large institutions such as universities and publishing houses, its analysis effectiveness is very high and institutions pay for the number of users who use it (UNAM, 2022).

- **iThenticate**

https://www.ithenticate.com
Used by large institutions such as universities and publishers. Institutions pay for the number of documents to be analysed (ibidem).

- **Duplichecker**

https://www.duplichecker.com/es

     Duplichecker.com's plagiarism checker is one of the most favourite and preferred tools for detecting copied content on the web. If that content is copied for educational purposes or website content. We will detect it for you.

Activity 2
Anti-plagiarism programmes
Instructions:
Use plagiarism detection software to avoid committing an ethical misconduct or copyright offence before submitting the integrative case. In this exercise use at least one and maximum two of them, describe your experience.
Example:

Name of the anti-plagiarism tool you used	Description of the use of the tool - not more than 70 words
Plagium	My experience was pleasant as it is very easy to use and has an artificial intelligence detector tab. I only checked one page and it detected 95% plagiarism and even showed me the website where I could see part of the text, fortunately I had already cited that part and it only served to check its effectiveness,
1.-	
2.-	

References

Antecedents

OMPI (1886). Convenio de Berna para la Protección de las Obras Literarias y Artísticas.

Basics

Martín, S. M. (2020). ¿Qué es plagio? Método Investigación Aplicada a las Ciencias Biológicas, 5(4).

Support

Ley Federal de Derecho de Autor, [L.F.D.A.],. Reformada, Diario Oficial de la Federación publicada [D.O.F.], 01-07-2020, (México).

Martínez-Sala, A. M., Alemany, D., & Segarra-Saavedra, J. (2019). Las TIC como origen y solución del plagio académico. Análisis de su integración como herramienta de aprendizaje. .

Muñoz Cantero, J.M., Espiñeira Bellón, E.M., y Pérez Crego, M.C., (2021). Medidas para combatir el plagio en los procesos de aprendizaje. Educación XXI, 24(2), 97-120.

Sánchez Baquero, L. M. (2023). Auditoria Informática Forense en el plagio de derecho de autor.

Smallseotols (s/f) Verificador de plagio. Detector de contenido de IA.

UNAM (2022). Software antiplagio [digital]. Bibliotecas UNAM DGB.

Differences

Pérez Díaz, A. B, López García, J. C. & Buendía Espinosa, A. (2019). El congreso académico como espacio para la formación de investigadores. El caso del Encuentro Nacional de Estudiantes de Posgrado en Educación. *Revista mexicana de investigación educativa*, *24*(83), 1109-1134.

Segarra-Saavedra, J., & Martínez-Sala, A. M. (2020). Percepción del plagio y uso de herramientas antiplagio por parte de alumnado universitario.

Discussions

Boillos Pereira, M. D. M. (2020). Las caras del plagio inconsciente en la escritura académica. *Educación XX1: revista de la Facultad de Educación*.

Herrera Cardozo, J. (2022). La divulgación del conocimiento: entre el saber y el saber expresarlo. *Revista Neuronum, 8*(1), 44-49.