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Artificial intelligence and the ethics of knowledge documentation in academic research (humanities and social sciences research as a model)

Dr. Djelloul Daouadji Abdelkader [1], Dr. Laouer Kamel [2]

[1] University of Hassiba Ben Bouali, Chlef, Algeria. E-mail: dawajiaek@gmail.com

[2] University of Hassiba Ben Bouali, Chlef, Algeria. E-mail: Laouer.kamel@yahoo.com

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Abstract:
The research aims to highlight and warn of the danger of using artificial intelligence so that we do not encounter distorted research, an unreal image, or a fabricated video. This is one of the negative fruits of artificial intelligence, especially with regard to scientific research and its methodology. This research paper aims to instill a culture of research ethics in the minds of students and researchers, such as honesty, credibility, transparency, respect for the rights of others, intellectual property, objectivity, good citation and referencing, and the necessity of complying with such ethical standards. In this work, we concluded that it is necessary to establish ethical standards related to the use of artificial intelligence and that training on these ethics must be promoted for all those working in research fields. Research institutions should also cooperate with regulatory bodies to develop policies that are concerned with confidentiality and the protection of the privacy of subjects and their owners, as well as establishing platforms for knowledge and relational exchange between different sciences such as computer science, ethics, and the humanities and social sciences, and for researchers to share their successful experiences, which leads to improving the ethical use of tools and technologies.

Keywords: artificial intelligence, ethics, documentation, humanities and social sciences.

Introduction:

Artificial intelligence technologies are modern tools that contribute to enhancing scientific research in the social sciences and humanities. They provide new opportunities for data analysis and pattern extraction, leading to a deeper understanding of human behavior and social interactions.

However, researchers face numerous challenges, such as ethical and privacy issues, as well as the need to ensure data accuracy and reliability. Therefore, it is crucial to strike a balance between leveraging these modern technologies and addressing the associated challenges to guarantee reliable and effective results.

This research paper answers a number of questions, the most important of which are: What are the benefits of employing artificial intelligence techniques in humanities and social sciences research in a way that serves their research in a responsible manner? What are the ways to highlight the ethics of scientific research related to the use of artificial intelligence to ensure integrity and protect intellectual property? Because yesterday's laws cannot be applied to today's research? What are the conditions

for using artificial intelligence techniques in academic research and what is the impact of this in light of the technological developments and the huge information revolution?

In the concept of scientific research methodology:

Definition of the method: Language: The clear and evident path, and this meaning is mentioned in the Holy Quran: “For each of you We have appointed a law and a way of life.” (Al-Maidah 50). In Lisan al-Arab by Ibn Manzur, it says: “Approach and route” means “the path.”

Technically speaking: Methodology is any way in which a person works to reach facts and knowledge, or it is the organized investigation by following specific scientific rules with the aim of uncovering a fact or facts that interest us in order to verify their accuracy, either to correct them, or to restore and renew them, or to add something important to them.

It is an ancient method that man has known since ancient times. It began as simple and easy, then became complicated until foundations and theories were established for it. Man found in it ease and convenience to reach his goals and objectives, so it saved him effort, time and money, so the wheel of civilization advanced and knowledge and sciences flourished, and the demand for knowledge intensified, as did the demand for dividing and organizing these methods and paying more attention to them.

The Greeks were the first to know the method, and the word meant to them knowledge and the use of observation and research. Therefore, the use of this word was circulated among all philosophers, each according to his knowledge and specialization, as each of them had a method different from the other. The first of them to use it in the scientific sense were Plato and Aristotle. Then the features of the method began to become clear as the ages passed, until the seventeenth century AD came, when the word method appeared in the precise meaning that is currently known in the work of universities in research, letters, graduation notes and university theses. Abd al-Rahman Badawi indicates that “the one who has the credit for drawing attention to the importance of the method” is Ramos.

Because they discussed the method that should be followed in research, they wrote on the subject, and books were dedicated to this topic, such as Francis Bacon's "New Logic" (1900).In 1620 AD, Descartes wrote “Discourse on the Method,” Spinoza wrote “The Improvement of the Mind,” Charles House wrote “The Medicine of the Mind,” Professor Yule Royal published his book “The Art of Thinking,” and the German Kant (1724-1804) wrote “The Method” in 1800 AD, in which he studied the methods of knowledge and the methods of science in particular.

In the nineteenth century, methodological concerns extended beyond philosophy and science to history and humanities, leading to efforts to develop appropriate methodologies based on their specific characteristics, and a clear distinction was made between what is scientific and what is artistic.

Adopting this idea was important from several perspectives, and according to the nature of historical texts, in which historians adhered to objectivity in narrating historical facts, far from the weaving of imagination and conjectures. These heated discussions were also attended by men of literature and its makers, and the studies settled on proceeding according to the documentation of information through manuscripts, sources, references and necessary documents.

The adoption of this remarkable idea at the time led to the development of a methodology for historical and literary research, which was clearly evident in the active movement of writing that emerged during that period. Langlois and Synomus wrote in the yearIn 1898, he wrote "Introduction to Historical Studies," where he demonstrated the approach between method and subject matter. This approach became known in studies as the "retrospective method," because it involves retrieving the

past based on its perceived effects, whatever their nature, since they preceded it. These studies are known in mathematical sciences as the deductive method, and in natural sciences as the experimental method. Later, André Lalande, the historian of the modern experimental method, famously divided general methods into:

a) The deductive method: It involves linking premises and conclusions, and phenomena and their causes, starting with general principles, employing logical organization and its mechanisms, and making good use of the mind's contemplation, until it reaches the particulars.

B- The inductive method :It begins with the details, progressing to the general principles through systematic verification subject to experimentation, measurement, testing, and control of the research according to the variables that arise.

C- The formative approach: (Retrospection: Going back to the past) to understand the course of events that created the present, so that we can analyze and explain them.

D - The dialectical method: It aims to prove the ability to argue and prevail regardless of the perception of truth.

Literature began to be influenced by these studies, and debate arose about its nature. Literary research began to submit to the realities of collection, classification, criticism, refinement, study, and division (according to time and place), and to all aspects of life surrounding the literary text, including the ethics and activities of different writers, and their biographies, until the specialized methodology of literary research emerged in Lanson's book in 1900.In 1901 AD, he wrote: “The Methodology of Research in Literature,” in which he defined the methodology specific to literary research, laid out its broad outlines, and clarified the points of convergence between the literary method and the historical method, and the distinctive characteristics of each.

He believed that the subject of history is studied from what has passed and gone, and nothing remains of it except the trace, and through it research is revived and launched. But literature is also from the past, but it remains and is made from the past and the present.

Another characteristic is that literature is not a confined science, nor a science that assists history, but rather it is a comprehensive study of the history of the human soul, civilization and man in its human and literary manifestation.

Lanson drew attention to the fundamental differences between the raw material of history and literary material, explaining that history studies the past through surviving evidence used to reconstruct it, while literature bridges the past and present because its works continue to influence their original audiences. He emphasized that literature requires specific methodologies based on artistic analysis, distinguishing its study from traditional history. He argued that literature is linked to the history of the human psyche and national culture. Lanson's revolution in literary studies paved the way for numerous methodological works, helping to organize research according to more scientific standards despite differing approaches. A new generation of literary historians and critics emerged, such as Sainte-Beuve, Taine, and Brunetière, who established rigid laws for literature akin to those of science, disregarding artistic characteristics and taste. What did these three critics accomplish?

1- Sainte-Beuve, born in 1804 AD and died in 1869 AD: He called for a scientific study of writers based on revealing their relationship to their homelands, their fathers, their secrets, their temperaments, their culture, and highlighting their psychological and mental characteristics, their customs, beliefs, and ideas.

He divided them into groups and factions, as happens in the division of the plant and animal world and the speed of their interaction and influence by the external environment, just as the literary person

is influenced by the environment to which he belongs, and he is not concerned with the uniqueness of the personality of each writer; rather, he focuses only on everything that he carries and indicates the common features of the group of writers of his people. This vision paved the way for the division of literature into what is currently known in criticism as currents of thought and schools of literature, or literary schools, because a school is a set of literary characteristics that are shared in its formation by a group whose elements and orientations are similar in principles and expectations.

2- As for Taine, he delved deeply into this trend and exaggerated it to the point of extremism, attempting to eliminate all individual qualities; for there are no individual characteristics of a writer that distinguish him, but rather there are collective characteristics that unite writers; they are similar to the deterministic laws of nature, which govern without distinction, and these laws are:

1- Gender: This refers to the inherent, inherited characteristics of every nation descended from a single race.

2- Environment: It is the milieu in which individuals are raised and share a common life.

3- Time: Political, cultural and intellectual circumstances...and therefore it erased the originality of the writer and he is nothing but a copy of someone else.

3- As for Brunetière (1849-1906), he tried to apply Darwin's theory to literature and wrote in 1890 The Evolution of Genres. According to him, literary genres evolve from time to time just as living organisms evolve.

In the concept of scientific research: Language: The word "research" (بَحْثٌ) is derived from the past tense verb "to search" (بَحَثَ), meaning to seek, investigate, follow, inquire, question, discover, or search. Therefore, the linguistic meaning of scientific research is the investigation and inquiry into a fact or matter. The word "research" also has a general linguistic meaning: seeking, investigating, and examining something.

The word "search" in Arabic means "inspection." However, the English word means "inspection." "searching" refers to the careful examination and observation of the matter. Or it means the bright light with which darkness can be examined, as well as the search.

All these meanings point to the nature of scientific research, as it is a search for something unknown that requires raising all that can provide the researcher with useful information in the field of research.

Technically speaking: "It is a means of organized and precise inquiry and investigation carried out by the researcher for the purpose of discovering new information or relationships, in addition to developing, correcting or verifying existing information, provided that this precise examination and inquiry follows the steps of the scientific method."

Therefore, we can define scientific research as the use of scientific methods and techniques to arrive at new facts and verify their validity.

We can also define it as follows: "It is an attempt to discover knowledge, to explore it, develop it, examine it, and verify it with careful investigation and deep criticism, and then present it in an integrated manner with intelligence and awareness that keeps pace with global civilization and contributes to it in a comprehensive and living human way."

Others define it as a set of knowledge that arises from or is based on scientific observations of the regularities and stable states that phenomena and things go through in reality. This is with the aim of understanding their true nature and expressing them in the form of a scientific law.

Scientific research seeks to discover the truth about a particular subject and to understand the rules that govern it.

Conditions for scientific research: For scientific research to be of any real benefit, the following conditions must be met:

First: Defining the research objectives accurately and clearly.

Second: The researcher's ability to conceptualize and be creative, and to be familiar with research tools. The researcher may be able to "rely on more than one tool that can be useful in collecting data or in achieving the study's objective, according to the principle of methodological flexibility."

Third: Accuracy of observation and verification, meaning that the information the researcher relies on is accurate and its validity is verified. This may involve repetition and re-examination.

Fourth: Formulating hypotheses that explain the phenomenon identified by the researcher for his research. “The researcher usually sets the objectives of his study in the form of a question or a set of questions that vary in their degree of complexity in understanding the phenomena studied, according to the general direction of the research objectives.”

Fifth: The ability to collect scientific facts with transparency and credibility.

Sixth: Conducting the necessary experiments. “The more accurate the measuring instruments and methods used, the more accurate the results obtained will be.”

Seventh: Obtaining the results and testing their accuracy.

Eighth: Formulating theories.

Objectives of scientific research:

First: Description: Scientific research seeks to achieve descriptive goals, which are to discover specific facts that can accurately describe the phenomenon by collecting a lot of information.

Second: Prediction: "Prediction means anticipating future events in a manner similar to those that occurred in the past, according to certain conditions."

Third: Interpretation: Scientific research aims to explain and interpret phenomena. Interpretation is divided into purely explanatory research, which seeks to advance knowledge, and applied explanatory research, which yields practical solutions.

Fourth: Evaluation: It aims to evaluate the phenomenon and the extent to which its objectives have been achieved in order to identify the results.

Fifth: Refutation (Rebuttal): Scientific research seeks to accept a particular hypothesis by refuting or rejecting another hypothesis.

Sixth: Verification: The researcher conducts a study to verify the truth of a subject that has already been studied by another researcher.

Characteristics of scientific research: Scientific research is characterized by a set of features which can be summarized as follows:

- Rely on facts, not imagination or guesswork.
- Using scientific hypotheses in research, the results obtained become hypothetical results.
- Scientific research, in its study of phenomena, relies on analysis and the deduction of relationships...
- Scientific research relies on precise measurement...
- Scientific research is characterized by objectivity and freedom from emotion, sentiment, or bias...
- Scientific research is an organized activity based on a set of values, rules, principles, and methodological approaches...

Specifications for scientific research: Applying a sound scientific method that defines the boundaries of research from beginning to end lies in setting a suitable plan for the subject being

addressed in order to find a solution or solutions or to suggest them for it, or to open up fields for other research with different perspectives, means, methods and goals; through this, the dimensions of this phenomenon are identified and known and rediscovered.

The characteristics of the scientific method are:

1- Defining the research sample, which involves discussing the real reasons that led to addressing this part of the topic and not others.

2 - There should be a new incentive that encourages him to add, correct, complete, or invent...

3 - It should be characterized by novelty and depth, by being serious and thorough, and this should be evident through convincing results, revealing facts that were absent and hidden, and explaining what was ambiguous or closed...

4 - The selected sample must be suitable for scientific research, worth the effort, and arouse interest.

5 - It should be appropriate to the researcher's abilities, capabilities, and level.

6 - Adherence to the principle of scientific integrity, i.e., attributing all material he quotes to its original sources and origins.

7 - To be confident in his ability to demonstrate his scientific personality with politeness, dignity, and respect for the efforts of scholars.

8 - The research should be the fruit of his own effort, expressing his convinced ideas and his style stemming from his own explanation.

9 - To rely on experimentation based on observation, hypothesis, and re-creation....

10 - The research results should target both the general and the specific, i.e., serve humanity regardless of its circumstances, and work to develop research methods and skills through:

A- Our success in uncovering the secrets of this phenomenon makes it easier to understand and deal with better, and gives us the ability to visualize and imagine other emerging or potential changes. Through this true scientific knowledge, we can:

B - Our bold containment and control of it by daring to analyze it without fear and providing explanations and justifications for the phenomenon.

C - With our new approach, and the boundless efforts and innovations that follow...

D - By reorganizing, rearranging, and restructuring; in order to prepare the research anew....

e) By presenting it in a descriptive study to determine the limits of that phenomenon within the research frameworks studied.

And – or by presenting them according to the overall objectives that allow the researcher to infuse them with his ideas and philosophy of life

Z - Therefore, the researcher in this treatment relies on sources and references; which give him the legitimacy of serious and satisfactory scientific research and gain acceptance on the grounds of soundness, strength, seriousness and originality, because it targets the human demands that are desired from the research.

Types of scientific research:

First: The article: These are short research papers prepared by university students at the request of their professors. They aim to train students in organizing their thoughts and in using the library and its resources, and the paper may not exceed ten pages.

Second: The research project: It is usually called a "graduation thesis," and while it is a short research paper, it is more in-depth than an essay. Here, the researcher works with their supervisor to define the problem within a specific topic chosen by the student.

Third: The Memoirs: It is research conducted by a student to obtain a higher academic degree, usually a "Master's" degree.
Fourth: Theses To obtain the highest university degree, which is the PhD.
Stages of scientific research:
First: The topic selection stage: This is the process of defining the problem, and it is the most difficult and delicate stage. The research topic must meet both subjective and objective criteria.
Second: Searching for documents: This process is called "documentation," where the researcher gathers his scientific material related to his research topic (Abu Shanab,2002, Principles of Thought and Scientific Research, p. 175).
The documents are divided into two categories: original documents called sources, and non-original documents called references.
Third: The reading and thinking stage: Its purpose is to understand all the ideas and facts related to the research.
Fourth: The division and classification stage: This is a crucial process in research preparation, and the division process must be organized and arranged as follows: (Parts, Sections, Chapters, Sections, Subsections, Topics, Requirements, then: First, Second, Third... then: A, B, C... then1, 2, 3...)
Fifth: The writing stage: The final stage is the formulation and writing of the research in its final form, through announcing the research results and presenting the researcher's ideas, in addition to discovering new scientific theories and laws about the subject of the study.
In the concept of artificial intelligence: He knew him Marvin Lee Minsky said: “It is the building of computer programs that engage in tasks that are satisfactorily accomplished by humans, because they require high-level mental processes such as cognitive learning, memory organization, and critical thinking.” (Abdullah Musa, 2019, Artificial Intelligence: A Revolution in Modern Technologies, p. 20).
It is also defined as: "A set of devices or systems designed to mimic human intelligence in order to perform specific tasks based on the information they collect. Artificial intelligence is symbolized by (AI) is an abbreviation for Artificial Intelligence (Inas Abdul Rezzaq Ali, The Role of Artificial Intelligence in Scientific Research, Iraqi University Journal, Issue 16, p. 265).
Despite the clear benefits that artificial intelligence tools offer researchers in terms of output quality and speed of completion, researchers have a duty to adhere to ethical standards and scientific transparency. It is crucial to avoid infringing on the intellectual property rights of others. Furthermore, working with these advanced technologies requires a certain level of knowledge and expertise to adapt them responsibly to serve research objectives.
Given the importance of these issues and the vast potential offered by artificial intelligence tools, our research idea stemmed from analyzing and studying the characteristics and roles of these tools in supporting researchers, particularly in the social sciences and humanities. This study aims to provide a critical analytical perspective focusing on four main axes:
1. To become familiar with a selection of free artificial intelligence tools that social science and humanities researchers can use at various stages of their research.
2. Clarifying the objectives of these tools and their mechanisms of operation, in addition to the ways to benefit from them in all steps of preparing scientific research, such as formulating topics, planning methodologies, analyzing data, writing scientific reports, and building private databases.
3. To provide suggestions for enhancing the ability of researchers to use these technologies efficiently and improve their applied skills.

4. Highlighting the rules of scientific research ethics related to the use of artificial intelligence tools to ensure scientific integrity and preserve intellectual property rights.

The importance of this research lies in both its theoretical and applied aspects. Theoretically, the study sheds light on the growing role of artificial intelligence in scientific research, particularly in the social sciences and humanities, highlighting how to best utilize these tools while adhering to ethical considerations and scientific standards. Practically, the study serves as a comprehensive guide that researchers can rely on to understand and effectively use AI technologies, thereby enhancing the quality of their research and minimizing potential errors.

The core terminology of the study includes a detailed explanation of key concepts such as artificial intelligence and its tools, social and human research, and research ethics. Artificial intelligence is defined as a broad branch of computer science that uses advanced technologies and algorithms to simulate human understanding and perform complex tasks such as learning, analysis, and decision-making. Artificial intelligence tools, on the other hand, are specialized software programs used to plan and execute research activities with high precision.

In this context, the study illustrates the numerous possibilities of artificial intelligence and its practical applications in diverse fields such as medicine, education, transportation, and others. It also highlights human interaction with artificial intelligence through tools and programs that rely on text or voice to achieve a productive and seamless user experience.

In conclusion, the study emphasizes that enhancing knowledge of artificial intelligence tools and using them in accordance with the highest standards of integrity and scientific ethics are two essential pillars for the development of scientific research, especially that related to the social sciences and humanities, which in turn contributes to improving the quality of research output and enhancing our deeper understanding of human and social issues within diverse environments and cultures.

Artificial intelligence and research ethics: Addressing the ethics of artificial intelligence is more than just a philosophical concept; it is a clear necessity for regulating how we approach this term in practical applications. AI ethics aims to provide integrated ethical responses and address key situations that require an assessment of duties and responsibilities. Today, the main challenge lies in harmonizing existing ethical approaches to serve the common good, as AI software relies on systems theory as an ethical framework and requires the integration of diverse ethical concepts and responses to address emerging challenges.

Despite numerous efforts and initiatives, the proposed responses are still not comprehensive. Many professional bodies, regulatory institutions, and databases are dedicated to documenting and analyzing AI incidents, and some have already begun developing frameworks aligned with this technology. The key challenge is to coordinate these efforts transparently and critically, focusing on achieving tangible results that benefit society. In this context, regulations and legislation are expected to be pivotal, such as the proposed EU AI law. Furthermore, the establishment of specialized regulatory bodies could play a significant role.

In addition to policymakers at the national and international levels, many other stakeholders, such as universities, trade unions, the media, and civil society, need to play their part, as collective contribution is key to success. However, we should not expect quick or comprehensive solutions to all ethical issues; technology has added new layers of complexity to traditional ethical questions. It is important to recognize that the ethics of artificial intelligence are not entirely separate from the ethics of technology in general, but they do possess distinct characteristics that warrant in-depth study.

Ethical conditions for the use of artificial intelligence: raise The ethics of artificial intelligence (AI) have garnered significant global attention from international organizations such as the European Commission and UNESCO. The European AI Expert Group has identified four key principles to consider: respect for human autonomy, prevention of harm, fairness, and explainability. To implement these principles, seven requirements have been proposed for developing ethical AI applications:

- Ensuring human participation and monitoring
- Enhancing safety and technical durability
- Privacy protection and data management
- Enhancing transparency and accountability
- Considering the well-being of society and the environment
- Supporting diversity and non-discrimination
- Working towards achieving fairness
- Research ethics

Research ethics goes beyond being a set of theoretical rules; it encompasses the values, standards, and institutional procedures that govern scientific activity and reflect a commitment to best practices. Among the most important ethical principles to consider in the social sciences and humanities are:

- Commitment to the community
- Kindness and maximizing benefits
- Avoid conflicts of interest
- Ensuring informed consent
- Commitment to integrity
- Avoid discrimination and exploitation
- Respecting privacy and maintaining confidentiality
- Achieving professional competence and professional discipline.

The values and principles of research ethics form the ethical foundation that researchers must adhere to while conducting their studies and research. These principles aim to ensure the integrity and quality of research, while protecting the rights of participants and enhancing the credibility of the scientific community as a whole. Among the most prominent of these values and principles are:

1. Objectivity: It means committing to presenting the facts as they are, without distortion or bias, whether these facts support the researcher's point of view or contradict it.

2. Accuracy: It requires careful use of precise scientific methods in data collection and analysis, while ensuring that the results are free from errors.

3. Scientific: It emphasizes the importance of following a systematic scientific approach to obtain results, while adhering to all the necessary steps and procedures to complete the research.

4. Neutrality: It requires moving away from subjectivity and bias, while focusing on the pursuit of scientific truth with complete impartiality.

5. Significance: It requires providing sufficient evidence and proof to establish the validity of the results and support their accuracy and soundness. (Saeed Jassim Al-Asadi), 2008, Research Ethics in the Humanities, Educational and Social Sciences, p. 01).

In Algeria, the Ministry of Higher Education has established research ethics in an official decree aimed at combating plagiarism and unethical research practices. This decree includes a clear definition of plagiarism and its various forms, such as quoting without attribution, using data or ideas

without permission, and manipulating the attribution of scientific work. This is intended to ensure the integrity of research and maintain its credibility.

Academic assignments and the misuse of others' efforts in scientific research are complex but crucial topics when discussing research ethics. Some institutions exploit students or other participants to complete scientific projects, only to then use the work for publishing books, reports, or pedagogical materials without genuine involvement or due recognition. Similarly, some use student work for presentations at scientific conferences or on publishing platforms without ensuring integrity or providing prior notification. Furthermore, there have been instances of including experts' names to lend credibility without their consent or actual participation.

The qualities of a scientific researcher are not merely strengths that distinguish the individual engaged in scientific research, but also the cornerstone upon which the success of any study or research project rests. A researcher is not simply a collector of information, but someone who possesses the ability to organize, analyze, and present data in a logical and accessible manner that helps the reader understand the meaning and grasp the significance. This approach includes arranging ideas coherently and avoiding ambiguity or unnecessary detail.

Therefore, a scientific researcher is someone who constantly strives to discover knowledge and push its boundaries through in-depth research and rigorous investigation. To succeed in this task, they need a comprehensive set of qualities and skills, some of which can be summarized as follows:

1. Passion for the research topic: This is considered Choosing a research topic is a crucial step that can determine the project's success. When a researcher selects a topic that aligns with their academic and financial capabilities, they gain the advantage of in-depth research and the patience to face challenges and discouraging situations that may arise. A genuine passion for research is not merely a starting point, but a driving force that keeps the researcher committed to their journey until the end, contributing positively to overcoming obstacles and ensuring continued achievement.

2. Self-reliance and research competence: No The researcher's task is not limited to simply collecting and compiling information; they are also required to delve deeply into analyzing that information and deducing its deeper meaning. Research competence demands that the researcher be equipped with a combination of analytical skills and the ability to present results clearly and effectively. From this perspective, the researcher strives to make qualitative contributions such as creatively presenting new ideas, simplifying complex concepts, correcting existing errors, or even compiling and reorganizing disparate studies to place them within a coherent framework.

3. Accuracy of observation: One of the most important qualities a researcher must possess is the ability to observe all variables related to the problem under study and systematically track their development. Accurate observation does not simply mean recording details; it requires understanding contexts and connecting different factors. This type of observation is achieved through scientific methods such as formulating and testing hypotheses using precise tools, which distinguishes the researcher from others.

4. Ethics and scientific neutrality: Scientific research cannot be discussed without mentioning the professional ethics that govern researchers' work and ensure the integrity of their research. This includes a commitment to intellectual neutrality, honesty in citation and attribution, and avoiding unconstructive criticism or attacking others for the sake of fame or competition. Researchers should possess a sporting spirit that leads them to correct their mistakes without personal bias. Furthermore, a researcher's objectivity makes their findings more reliable and credible, especially if other researchers can reach the same conclusions using similar data and tools.

Therefore, academic integrity is a fundamental element of a researcher's work, requiring them to accurately attribute ideas and texts to their original authors, regardless of the size of their contribution. Adherence to these values ensures the credibility of the research and protects it from accusations of plagiarism.

The success of a scientific researcher is measured not only by the knowledge they produce, but also by how they produce that knowledge; in terms of analytical depth, smooth organization, and ethical commitment that fosters confidence in their findings. (Nasreddine Hissam: The Ethics of Scientific Research in the Age of Artificial Intelligence: (Application ChatGPT and the problem of scientific plagiarism, Qabas Magazine, Issue 01, 2024, p. 1171).

Definition of documentation and its importance: Documentation or bibliography is a word derived from Greek and means "writing books." In modern usage, it refers to the process of compiling lists of books, identifying their authors and subjects, and including all publication details. This process is undertaken by researchers after consulting lists of sources and references available in libraries and academic institutions.

How to record bibliographic information: The research must begin by listing the names of the sources, their authors, and publication details on index cards, with each card dedicated to a single source for easy reference. Researchers can use index cards for the following types of sources: books, encyclopedias, periodicals, manuscripts, dissertations, official documents, videos, legal sources, television programs, and interviews.

Books: The card designated for books must include the following data: the book number and its location, placed on the right side of the card, then the author’s name and title, and if the book has several authors, they should be mentioned in order as they appear in the book, then the book’s title, part, edition number if any, then publishing house, city, country, and year of publication.

Encyclopedias: Remember the following data: the title of the encyclopedia (underlined), the edition number, the article title in parentheses, the author's name, and the publication details.

Periodicals: These are periodical publications and are recorded in the following format: the author’s name, then the article title, then the magazine title, then the issue number, the magazine’s publication date, and the page number or pages allocated to the article.

Manuscripts: The following information is recorded regarding it: the author’s name, then the manuscript’s title in parentheses, the subject of the manuscript, the date of copying, the name of the country in which it is located, the name of the collection to which it is attributed and its number, and then its description if it is original or photocopied.

University theses: The following information should be recorded: the author's name, the title of the thesis in parentheses, the type of research, the name of the college, the name of the university to which it was submitted, and the date of the discussion (mention only the year).

Government documents: Its data is recorded in the following format: the name of the country, then the authority that issued the document, the type of document, and also the publication data.

Legal and regulatory texts: It includes: the name of the country, the name of the authority, the type of law, then the law number and date of issuance, then the number of the official gazette and its date of issuance in parentheses and the page numbers.

Judgments and judicial decisions: Her card includes the following data: the case title, the initials of the plaintiff and defendant, the name of the court or council, the name of the country, the case number, and the date in parentheses.

Talks and television programs: The following information is included: the speaker's name, the title of the talk in parentheses, then the channel name, the country name, and the date.
Personal interviews: Regarding it, it should be stated: The subject of the interview is underlined, then a period is placed, followed by the name of the person interviewed, their position, and then the place and date of the interview.
How to record citations in the body of a research paper: (Talal bin Mohammed Al-Muajjal: A guide to writing a research proposal for Master's and Doctoral theses,2005, p. 13.
- Documenting a quote from a well-known author and a known date:
-When quoting in the body of the research, the "author, date" method is followed, mentioning only the author's last name and the publication date. This can be formulated in three ways:
example:
-The weight of the redeemed ((1424 AH) Between the performance of teachers...
-A recent study examined teacher performance (the redeemed,1424 AH),...
In the yearIn 1423 AH, the esteemed scholar weighed the performance of teachers...
-Documenting a quote from an unknown author and a known date:
If the author is unknown while the date is known, as is the case with information from a webpage, the title can be used in abbreviated form within quotation marks instead of the author's name.
Documenting a quote from an unknown author and date:
If the author and date are unknown, as is the case with information from a webpage, the title can be used in abbreviated form within quotation marks instead of the author's name, followed by D.T. (i.e., no date).
Documenting a verbatim quote: This is done using several methods, as follows:
Documenting a verbatim quote longer than forty words:
If a direct quotation is longer than forty words, it should be placed in a separate paragraph without using quotation marks, five spaces from the original right margin of the text.
Documenting a quote from more than one author:
If the quotation is from a source authored by two people, their last name should be mentioned whenever a quotation is made from them.
If the quotation is from a work by three, four, or five authors, the last name of all is mentioned at the first quotation, then it is sufficient to mention the last name of the first one with the words “and others”.
If the quotation is from a work by six authors, it is sufficient to mention the last name of the first author along with the words “and others”.
Documenting the references: Immediately following the research chapters comes the list of references used by the researcher in the body of his research. The list of references is arranged according to the following guidelines, taking advantage of the guide issued by the American Association (APA) Fifth Edition:
-References are not numbered.
-References are arranged alphabetically by last name, ignoring the definite article (al-) in the order.
-The line spacing for a single reference is single (1 cm).
-The line spacing between each two references is double (2 cm).
-When a single reference is documented for more than one line, the other lines should be far (five spaces) from the margin of the first line.

Including the research in form and editing requires the researcher to exert organizational effort and linguistic accuracy, whether in preparing the plan (research project) or in writing the final research report, because scientific work requires that it appear in a form befitting the majesty of science and the value of its pursuit, and the status of its seeker, regardless of the level or scientific degree.

Methods of transferring and quoting information from sources and references(See: Mansour Naaman and Ghassan Dheeb: Scientific Research is a Craft and an Art)(1998, p. 61):

A- Methods of transferring information from sources:

The methods of transferring information from sources vary according to many considerations:

The objective, the importance, the speaker's significance, the occasion, and so on. Sometimes the situation calls for quoting the text in its entirety, and sometimes it requires shortening or rewriting it. The following is an explanation of these types and the appropriateness of each:

-The first Copying the text in full: The text is copied in full, without change, in the following cases:

-The text is from the Holy Book and the purified Sunnah.

If the author's expressions and words are of particular importance.

C- If the author’s expressions are effective, clear, and unambiguous.

D- The fear of distorting the meaning by adding or subtracting, especially if it is a subject of particular sensitivity.

E- In the sense of refutation and objection to the opponent, it is necessary to quote his words verbatim. In this type of transmission, it is necessary to take full care in transmitting the original text with its phrases, spelling marks, and even its mistakes. This mistake is addressed immediately by correcting it and placing it between square brackets [ ], or it is written as is, and then the word [thus] is written between square brackets.

In the case of quoting part of the text, it is necessary to ensure that the part taken from the text does not lead to a change in meaning, or distort the author’s intention.

The researcher must place the text in brackets here so as not to be accused of plagiarism.

the second Rewording: The researcher rephrases the ideas of the text in his own style. This is appropriate if the original text has a weakness in expression, a complexity in style, or a lack of comprehensiveness in the ideas. He should resort to rephrasing it with a stronger expression that encompasses the ideas he wants to present.

A slight change to some of the author's phrases or words does not mean reformulating them, nor does this justify attributing them to the writer.

The way to avoid such a thing is to read the part that he wants to rephrase, then close the book, and then begin to formulate those ideas in his own words and style.

the third Summarizing: This involves the researcher summarizing an entire topic or idea that has occupied a significant portion of the text, formulating it in their own style without being influenced by the author's original framework and wording. The primary concern here is preserving the core idea and main theme.

Fourth: Abbreviation: It was defined linguistically as: “Taking the middle of the speech, leaving its branches, and intending its meanings.” This means that the researcher reduces the expressions of the text to a third or a quarter in a very focused way, while preserving the author’s style, point of view, and using his expressions and words most of the time. All that the researcher does in the text here is delete the explanations, details, and everything that can be dispensed with in the text, and that the reader can understand without it.

In the second, third, and fourth methods mentioned above, the reference in the margin to the source is made with the word (refer to) or (see), then the author's name is written, then the book's title, then the pages. It has become customary for this word to indicate the writer's action in the transmission.

Fifth Explanation, analysis, and commentary: The researcher often finds himself faced with texts that need explanation and analysis to clarify their meaning and reveal their dimensions.

Sometimes, while reading the source, certain impressions, analyses, or comments may occur to him. It is helpful to write these down directly on the card where he recorded the information that produced those impressions or led to those analyses. The original text should then be indicated by placing it in brackets "..." to distinguish it from his own sentences and phrases.

Sixth Combining summarization, abbreviation, explanation, and quotation of the text: These types of transmission are combined with citing the text within the presentation, where the occasion requires it, such as when the researcher takes the text as an introduction to summarize, explain, and analyze an idea.

Seventh Outline: Sometimes the researcher finds himself compelled to summarize the content of a book, letter, or text, and put it in main headings with the intention of introducing it to the reader, or giving a quick idea of it; where mentioning the details is not important, or that it is not the appropriate place for them in the research.

In all these types and in all cases, it is necessary to refer to the source and to document the information scientifically as previously explained.

Methods of documenting sources and references: It is an essential part of academic research, helping to enhance credibility and respect intellectual property rights. According to Talal bin Mohammed Al-Muajjal's guide "Writing a Research Proposal for Master's and Doctoral Theses" ((2005), documentation methods are classified into three main categories: books, periodicals, and electronic sources. The following is an explanation of the types of these methods:

First - Documenting the books:

1. A book by a single author: The author's last name is given, followed by the first name, then the date in parentheses, followed by the book's title in bold, followed by the place of publication and the publisher.

Example: Al-Samiri, Latifa.1418). Models in Curriculum Development. Riyadh: Dar Alam Al-Kutub.

2. A book by two or more authors: The authors' names are mentioned in the same way, with the names separated by a semicolon.

Example: Al-Shafi'i, Ibrahim; Al-Kathiri, Rashid; and Sirr al-Khatim, Ali.1416). The school curriculum from a new perspective. Riyadh: Al-Obaikan Library.

3. Book of unknown authorship: It begins with the date, then the book's title in bold, followed by the remaining information.

Example: Teaching language expression to beginners. (T)3). (1992). Beirut: Library of Lebanon.

4. Undated book: The author is written, followed by the title of the book, then the place of publication and the publisher, without mentioning the date of publication.

Example: Quotb, Muhammad. Studies in Human Psychology. Dar Al-Qalam. No date.

5. Several works by the same author: They are arranged based on seniority in date, and if the date is repeated, it is separated by an alphabetical letter next to the year.

example:

Al-Muqawshi, Abdullah.1412 AH, a) . Measuring abstract thinking... King Saud University Journal. Volume 4 (1). 1-21.

Al-Muqawshi, Abdullah.1412 AH, b). Measuring abstract thinking... King Saud University Journal. Volume 4 (1). 179-198.

6. A book authored by an organization or association: The organization's name is mentioned instead of the author's.

Example: The Saudi Association for Educational and Psychological Sciences.1425). Child Rearing (2nd ed.). Riyadh: King Saud University.

7. A book in a non-first or expanded edition: The edition was indicated in the documentation.

Example: Badi, Ghassan.1982). Epistemology of Teaching Arabic to Speakers of Other Languages. (4th ed.). Beirut: Dar Al-Ilm Lil-Malayin.

8. A book in multiple volumes: The documentation refers to the volume number and its title.

Example: Ministry of Education.1423). Encyclopedia of the History of Education in the Kingdom of Saudi Arabia in One Hundred Years. Volume One. Biographies. (2nd ed.). Riyadh.

9. Unpublished academic thesis: University and department details are added.

Example: Al-Kathiri, Saud.1419). The extent to which the objectives of teaching literary texts are achieved... Unpublished Master's thesis. Department of Curriculum and Instruction, College of Education, King Saud University: Riyadh.

10. Translator's work: The documentation includes the name of both the author and the translator.

Example: Taylor, Ralph.1982). Fundamentals of Curricula (translated by Ahmed Kazem and Jaber Abdel Hamid). Egypt: Dar Al Nahda Al Arabiya.

Second - Documenting the periodicals:

1. Research in a scientific journal:

Example: Al-Dihan, Muhammad.(1423 AH). An analytical study of the questions received... Message of Education and Psychology. 14, 1-34.

2. A working paper or research paper presented at a conference: The conference title and venue are added.

Example: Al-Shaya, Fahd.1425 (Dhu al-Qi'dah). Scientific output... A paper presented at the Faculty Development Symposium... Riyadh.

3. An article in a weekly magazine: It is sorted based on date and magazine.

Example: Abdullah, Muhammad.1425 AH (Shawwal 29). Teaching Skills. Research Paper. 112, 7.

Thirdly - Documenting electronic sources: The following should be observed in documenting references according to the type of each reference, with the addition of the date of retrieval from the Internet and the website address. If the reference is a journal article, then follow the following method: Last name, first name. (Year and month). Research title (in bold). Conference title. Country. Conference venue. Retrieved on [Hijri date] at the link [insert full link].

example:

Al-Nassar, Saleh.(2001). A study of the Vaughan scale developed to measure teachers' attitudes toward teaching reading in school subjects. A paper presented at the Reading and Knowledge Association Conference, Cairo. Retrieved on 1/11/1425 AH from the linkhttp://www.arabicl.org/seerah/Vaughan1.php

Fourth - Non-print documentation:

- Speech or lecture:

Last name, first name. (Year, month, day). Lecture title (in bold). [Explanatory information]. Newspaper name (in bold). City: Location.

Example: Al-Tariri, Abdul Rahman.1425 (Dhu al-Qi'dah 2). Opening remarks by the Dean of the College. Delivered at the Symposium on Faculty Development in Higher Education Institutions: Challenges and Development. Riyadh: King Saud University.

Fifth: Documenting foreign references: The same style used in writing the Arabic bibliography is followed when writing foreign references. Below are some examples of writing foreign references:

Books:

Alhassan, R. (2004). The effect of assigned achievement goals, self-monitoring, interest in the subject matter, and goal orientations on students' computer skill achievement, use of learning strategies, and computer self-efficacy beliefs (Doctoral dissertation, The Florida State University, 2004).

Article obtained from the internet or a full-text database:

Bean, J., & Kuh, G. (1988).The relationship between author gender and the methods and topics used in the study of college students. Research in Higher Education, 28 (2), 130-144.

Dissertations:

Electronic Information:

Gall, M., Borg, W. & Gall, J. (1996). Educational research: An introduction. 6th Ed. New York: Longman.

Journals:

Monson, M. (1993, September 16). Urbana firm obstacle to office project.The Champaign-Urbana News-Gazette, pp. A1, A8.

Newspaper articles:

Stemler, S. (2001).An overview of content analysis.Practical Assessment, Research and Evaluation, 7 (17).[Available online]. Retrieved April 1, 2002

fromhttp://ericae.net/pare/getvn.asp?v=7&n=17Unpublished Thesis or Dissertation:

Technological developments and the impact of artificial intelligence on scientific research: The study demonstrated that artificial intelligence tools have become valuable assets that can help researchers collect and analyze data and access accurate and comprehensive reference sources. However, the researchers caution against using these tools carelessly, as their effectiveness remains limited by the quality of the researcher's own input. To maximize the benefits of these tools, instructions must be clear and precise, keeping in mind that they are not a comprehensive solution but rather helpful aids.

The use of artificial intelligence in social science and humanities research: a revolution in understanding society and humanity. In recent years, artificial intelligence (AI) has become a force to be reckoned with, revolutionizing various fields, including the social sciences and humanities. Integrating AI technologies into these disciplines has provided researchers with unprecedented advanced tools for data analysis and understanding complex human phenomena. Here, we highlight some of the key functions and tasks of AI applications that enrich these diverse fields:

- **Text, image, and video analysis: A gateway to deeper understanding:** One of the most prominent roles of artificial intelligence in the social sciences and humanities is its exceptional ability to analyze texts and documents, whether books, articles, or other written materials. AI can extract essential information and understand the ideas and concepts associated with this data, thus facilitating research tasks for academics and thinkers.

In the realm of images and videos, artificial intelligence has advanced significantly in its ability to understand visual content with precision. It can analyze facial expressions, interpret emotions, movements, and behavioral patterns, opening new avenues for studying social interactions and human behavior.

- **Data analysis and modeling of human behavior with deeper and more accurate insights:** Artificial intelligence has the ability to handle and analyze massive amounts of data effectively. This capability gives researchers the opportunity to identify social and cultural patterns and analyze trends within societies in ways that were previously impossible.
  In addition, artificial intelligence is used to create models of human behavior to simulate various social situations. Through these models, scientists can analyze social relationships and link them to specific effects, thus enhancing our understanding of human interaction and placing it within its broader context.
- **Predictive modeling and strategic planning:** One of the most notable advantages of artificial intelligence applications is predictive modeling, which relies on analyzing historical data to forecast future behaviors. These technologies play a significant role in policy planning and decision-making. Governments and organizations can depend on them to make informed decisions to address potential social challenges.
- **Analysis of public sentiment and opinion:** Gaining insight into societal sentiment: Artificial intelligence's natural language processing techniques enable the precise analysis of emotions, allowing for an understanding of public opinion trends on specific issues. Whether related to political affairs or cultural events, these tools help researchers grasp the factors that shape societal consciousness and influence public discourse and its direction.
- **Between neuroscience and psychiatry:** Interestingly, artificial intelligence is becoming a bridge between the humanities and natural sciences, with neuroscience leveraging its capabilities to analyze brain data. This helps to unravel the mysteries of nervous system disorders and understand subtle mental processes, significantly contributing to advancements in fields such as psychotherapy and the diagnosis of mental illnesses.
- **Transformations in personalized medicine and healthcare:** In the field of personalized medicine, artificial intelligence plays a prominent role in analyzing genetic data and designing customized treatment plans based on each individual's characteristics. This approach not only improves the effectiveness of treatments but also delivers a healthcare experience based on a deeper understanding of patients' needs.
- **Social robots and human interaction with technology:** Social robots powered by artificial intelligence enhance researchers' ability to study how humans interact with modern technologies. These robots are used in education, therapy, and social support services to provide innovative solutions to the challenges facing modern societies.
  Therefore, the path for AI applications in the social sciences and humanities remains full of promising potential. These tools not only provide new mechanisms for analyzing and understanding human behavior, but also contribute to shaping a future based on a deeper understanding of individuals and societies.
  The social sciences and humanities have faced difficulties in dealing with complex systems, as traditional mathematical methods are hard to use in modeling the general behaviors of these systems.

Specialists in these fields have encountered significant challenges in formulating comprehensive equations for social frameworks, which are often characterized by complexity.

Artificial intelligence (AI) technologies have revolutionized this field, enabling the use of automated search tools and intelligent data analysis for a deeper and more comprehensive understanding of social interactions. AI applications in this area are diverse, encompassing numerous activities, including:

1. AI-Assisted Scientific Review and Peer Review: The review and peer review process faces significant challenges due to the rapid and massive increase in the number of scientific reports submitted to journals. This growing volume has led to increased pressure on reviewers and a decrease in their available time. By using artificial intelligence tools, such as automated plagiarism detection systems and formatting compliance systems, the efficiency of these processes can be enhanced, and human decision-making can be supported to improve review quality and ensure accuracy.

2. Social data analysis: Artificial intelligence is employed to analyze huge amounts of social data obtained from social media platforms, with the aim of understanding societal trends and studying interactions between individuals.

3. Machine learning in social research: Machine learning techniques are used to accurately analyze research data, enabling researchers to extract complex patterns and identify unclear relationships in social phenomena.

.4. Social Behavior Modeling: Artificial intelligence techniques are used to create predictive models that seek to understand social behavior by analyzing and interpreting the interactions of individuals within specific communities.

Benefits and ethics of using smart devices: Artificial intelligence has led to a radical transformation in many fields, including scientific research, where it has significantly contributed to improving the methods and processes used. Scientific research has benefited from advanced AI technologies and applications in numerous aspects (Nasreddine Hissam: The Ethics of Scientific Research in the Age of Artificial Intelligence: Application).ChatGPT and the problem of scientific plagiarism, p. 1176.):

1. Providing an overview of the topic: This helps researchers review the literature by gathering information from multiple sources, saving time and effort. By entering keywords related to the study topic, the form can generate a list of directly relevant articles and studies.

2. Formulating research questions or hypotheses: Using big data provided to AI applications, researchers can input key concepts and any available information about the research topic. The program then uses this information to generate a list of potential research questions or hypotheses relevant to the field.

3. Creating an outline for the research paper: When the application is provided with the suggested main ideas and themes, the model can prepare an organized outline for the research that includes sections such as the introduction, methods, results, sub-themes, and conclusion, which contributes to organizing the paper in a tight manner.

4. Automated summarization and automatic content generation: This technology provides an effective way to save time by summarizing books and scientific articles and extracting the most important points in a concise and focused manner.

5. Statistical Analysis: Artificial intelligence is employed in the analysis of statistical data, which helps researchers interpret results effectively and make new and important discoveries based on the available data. Employing prediction techniques contributes significantly to anticipating potential results and monitoring future trends within various academic fields.

6- Expectations and predictions: Prediction techniques can be relied upon to deduce expected results and explore trends that may prevail in various academic fields, thus contributing to guiding research efforts effectively.
7- Automated classification: Also known as AI bibliography, this is used to classify scientific research and academic papers based on subject and scientific field. These techniques help clarify the connections between related articles, thus supporting the preparation of comprehensive and integrated research.
Forms and types of scientific plagiarism: In the world of scientific research, integrity and ethics are essential elements for ensuring the credibility of science and the sustainability of human progress. Despite this importance, plagiarism emerges as one of the most prominent ethical challenges facing the academic and research community, threatening the very essence and principles of science. This unethical behavior takes many forms, the most common of which are:
1. Copy and paste: This type is known as plagiarism, and it is the most widespread form of academic theft. It involves copying texts, paragraphs, or even sentences verbatim from other sources without citing the original source, which is a blatant violation of intellectual property rights.
2. Word replacement: This form refers to paraphrasing texts by changing some words while maintaining the basic sentence structure. This might appear as simply replacing two or three words with synonyms without any real originality.
3. Using metaphors: This type of plagiarism includes stealing visual or illustrative elements such as images, examples, diagrams, and tables without attribution. Although these elements are commonly used for explanation and illustration, they remain the property of their respective owners.
4. Stealing ideas: This type of plagiarism is considered one of the most serious forms because it goes beyond using texts to appropriating ideas themselves. It occurs when a researcher uses others' ideas, rephrases them, or presents them as their own, completely ignoring the source from which they were inspired.
Understanding these different types of plagiarism and being aware of their ethical and legal consequences helps to promote research integrity and ensure that knowledge develops in a way that respects the rights of all researchers. (Fatima Ibrahim et al., Plagiarism and the Law in the Digital Environment, International Journal of Informatics, Media and Communication Technology, Issue 01, 2020, p. 103.)
Researchers' views on the uses of artificial intelligence in scientific research: Artificial intelligence programs continue to generate debate regarding the ethics of their use in scientific research. While some researchers see them as powerful tools that provide valuable guidance and contribute to advancing knowledge, others express concerns about the ethical aspects associated with their use, such as privacy violations and copyright infringements. Below are some perspectives on the use of artificial intelligence programs in this field.
Guillaume Cabanac, a professor and researcher in computer science, suggests that the use of artificial intelligence could be considered a form of plagiarism. This is due to the clear imprint of this application in many studies, such as the common phrases associated with it.
Cabanak discovered these fingerprints in more than one12 studies. He explained that the presence of such fingerprints leads to two main problems: doubt about the quality of the research review process, and neglect of academic standards related to scientific research (Badr Hazem, “Chat GPT fingerprint”: Researchers left behind evidence of their crime, 09/18/2023, https://www.aljazeera.net/science/2023/9/18/).

On the other hand, a study was published in MarchA 2023 study by Brady D. Lund, in collaboration with other researchers, titled "ChatGPT and a New Academic Reality: AI-Written Scientific Research and the Ethics of Massive Linguistic Models in Scientific Publishing," concluded with a number of important findings, including:
- The language models upon which artificial intelligence is based represent, such asChatGPT is a major threat to the integrity of scientific research.
- These models rely on massive amounts of data collected primarily from the internet, which may lead to clear biases in their content.
- produces ChatGPT sometimes gives responses that seem convincing but may be entirely fabricated, a phenomenon known as "AI hallucinations".
- In some cases, the program created academic articles without any scientific review.
This ongoing debate highlights the need to reassess the use of artificial intelligence tools in academic research to ensure a balance between utilizing them and maintaining standards of scientific integrity. Science magazine sees (Science magazine argues that any manuscript produced by an artificial intelligence program would constitute "scientific misconduct, no different from plagiarism," and that scientific publishing should remain exclusively a "human endeavor." This stance extends beyond scientific journals to universities as well; in February 2023, the University of Hong Kong banned its use by students, deeming it equivalent to plagiarism.
But are these fears justified, or are they an exaggerated reaction? History shows that whenever a potentially disruptive technology is envisioned (Disruptive technology faced significant resistance to its adoption. For example, Edison's invention of the electric light bulb was not welcomed but ridiculed by a British parliamentary committee in 1878, which deemed it "unworthy of the attention of practical and scientific men." Similarly, Lord Calvin, president of the Royal Society in 1883—one of the world's oldest scientific bodies—erred when he declared, "We shall prove that X-rays are a hoax." These historical examples may indicate that history is repeating itself.
The issue of copyright ownership for AI-generated content is complex and requires careful consideration by both legal experts and policymakers. This is because large language models are becoming increasingly sophisticated and capable of generating content indistinguishable from human writing. Therefore, the issue of intellectual property rights for the resulting content is becoming increasingly urgent.
In the field of scientific research, the authorship and accountability of AI-generated content, along with legal issues, can create headwinds. There is a lack of transparency and traceability regarding data sources, and ethical considerations such as copyright may be overlooked to ensure responsible and ethical use in academic publishing. A scientific study published in March warns of this.In 2023, it was noted that AI-driven language models like ChatGPT pose a significant threat to the integrity of science. These models are trained on massive amounts of data, primarily from the internet, which can lead to data bias. In this case, if the data source is biased or incomplete, this bias will be reflected in the model's output. Furthermore, its responses can sometimes be convincing but entirely fabricated—a phenomenon known as AI hallucination. In other words, hallucination refers to the generation of outputs that may seem plausible but are either incorrect or irrelevant to the specific context. For example, ChatGPT has produced academic articles without references, which can disrupt scientific publishing and undermine the integrity and credibility of research.
To address these concerns, it may be necessary to develop legal frameworks and guidelines that take into account the challenges posed by AI-generated content. This could involve clarifying existing

copyright laws to accommodate the use of machine learning algorithms and training data, or creating new regulations to ensure that AI-generated content is properly attributed.

Chat GPT can significantly impact academia and scientific research. It is crucial to consider the ethical implications of this technology, particularly concerning its use by researchers and academics. We suggest that collaboration among researchers, publishers, and language model developers could be beneficial in establishing guidelines that ensure the responsible and transparent use of such technologies. The absence of such policies will undermine trust in the scientific process, potentially leading to far-reaching consequences for future research and innovation (Muath Mohammed, Chat GPT and Scientific Publishing: Ethical Considerations).04/26/2023, 0-5-32317-detail-https://arsco.org/article.).

Najwa Al-Badri, the founding president of the Biomedical Sciences program at Zewail City University of Science and Technology in Egypt and director of the Center of Excellence for Stem Cell and Biomedical Research, believes that the application ChatGPT can be a useful tool for researchers. In a practical experiment, Al-Badri divided her students into two groups: she asked the first group to write a research review using ChatGPT, and the second group to write the review using traditional methods. The results showed that the group that used ChatGPT was more organized and consistent in their writing, demonstrating their proficiency in formulating questions to effectively utilize the application.

Al-Badri explained that the use ChatGPT can compromise the integrity of scientific research if misused. However, it can also be considered a valuable tool for gathering information that researchers can analyze and interpret in their own words. Based on these observations, it can be concluded that using the software in scientific research raises ethical concerns about integrity. When generating content, it relies on prior data from multiple sources, often without direct attribution. This, in turn, can lead to copyright infringement, making the resulting research more akin to plagiarism.

On the other hand, it can be viewed asAI is considered an effective tool, providing rich and comprehensive information that helps researchers develop their ideas, pose new questions, and obtain quick answers. Therefore, the tool's importance lies in how it is used and directed correctly within the scientific research process.

What to do if Despite the numerous advantages that artificial intelligence (AI) and AI models offer in scientific research—from providing access to vast amounts of data and enabling in-depth analysis to delivering accurate results and interpretations—these technologies also face a number of challenges and issues that cannot be ignored. Among the most prominent of these challenges, we can highlight the following (Nasreddine Hissam: Research Ethics in the Age of Artificial Intelligence: ApplicationChatGPT and the problem of scientific plagiarism, p. 1180):

Privacy and security: The use of artificial intelligence technologies involves processing large amounts of personal data belonging to students and researchers, raising concerns about privacy protection and security.

- Excessive reliance on technology: Over-reliance on artificial intelligence may reduce users' critical thinking, self-learning, and creativity skills.

- AI bias: As AI tools continue to be used with the same existing mechanisms, pre-existing biases in the stored data can be reflected, resulting in a repetition of the same unfair and unjust solutions and proposals.

- Accuracy of information: It relies on a dataset covering all periods up to the present. Therefore, it may not be up-to-date on scientific events or discoveries, making it essential for researchers to verify the accuracy of the information based on its outputs.

- Generating reliable content: canAI produces diverse content, but it may include inaccurate or unreliable information. Therefore, researchers must verify information sources before using them in their research.

- Consider the context: suffersAI sometimes has limitations in accurately understanding context, which can lead to incorrect or out-of-context answers. Therefore, researchers must be careful when formulating questions and ensure they are clear to avoid ambiguity.

These challenges present opportunities for addressing them and offering solutions. For example, sufficient initial investment and improved infrastructure are crucial to ensure the successful implementation of artificial intelligence (AI) in education and scientific research. Furthermore, stringent policies and procedures must be implemented to protect data privacy and safeguard it from exploitation and manipulation. A balance must be struck between AI and critical thinking by encouraging students and researchers to use AI as a tool for learning and research while preserving their critical and analytical abilities. Higher education institutions and research centers must also establish controls to monitor bias and ensure the fair and objective application of AI to avoid problems of bias and the duplication of solutions to evolving and contemporary problems. Developing future skills and updating curricula and training programs to align with AI advancements and prepare students and researchers to adapt to the changing job market is also essential. Finally, it is vital to ensure that technology and AI are used in education in a way that preserves human relationships between teachers and students. Complete reliance on technology and AI at the expense of human interaction and direct communication between researchers and learners must be avoided.

Undoubtedly, by addressing these challenges appropriately, higher education institutions and research centers can maximize the benefits of artificial intelligence and enhance the educational process and scientific research within a suitable framework that upholds fairness, equality, privacy, transparency, and ethical responsibility. (Walid Mohsen Abdel Aziz, Artificial Intelligence and its Impact on Higher Education and Scientific Research 05/04/2023AD,
https://www.albiladpress.com/news/2023/5346/columns/811212.html).

conclusion:

This research paper focuses on the importance of using these tools ethically and responsibly, adhering to standards of scientific integrity. Researchers should treat artificial intelligence as a tool to enhance the quality of their work, rather than relying on it entirely.

The use of artificial intelligence tools remains acceptable and beneficial as long as it adheres to the principles of scientific integrity and research ethics. The researchers emphasize that promoting their cautious use enhances their reliability without replacing traditional research methods. This trend toward integrating technology with science contributes to building a more comprehensive and effective research methodology.

The paper provides a detailed list of free tools that researchers can utilize, along with links to facilitate access to them. It serves as an important scientific guide for researchers, particularly in the humanities and social sciences. Despite the continuous development of applications and tools, responsible and ethical use remains central to this development in order to achieve sustainable and equitable scientific progress.

Artificial intelligence tools are among the most prominent technological achievements the world has witnessed in recent years, becoming a fundamental pillar contributing to tangible progress in various aspects of life. Among the fields particularly affected are scientific research, including the social sciences and humanities. AI-based tools enhance the efficiency of researchers in conducting their studies at all stages, from developing research ideas to evaluating results and formulating recommendations, effectively and accurately while reducing effort and time.

In Algeria, the Ministry of Higher Education and Scientific Research has established a program to protect researchers and their ideas from plagiarism and breaches of documentation integrity. DETECTIA is made available to researchers to determine the plagiarism rate in accepted articles and dissertations. Any research exceeding a certain percentage will be rejected or its author asked to revise. This contributes to the development of scientific research.

Research Library:

1. Gamal Mohamed Abu Shanab, Principles of Thought and Scientific Research, Dar Al-Maarefa Al-Jami'iya, Alexandria.2002..
2. Abdullah Musa, Habib Bilal Ahmad, Artificial Intelligence: A Revolution in Modern Technologies, Egyptian National Library, 1st Edition1, Egypt, 2019 AD.
3. Inas Abdul-Razzaq Ali, Yassin Taha Sari, The Role of Artificial Intelligence in Scientific Research, Iraqi University Journal, Volume02, Issue 16.
4. Saeed Jassim Al-Asadi, Ethics of Scientific Research in the Humanities, Educational and Social Sciences, Warith Cultural Foundation, Iraq.2008 AD.
5. Nasr al-Din Hisam: The Ethics of Scientific Research in the Age of Artificial Intelligence: ApplicationChatGPT"The Problem of Scientific Plagiarism," Qabas Magazine, Issue01, Volume 08, June 2024.
6. Talal bin Mohammed Al-Muajjal: A Guide to Writing a Research Proposal for Master's and Doctoral Students, King Saud University, 1st Edition1, 2005 AD.
7. -See: Mansour Naaman and Ghassan Dheeb: Scientific Research: A Craft and an Art, Dar Al-Kindi Publishing, ed.1-1998, Irbid, Jordan.
8. See: Talal bin Mohammed Al-Muajjal: A Guide to Writing Research Proposals for Master's and Doctoral Theses, King Saud University Publications, Riyadh, Saudi Arabia.2005 AD.
9. Fatima Ibrahim et al., Scientific Plagiarism and the Law in the Digital Environment, International Journal of Informatics, Media and Communication Technology, Beni Suef University, VolumeIssue 02, Issue 01, 2020 AD.
10. Badr Hazem, the "GPT chat fingerprint"... Researchers left behind evidence of their crime.18/09/2023https://www.aljazeera.net/science/2023/9/18/ browsing historyFebruary 2, 2025.
11. Mu'adh Muhammad, "GPT Chat" and Scientific Publishing: Ethical Considerations,26/04/2023, 0-5-32317-detail-https://arsco.org/articleBrowsing historyFebruary 2, 2025.

Walid Mohsen Abdel Aziz, Artificial Intelligence and its Impact on Higher Education and Scientific Research,04/05/2023 AD,https://www.albiladpress.com/news/2023/5346/columns/811212.htmlbrowsing historyFebruary 2, 2025