



***Opportunities and Challenges of Using Artificial Intelligence in  
Scientific Research: A Field Study on a Sample of Media and  
Communication Students at Blida 2 University***

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Received: 09 / 02 / 2026

Accepted: 11 / 05 / 2026

Published: 30 / 05 / 2026

**Abstract:**

Our study aimed to identify the most important opportunities and challenges in using artificial intelligence (AI) in scientific research. We also tried to explore the best ways to improve its use in academic research. We relied on the descriptive–analytical method, and we chose the research population from students at Blida 2 University. The study sample was selected using purposive sampling, and the questionnaire was used as the data collection tool. We reached several findings, including: students rely on AI only as a supporting tool and not as a substitute for learning. The benefit of using AI in scientific research is due to the ease of finding different sources and references. We also concluded that the marginalization of critical thinking is one of its biggest risks.

**Keywords:** Use; Artificial Intelligence; University Students; Scientific Research; Benefits; Drawbacks.

## I. INTRODUCTION

The world today is witnessing widespread development in many fields, especially in modern technology. This technology has helped transform societies and has become an effective tool for making people's lives easier. A major branch of this development appeared with the rise of information and communication technologies, which created a qualitative shift in how individuals communicate and accelerated the spread of news and exchange of knowledge.

With this broad technological progress, what is known as artificial intelligence has emerged. AI is one of the newest innovations today, and it is now used in all administrative and scientific fields, including medicine, education, economy, and even scientific research and academic learning. It helps machines and programs think and make decisions in a way that resembles human thinking.

AI tools are considered among the most important modern technological innovations. Relying on them has become essential in all fields because they are easy to use and offer many advantages especially in scientific research, which has become one of the most important ways to produce knowledge and analyse data. With the continuous development of these technologies, many university students have come to depend on them heavily in their academic work. This dependence increases research skills effectiveness and helps provide new solutions to the challenges found in traditional research.

However, despite its benefits, relying on AI in student scientific research remains a topic that requires in-depth study, comparing its advantages and disadvantages. This is especially important regarding its impact on the quality of academic research, students' intellectual independence, the loss of originality, and the risk of plagiarism. For this reason, our study focused on the advantages and disadvantages of AI use among Blida 2 University students in their scientific research, and on the effective ways students should follow to improve their use of AI in meaningful and responsible ways.

Based on what has been presented, the main research question is: **What are the most important ways of employing artificial intelligence in scientific research among students of Media and Communication Sciences at Blida 2 University?**

### 1. Study Questions

- What are the benefits of using AI tools by university students in scientific research?
- What are the main challenges resulting from students' use of AI in scientific research?
- How can the use of artificial intelligence in scientific research be improved?

### 2. Study Objectives

- To identify the main challenges and drawbacks faced by Blida 2 University students when using AI in scientific research.
- To identify the key benefits and advantages students gain from using AI in scientific research.
- To determine the most important solutions and suggestions that can be used to improve AI use in scientific research.

### 3. Significance of the Study

This study is important because the reliance on AI is rapidly increasing, especially in scientific research. AI helps researchers analyse data and predict results. Studying AI also helps us better understand its strengths and weaknesses in academic research and the main methods used to improve its application.

### 4. Study Concepts

#### 4.1. Use

The concept of "use" refers to any social action that turns into a normal activity in the social environment through repetition and continuity (Rais, 2016, p. 191).

**Operationally:**

We mean by “use” here the extent to which media and communication students at Blida 2 University rely on AI tools in their university research and use them as a main source for searching.

**4.2. Artificial Intelligence**

AI is defined as a branch of science capable of performing tasks related to human intelligence, such as problem-solving, increasing knowledge, and planning (Jarboua, 2023, p. 344).

**Operationally:**

We mean the use of artificial tools such as ChatGPT and others to search for scientific sources.

**4.3. Scientific Research**

Scientific research is defined as a deep and precise study of an issue facing society in any field whether human, social, natural, or technological (Al-Obaidi & Al-Obaidi, 2010).

**Operationally:**

We mean all sources available online, including books and articles that students search for using AI applications.

**4.4. University Students**

Dr. Mohamed Ali Mohamed defines university students as “a group of educated individuals in society, with hundreds or thousands of youths present inside higher education institutions” (Brahmi, 2023, p. 285).

**Operationally:**

We mean media and communication students at Blida 2 University, who were the subjects of our study.

**II. Methods and Materials:**

**1. Research Method**

Scientific research methodology is defined as any approach a researcher relies on to study a general phenomenon, through which the research problem can be (Mahmoudi, 2019, p. 35).

To address the topic of our study, we relied on the descriptive-analytical method, which is defined as an approach used to describe the phenomenon under study using a correct scientific process in order to reach a deeper understanding and develop a strategic plan related to it (Mahmoudi, 2019, p. 46).

This study aims to describe how students of Media and Communication Sciences use artificial intelligence in their academic research, and to analyse its main benefits and challenges.

**2. Study Population**

Researcher Obeidat defines a study population as “all the units that the researcher studies in order to reach the results of the research; it represents a large and specific group of individuals” (Hamidani, 2024, p. 1124).

The population of our study consists of students of Media and Communication Sciences at Lounici Ali University in Blida.

**3. Study Sample**

For the study sample, we selected a purposive sample, in which the researcher intentionally chooses the units of the study based on certain factors such as personal experience and cost-efficiency (Hamidani, 2024, p. 1175).

We chose purposive sampling because not all students use artificial intelligence in their academic research. This required us to carefully select our participants. We first questioned students before giving them the questionnaire to make sure they actually use AI tools in research. Based on that, we selected 100 participants who use AI.

#### 4. Data Collection Tools

Data collection tools are used in scientific research to help researchers gather information about a specific topic. In our study, we used the questionnaire, which is defined as a set of varied questions designed according to the themes of the study and distributed either manually or electronically (Al-Hamza & Al-Bar , 2023, p. 304).

We distributed the questionnaire to a group of students—100 in total—and all questionnaire items were answered. We divided the questionnaire into four sections:

- a. Section one: personal information
- b. Section two: benefits of using AI tools in academic research
- c. Section three: major challenges resulting from the use of AI in academic research
- d. Section four: ways to improve the use of AI in academic research

#### 5. Study Results

##### 5.1 Presentation and Analysis of Results

**Table (1): Gender**

|        | Frequency | Percentage |
|--------|-----------|------------|
| Male   | 35        | 35%        |
| Female | 65        | 65%        |
| Total  | 100       | 100%       |

From Table 1, it is clear that the largest percentage 65% is female, while males represent 35%.

We conclude from the table above that the percentage of female students is higher. This is because female students tend to prefer continuing their studies and joining universities, unlike many male students who prefer to start working after obtaining the baccalaureate.

**Table (2): Age**

| Age group      | Frequency | Percentage |
|----------------|-----------|------------|
| 18-21 years    | 32        | 32%        |
| 22-24 years    | 55        | 55%        |
| Above 25 years | 13        | 13%        |
| Total          | 100       | 100%       |

From Table 2, it appears that 55% of the students are between 22 and 24 years old.

This is followed by 32% who are between 18 and 21 years old. The remaining 13% are students older than 25.

We conclude from the table that the 22–24 age group is the largest. This shows that most students in this age range are enrolled in Licence and Master programs, and many students at this age join university directly after obtaining the baccalaureate.

**Table (3): Academic Level**

| Level   | Frequency | Percentage |
|---------|-----------|------------|
| Licence | 37        | 37%        |
| Master  | 63        | 63%        |
| Total   | 100       | 100%       |

From Table 3, it is clear that 63% of the students are in the Master level, followed by 37% in the Licence level.

We conclude that the majority are Master students. This is mainly because there are many specialties available at the Master level, which increases the number of students compared to Licence programs. Also, Master students tend to rely more on artificial intelligence in their research than Licence students.

## **Second Section: Benefits of Using AI Tools in Scientific Research**

**Table (4): Using AI in All Academic Research**

| Response  | Frequency | Percentage |
|-----------|-----------|------------|
| Always    | 80        | 80%        |
| Sometimes | 12        | 12%        |
| Rarely    | 08        | 08%        |
| Total     | 100       | 100%       |

From the table above, we see that 80% of students always rely on artificial intelligence in their academic research. Meanwhile, 12% use it sometimes, and the remaining 8% use it rarely.

We conclude that AI is used in almost all academic research because it is easy to use and offers access to many sources such as books and articles, which facilitates the research process. It also helps researchers save time. In the past, a student had to make a huge effort by visiting libraries and searching many websites. Now, with a few typed words, students can quickly access diverse information.

**Table (5): Benefit of Using AI in Scientific Research**

| Benefit                          | Frequency | Percentage |
|----------------------------------|-----------|------------|
| Obtaining accurate results       | 20        | 20%        |
| Facilitating scientific research | 71        | 71%        |
| Helping in data collection       | 08        | 08%        |
| Facilitating academic writing    | 01        | 01%        |
| Total                            | 100       | 100%       |

From the table above, 71% say that the main benefit of using AI in their research is that it makes scientific research easier. Meanwhile, 20% believe the benefit is obtaining accurate results. Another 8% say AI helps in collecting information, and the remaining 1% say it facilitates academic writing.

We conclude that AI is beneficial in scientific research because it makes it easier to search for different sources and references, saves time, and summarizes complex scientific papers. It can also generate ideas and information for new topics and supports the researcher in academic writing. Additionally, it helps obtain accurate results through applications such as Research Rabbit, which quickly identifies research related to a specific topic.

**Table (6): The Most Useful AI Applications in Your Scientific Research**

|                   | Frequency | Percentage |
|-------------------|-----------|------------|
| Literature Search | 00        | 00%        |
| Google Scholar    | 04        | 04%        |
| Big Data          | 00        | 00%        |
| ChatGpt           | 96        | 96%        |
| and Review        | 00        | 00%        |
| Total             | 100       | 100%       |

From Table 6, it is clear that 96% of students say the most useful AI application in their scientific research is ChatGPT, followed by 4% who say Google Scholar helped them in their research.

We conclude from the table that ChatGPT is one of the main AI applications students rely on. This is because it is free, easy to access, rich in diverse information and references, and does not require creating an account. This makes students use it frequently. It also generates ideas by offering suggestions for different research topics and projects, which increases creativity and critical thinking.

### Third Section: Main Challenges Resulting from Using AI in Scientific Research

**Table (7): Excessive Dependence on AI Tools in Research Makes You Lose Creativity**

|       | Frequency | Percentage |
|-------|-----------|------------|
| Yes   | 83        | 83%        |
| No    | 17        | 17%        |
| Total | 100       | 100%       |

From Table 7, 83% confirm that excessive reliance on AI tools in scientific research made them lose creativity. Meanwhile, 17% say excessive reliance did not make them lose creativity.

We conclude from the table that relying too much on AI tools makes students lose their creative ability. This happens because the student stops thinking and innovating, depending entirely on the tool to complete assignments and research. This eliminates deep thinking and personal effort, which are necessary for creativity.

**Table (8): Main Risks of Using AI in Scientific Research**

|                                      | Frequency | Percentage |
|--------------------------------------|-----------|------------|
| Algorithmic bias                     | 12        | 12%        |
| Marginalisation of critical thinking | 55        | 55%        |
| Generating false content             | 21        | 21%        |
| Inability to understand              | 12        | 12%        |
| Total                                | 100       | 100%       |

From Table 8, 55% say that marginalizing critical thinking is the most serious risk of using AI in scientific research. Meanwhile, 21% say AI creates false content. The remaining 12% believe that AI leads to algorithmic bias and lack of understanding.

We conclude from the table that the marginalization of critical thinking is the main risk. This happens because when students rely too heavily on AI tools, they no longer know what they are searching for. Their work becomes simple copying and pasting, without forming their own opinions, justifying their arguments, or making any personal effort. On the other hand, AI may also produce false content by giving information with no sources, offering fake statistics, or generating inaccurate or fabricated data.

**Table (9): Heavy Dependence on AI Tools Leads to a Decline in Researchers' Analytical and Scientific Writing Skills**

|       | Frequency | Percentage |
|-------|-----------|------------|
| Yes   | 100       | 100%       |
| No    | 00        | 00%        |
| Total | 100       | 100%       |

From Table 9, 100% of the students agree that heavy reliance on AI tools leads to a decline in researchers' analytical and academic writing skills.

We conclude from the table that heavy use of AI tools weakens analytical and writing skills. Students become unable to analyse, lose motivation for scientific research, and their critical thinking becomes weaker. This leads researchers to accept results without checking or verifying them, and prevents them from generating new viewpoints.

#### **Fourth Section: Ways to Improve the Use of Artificial Intelligence in Scientific Research**

**Table (10): Methods That Ensure the Ethical Use of AI in Scientific Research**

|                                                  | Frequency | Percentage |
|--------------------------------------------------|-----------|------------|
| Training researchers on the right way to use it  | 00        | 00%        |
| Completely banning the use of AI tools           | 20        | 20%        |
| Developing application that detect the use of AI | 80        | 80%        |
| Total                                            | 100       | 100%       |

From Table 10, 80% say that developing applications that can detect who relied on AI is one of the methods that ensure the ethical use of AI in scientific research. Meanwhile, 20% believe that completely banning AI tools is the way to ensure ethical use.

We conclude from the table that developing detection applications is considered one of the main ways to ensure ethical AI use. These applications work by examining metadata of images and detecting AI-generated fingerprints. They can also identify texts written by AI.

Some Arab and even national universities now use such tools to detect AI-generated student work. Among the most common applications are GPTZero and StudentAIDetector.

**Table (11): Establishing Guidelines and Policies for AI Use in Universities and Research Centres**

|                | Frequency | Percentage |
|----------------|-----------|------------|
| Yes            | 98        | 98%        |
| No             | 02        | 02%        |
| To some extent | 00        | 00%        |
| Total          | 100       | 100%       |

From Table 11, 98% confirm that it is necessary to establish guidelines and policies for using AI in universities and research centres, while 2% do not agree.

We conclude from the table that establishing guidelines is essential. This can be done through continuous awareness campaigns, organizing national conferences and seminars to educate students about proper AI use, and incorporating AI-related lessons in all disciplines to teach students about its benefits and risks.

**Table (12): Methods Used by Students for the Correct Use of AI in Scientific Research**

|                                                              | Frequency | Percentage |
|--------------------------------------------------------------|-----------|------------|
| I use it only for language correction                        | 01        | 01%        |
| I use it to get information and verify it from books         | 44        | 44%        |
| I do not completely rely on it for assignment                | 01        | 01%        |
| I rely on it as a helping tool not a substitute for learning | 54        | 54%        |
| Total                                                        | 100       | 100%       |

From Table 12, 54% use AI only as a supporting tool and not a substitute for learning. Meanwhile, 44% use it to get information and then verify it from books. The remaining 1% say they rely on it only for language correction.

We conclude that students mainly use AI as a supportive tool, not as a replacement for learning. This includes using it to gather information, verify content from other sources, generate ideas, and support their knowledge, while still depending on books and articles. Students also use AI to check information, especially because AI sometimes provides inaccurate or fabricated content, which requires verification from reliable sources.

**Table (13): Suitable Methods to Improve AI Use in Scientific Research**

|                                                                                  | Frequency | Percentage |
|----------------------------------------------------------------------------------|-----------|------------|
| Adding AI-related courses in university programs                                 | 10        | 10%        |
| Supporting university research projects about AI in media and communication      | 22        | 22%        |
| Encouraging collaboration between students and researchers to exchange expertise | 39        | 39%        |
| Creating university platforms that provide reliable and free AI tools            | 29        | 29%        |
| Total                                                                            | 100       | 100%       |

From Table 13, 39% believe that encouraging collaboration between students and researchers to exchange expertise is the best method to improve AI use. Meanwhile, 29% support creating university platforms that offer free and reliable AI tools. Another 22% support funding research projects related to AI in media and communication, and 10% suggest introducing AI courses in university curricula.

We conclude that encouraging collaboration between students and researchers is one of the most suitable ways to improve AI use in scientific research. Collaboration creates knowledge exchange: the professor guides the student toward the correct scientific direction, while the student shares new technologies and modern tools. Many students depend heavily on AI for writing or copy content without referencing, so collaboration opens doors for joint research projects that use AI in new ways, such as media content analysis or audience data studies.

### III. Results and discussion

Our study reached several key findings:

- 80% of students rely on AI in all their scientific research because it is easy to use and offers many diverse sources.
- 70% confirm that the main benefit of AI in research is making it easier to find different sources and references.
- 96% of students use ChatGPT, making it the most used AI application in their research.
- 83% confirm that excessive dependence on AI tools made them lose their creative ability.
- 55% state that marginalizing critical thinking is one of the major risks of AI use in scientific research.
- 100% agree that heavy reliance on AI leads to a decline in researchers' analytical and academic writing skills.

- 80% believe that developing detection applications is essential to ensure the ethical use of AI.
- 98% say that universities and research centres must establish guidelines and policies for AI use.
- 54% use AI as a supporting tool, not a substitute for learning.
- 39% believe that encouraging collaboration between students and researchers is the best way to improve AI use in scientific research.

#### **IV. Conclusion**

Our study makes it clear that artificial intelligence has become a real revolution in the field of scientific research. It has significantly contributed to accelerating research processes, collecting data, and analysing it. It has also helped students generate ideas and innovative solutions for various issues that previously required many years of human effort to reach specific results. However, this rapid development in AI technologies and their multiple advantages has led students to rely on them extensively in their academic work, creating a form of laziness and a decline in effort, independent inquiry, and critical thinking.

Among the most important recommendations highlighted by our study are:

- ✓ The need to encourage students to use AI tools correctly in scientific research.
- ✓ The need to develop modern applications that enable universities to detect researchers who used AI tools in their work.
- ✓ The necessity of organizing university conferences and seminars to enhance awareness about proper AI use.
- ✓ The need to introduce AI-related courses into university curricula.
- ✓ The necessity of training university teachers in the field of artificial intelligence.

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