

Original Article

THE ROLE OF ARTIFICIAL INTELLIGENCE (AI), AND SOCIAL MEDIA IN DEVELOPING TEACHING METHODS

Dr. Bassam Hassan Mohra ^{1*}

¹ University College of Applied Sciences, Gaza



ABSTRACT

This study addresses the role of artificial intelligence (AI), and social media in developing teaching methods. It highlights the role of artificial intelligence by exploring the concepts and significance of each of them. It also examines the ways in which important applications of artificial intelligence can be utilized along to improve teaching methods. The importance of the study arises from the contemporary practical topic it covers within the modern educational process. The researcher employs the descriptive-analytical approach. The descriptive-analytical approach aligns with the study's topic. Previous relevant studies, research papers, books, and periodicals are reviewed in order to establish the theoretical foundation of artificial intelligence, and social media as well as the role of each of them in developing teaching methods. In order to fulfil the purpose of the study, relevant studies, sources, and references covering the same topic will be discussed. The study has reached numerous results, among which the following are noteworthy:

- The study showed that artificial intelligence, and social media have a crucial role in the development of teaching methods.
- It has been revealed that there is a close correlation between artificial intelligence, and social media in the development of teaching methods.
- The study showed that there is a clear facilitation in linking between knowledge, scientific experiences, and practical aspects.
- The study confirmed that the integration of artificial intelligence and social media in the development of teaching methods facilitates the link of knowledge, scientific experiences, and practical aspects

Keywords: Artificial Intelligence, Teaching Methods

INTRODUCTION

Artificial intelligence and social media are no longer limited to a certain group of people; they are now accessible to everyone. Artificial intelligence has already penetrated many aspects of our daily life, especially in education. Modern technology and artificial intelligence are now present in every educational institution. However, the biggest challenge lies in the necessity of providing the infrastructure needed by students and institutions to implement these technologies. Such as computer-equipped classrooms, electronic screens, and reliable internet access, not to mention the appliances that students' homes should be equipped with. Moreover, the teaching staff should be trained for using these modern techniques.

*Corresponding Author:

Email address: Dr. Bassam Hassan Mohra (bmohra@ucas.edu.ps)

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“Artificial Intelligence” is a compound term consisting of two words; “artificial” and “intelligence”. “Intelligence” is the ability to understand changing or new circumstances, i.e., the ability to recognize, understand, and learn these conditions. Thus, the keys to intelligence are recognition, understanding, and learning. The word “artificial” is related to the verb “artificialize”, i.e., “to make” or “to create”. It includes all entities produced by humans which are distinguished from natural entities that have no human intervention. Based on that, artificial intelligence, generally, means the intelligence of machines or computers made by humans, therefore, it is the science of the modern machine [Saad \(2012\)](#).

Many previous studies such as the studies of [Mokatel and Husni \(2021\)](#), [Khawalid \(2019\)](#), [Puntambekar \(2019\)](#), [Warner \(2018\)](#), and [Saad \(2012\)](#) have confirmed that artificial intelligence is a relatively new field that emerged as one of the computer sciences. It mainly concerns with studying, understanding, and simulating the nature of human intelligence in order to create a new generation of intelligent computers that can be programmed to process and complete many tasks that require high levels of deduction, elicitation, and recognition. Such qualities are only possessed by humans and fall within the domain of their intelligent behavior. It was not possible for machines to acquire such qualities before. Hence, it turns out that societies are in dire need of artificial intelligence and its implementations in the educational process, and that motivated the researcher to conduct this study.

Accordingly, the trend towards artificial intelligence has emerged to simulate and explore the abilities of human intelligence in an attempt to understand the processes of the human mind. Thus, we can see that artificial intelligence science seeks to build intelligence according to its systems that were characterized by the transition from artificial intelligence methods to programming systems of computers which helped in building experience systems that include some of the experiences the human mind stores. In light of the above, it was found that there is an urgent need to use artificial intelligence and its implementations in the educational process, considering it one of the most important modern educational trends, in order to benefit from it in the educational field. Therefore, the study aims to answer the following questions:

- 1) What is the concept of artificial intelligence?
- 2) What are the advantages and characteristics of artificial intelligence?
- 3) What are the objectives and significance of artificial intelligence?
- 4) What are the characteristics of smart teaching programs in the educational process?
- 5) What are the most important applications of artificial intelligence?
- 6) What are the impacts of using artificial intelligence in the educational process, and the challenges it faces?

STUDY OBJECTIVES

The study aims to identify:

- 1) The concepts of artificial intelligence.
- 2) The advantages and characteristics of artificial intelligence.
- 3) The objectives and significance of artificial intelligence.
- 4) The characteristics of smart teaching programs in the educational process.
- 5) The most important applications of artificial intelligence.
- 6) The impacts of using artificial intelligence in the educational process, and the challenges it faces.

SIGNIFICANCE OF THE STUDY

The significance of the study arises from the importance of applying modern techniques in the educational process which is the only way to utilize the technical means in improving the educational process in terms of its inputs, processes, or outputs. The significance can be outlined as follows:

- 1) Helping in assessing the status quo of artificial intelligence applications within the “Madrasati” platform as well as identifying their advantages and disadvantages.
- 2) Highlighting the need of integrating artificial intelligence applications in the educational reform efforts in order to increase the educational outcome.
- 3) Assisting in effectively activating the role of teachers, planners, and the educational system to present strategies, techniques, and procedures that maximize the benefit of the potentials of artificial intelligence applications in educational reform within the knowledge era.

ARTIFICIAL INTELLIGENCE

DEFINITION OF ARTIFICIAL INTELLIGENCE

Researchers have formed many definitions of artificial intelligence. Some defined it as the machine's ability to simulate the human mind through computer software designed for this purpose. This ability develops and enables computers or other machines to perform tasks that require intelligence. Others described artificial intelligence as the subfield of computer sciences focusing on the conceptions and methods of symbolic inference by computers as well as the representation of symbolic knowledge when making inferences. Artificial intelligence can be seen as an attempt to model aspects of human thinking on computers [Mokatel and Husni \(2021\)](#).

CHARACTERISTICS OF ARTIFICIAL INTELLIGENCE

There are several characteristics of artificial intelligence, including:

- 1) Using artificial intelligence in solving problems that lack complete information.
- 2) The ability to think and perceive.
- 3) The ability to learn and comprehend previous experiences and experiments.
- 4) The ability to quickly respond to new events and circumstances.
- 5) The ability to handle difficult and complicated conditions.
- 6) The ability to visualize and create.
- 7) The ability to provide information that supports administrative decisions.
- 8) The ability to use the trial-and-error method to explore different situations [Al-Najjar \(2010\)](#).

ADVANTAGES OF ARTIFICIAL INTELLIGENCE

Artificial intelligence has many advantages and benefits in various fields such as:

- 1) Representation of knowledge: Unlike statistical programs, there are many programs in which there is a feature of representing information by using a special structure to describe knowledge. They include facts and relationships as well as rules that link these relationships.
- 2) The use of the optimistic experimental approach: One of the major features of artificial intelligence programs is that they focus on solving problems that don't have known solutions; they focus on satisfactory solutions.
- 3) Handling incomplete information: One of the powerful features of artificial intelligence programs is their ability to find solutions even with limited information. The result, however, might be less realistic; but mostly accurate.
- 4) Learnability: Artificial intelligence programs can act and learn from previous experiences and practices. They can also enhance performance by learning from past mistakes.
- 5) Inference: It is the ability to find possible solutions for a certain problem based on previous inputs, experiences, and experiments by using inference strategies and the rules of logic [Mattai \(2012\)](#).

CHARACTERISTICS OF SMART TEACHING PROGRAMS

Smart teaching programs have many features and characteristics, including the following: [Mokatel and Husni \(2021\)](#).

- 1) Knowledge representation.
- 2) The use of the optimistic experimental approach.
- 3) Handling incomplete information.
- 4) Learnability.
- 5) Inference.
- 6) Natural language processing.

OBJECTIVES OF ARTIFICIAL INTELLIGENCE

Generally, artificial intelligence aims to understand the nature of human intelligence by developing programs simulating human behavior, i.e., the programs' ability to make decisions, solve problems, or help reach a decision by utilizing the various inferential processes embedded within the programs.

There are three general objectives of artificial intelligence, as follows: [Al-Lawzi \(2012\)](#)

- 1) To make machines more intelligent.
- 2) To understand the nature of intelligence.
- 3) To make machines more useful.

From another point of view, there are other objectives of artificial intelligence, including: [Afifi \(2014\)](#)

- 1) Enabling machines to process information more closely to human problem-solving methods through parallel processing in which many instructions are executed simultaneously.
- 2) A better understanding of the nature of human intelligence by studying the way it functions, so it can be simulated.
- 3) Building programs with the ability to perform behaviors that are described, when performed by humans, as intelligent. Thus, they can carry out tasks that require human intelligence.
- 4) Establishing an intelligent connection between perception and action.

Furthermore, there are other objectives of artificial intelligence:

- 1) Understanding the nature and methods of human intelligence by developing programs capable of simulating human behaviors and actions [Mahmoud \(2020\)](#).
- 2) Developing computer systems capable of achieving intelligence similar to or better than human intelligence by entering and storing human data and knowledge into computer memory. After analyzing and processing the data through programs and tools used in the software base, the computer will be able to compare and extract the best results and solutions for problems that need to be solved [Makkawy \(2018\)](#).
- 3) Enabling computers to process information through programs and tools used to approach human problem-solving methods and execute multiple commands simultaneously [Afifi \(2014\)](#).

THE IMPORTANCE OF ARTIFICIAL INTELLIGENCE

Artificial intelligence has many important benefits in various fields and domains. In our daily life, for example, we use artificial intelligence in e-commerce websites such as Amazon, streaming services like Netflix, and social media platforms. It is also employed in self-driving cars technologies and applications of transportations companies like Uber to reduce accidents and traffic congestion [Puntambekar \(2019\)](#)

In business, artificial intelligence assists in supporting businesses across all domains and contributes to elevating them to higher levels. It enhances the efficiency and speed of business operations. It also increases the number of people interacting with these businesses through the continuous development of artificial intelligence software and tools [Warner \(2018\)](#).

As for the importance of artificial intelligence in education, it holds significance for students and teaching staff. The importance of artificial intelligence for students can be summarized in the following: [Hubert \(2021\)](#)

- 1) Flexibility of study time: Artificial intelligence applications provide students worldwide with access to learning materials at any time, with high quality, and without the need to travel or incur additional expenses.
- 2) Identifying students' skills and providing them with suitable recommendations: This can be accomplished by establishing customized educational programs suiting their educational capabilities. Such programs can adapt to each student's knowledge level, learning pace, and desired goals. They can also enhance their learning experience. [Myneni and Varsha \(2023\)](#)
- 3) Providing various learning options: Many students need additional help, whether for doing homework assignments or preparing for exams. Additionally, chatbots can perform various tasks that help students. [Jain and Singh \(2026\)](#)
- 4) Providing prompt answers for students: This is considered a key feature of artificial intelligence programs.
- 5) Providing remote learning for students worldwide: Artificial intelligence provides a variety of options for sharing knowledge and learning across the world. It enables students to study different courses, enroll in various training programs, and access educational platforms. Moreover, there are programs that support multiple languages and offer special courses for students with hearing or visual impairments.

The benefits of artificial intelligence for the teaching staff can be summarized as follows [Karadish \(2021\)](#):

- 1) Identifying students' weaknesses in order to improve curriculum: Using students' wrong answers, artificial intelligence can help with establishing courses, reinforcement programs, and educational sessions.
- 2) Better development of curriculum: Artificial intelligence modern technologies have a crucial and effective role in engaging students in the learning process, making it more efficient, such as VR technology.
- 3) Providing answers for students' frequently asked questions: Artificial intelligence programs, such as chatbots, can be utilized to answer such questions; by accessing the school's comprehensive knowledge base. Thus, Artificial intelligence provides more time for teachers to focus their efforts on other tasks.

ARTIFICIAL INTELLIGENCE APPLICATIONS

Those who understand the impacts of the Fourth Industrial Revolution believe that establishing an innovative education goes beyond the boundaries of change; it requires extending the revolution to all fields of education, for it is the most clear and effective path. It is also noticed that the repercussions of this revolution have led to profound changes at various levels. Artificial intelligence can simulate the human brain and its interactions in learning and inference to deduce information that makes it capable of providing the needed assistance for problems faced by students in their daily life.

Like most sciences, artificial intelligence is classified into a set of branches sharing the same problem-solving methods. There are several applications of artificial intelligence, including:

- 1) Gaming programs: Despite their simplicity, gaming programs' ability to cover multiple possibilities increases the complexity of their design. Like playing with a player whose moves cannot be logically expected, as in chess.
- 2) Natural language comprehension: To some extent, there are programs that can understand the natural language of humans. This can be achieved through storing and developing knowledge in these programs.
- 3) Military implementations: Artificial intelligence programs help security forces in making decisions. Moreover, simulation technologies are used in improving the skills of trainees and assessing their efficiency.

In order to obtain the best experience and outcomes of the educational process, there are some notable features of artificial intelligence educational applications: [Mira \(2019\)](#)

- 1) Personalization: One of the main obstacles in classrooms is delivering curriculum using constant methods, without taking students' different abilities into account. For example, high-achieving students might be forced to attend the same lessons more than once since their low-achieving classmates need such repetition. In order to address such issue, many artificial intelligence-specialized companies work to deliver the learning process according to the abilities and needs of every student. This helps teachers to determine students' levels accurately in order to increase their success rates.
- 2) Training: Artificial intelligence is utilized to create intelligent programs and platforms which are highly capable of measuring students' teaching methods, appreciating students' knowledge, and offering personalized training courses that suit the knowledge of every student.
- 3) Curriculum quality: Artificial intelligence can effectively highlight the gaps in educational and training curricula, through the performance of students in tests and training. It can worthily diagnose the problems facing students in scientific issues, enabling the teaching staff to focus their efforts on curriculum areas that require further explanation.

EFFECTS OF USING ARTIFICIAL INTELLIGENCE IN THE EDUCATIONAL PROCESS

There are many positive effects of using artificial intelligence in the educational process:

- 1) In order to alleviate administrative burdens, artificial intelligence systems can facilitate school management. This can be achieved by changing traditional management systems into electronic ones. This contributes to making correct administrative decisions, assigning courses and classes to teachers according to their abilities and attitudes, and establishing specialized programs for both gifted students and students with learning difficulties.
- 2) Smart applications help learners to break free from one constant learning method. These applications and educational platforms, for example, have become adaptable to students' tendencies and needs.
- 3) Self-learning and improvement can be achieved through artificial intelligence programs, such as the applications used to improve educational, logical reasoning, self-correction, and self-programming skills.
- 4) Creating an organized knowledge database where information is effectively stored. Thus, employees of the institutions, especially those who work in the knowledge management departments, can access that knowledge and learn the experimental rules that may not be available in books or other sources of information.
- 5) Storing information and knowledge related to artificial intelligence. This enables organizations to protect their data in case of infiltration or loss due to employees' resignations, transfers, or deaths.
- 6) Finding solutions to complicated problems. Processing and fixing such issues promptly can help students with special needs in various ways, especially text-to-speech and speech-to-text services. Thus, individuals with visual or hearing impairments find no difficulty in using information technology tools.
- 7) When lacking experience, artificial intelligence can significantly contribute to enhancing the experience of current teachers.
- 8) When needing to address students' various educational needs, even highly qualified teachers sometimes find it difficult to fulfill such needs. Faithful implementation of various instructions on a daily basis can be challenging (Al-Ali, 2009, p. 28).

CHALLENGES FACING ARTIFICIAL INTELLIGENCE

Artificial intelligence faces many challenges in its implementations in several fields, including:

- 1) Educational field.
- 2) Social field.
- 3) Security and privacy field.
- 4) Technical field.

CONCLUSION

In light of the previous discussion, the findings and recommendations of the study can be outlined as follows:

First: Findings:

- 1) The study revealed that artificial intelligence and have great importance in our life. They are no longer limited to a group of people; they are used by everyone. They have already penetrated many aspects of our daily life.
- 2) The study revealed that artificial intelligence and social media have a significant role in developing teaching methods.
- 3) The study revealed that there is a deep connection between artificial intelligence, and social media in the development of teaching methods.
- 4) The study showed that there is a clear facilitation in linking between knowledge, scientific experiences, and practical aspects.
- 5) The study confirmed that the integration of artificial intelligence and social media in the development of teaching methods facilitates the link between knowledge, scientific experiences, and practical aspects.
- 6) Artificial intelligence can solve problems which lack complete information.
- 7) Artificial intelligence generally aims to understand the nature of human intelligence through developing programs simulating human behavior, i.e., the program's ability to make decisions, solve problems, or help reach a decision by utilizing the various inferential processes embedded within the programs.
- 8) The repercussions of the Fourth Industrial Revolution have resulted in radical impacts in education and its various fields.
- 9) Using artificial intelligence applications in the educational process has a significant impact. Artificial intelligence systems can facilitate school management in order to alleviate the administrative burdens by changing the traditional management systems into electronic ones.
- 10) Artificial intelligence systems contribute to making correct administrative decisions, assigning courses and classes to teachers according to their abilities and attitudes, and establishing specialized programs for gifted students and students with learning difficulties. [Hazarika \(2025\)](#)

Second: Recommendations:

The researcher recommend the following:

- 1) Establishing advanced programs based on artificial intelligence, and employing its applications in educational institutions across all fields.
- 2) Emphasizing the establishment of artificial intelligence specialized departments in universities in order to nurture specialists and experts in artificial intelligence fields and its modern implementations.
- 3) Making serious efforts to spread technological literacy and raise the awareness among the educational institutions and local society about the positive impacts of artificial intelligence. Also, using virtual meetings to simplify concepts and help parents to access educational websites.
- 4) Enhancing the competence of teachers and the educational staff. This can be achieved by training them on how to use technological applications and smart systems to keep up with developments in the era of artificial intelligence.
- 5) Conducting further research and experimental studies in artificial intelligence fields in order to demonstrate the role and effectiveness of artificial intelligence-based programs. [Kasarapu \(2026\)](#)

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