

استخدام أدوات الذكاء الاصطناعي المتوفرة في التطبيقات الاجتماعية كوسيط تعليمي من وجهة نظر المعلمات واتجاهاتهن نحوها

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المستخلص: هدفت الدراسة الحالية إلى معرفة درجة استخدام أدوات الذكاء الاصطناعي المتوفرة في التطبيقات الاجتماعية كوسيط تعليمي من وجهة نظر المعلمات واتجاهاتهن نحوها، ولتحقيق أهداف الدراسة استخدمت الباحثة المنهج الوصفي التحليلي من خلال تطبيق أداة الدراسة (الاستبانة) على عينة من معلمات مدينة أبها قدرها (٣٨٦) معلمة، وأظهرت الدراسة النتائج التالية: أن معلمات مدينة أبها تتوفر لديهن الوعي المعرفي لاستخدام أدوات الذكاء الاصطناعي بدرجة متوسطة حيث بلغ المتوسط الحسابي $M=2.77$ وأن درجة توافر الوعي المهاري لدى معلمات مدينة أبها لاستخدام أدوات الذكاء الاصطناعي المتوفرة في التطبيقات الاجتماعية كوسيط تعليمي بدرجة منخفضة حيث بلغ المتوسط الحسابي $M=2.37$ ، وأن درجة استخدام المعلمات لأدوات الذكاء الاصطناعي المتوفرة في التطبيقات الاجتماعية كوسيط تعليمي منخفضة بمتوسط حسابي $M=2.14$ ، وأن اتجاه معلمات مدينة أبها نحو توظيف أدوات الذكاء الاصطناعي المتوفرة في تطبيقات التواصل الاجتماعي كوسيط تعليمي جاء بدرجة (مرتفعة) بمتوسط حسابي $M=4.36$ ، وأن عينة الدراسة موافقات على معوقات استخدام أدوات الذكاء الاصطناعي المتوفرة في تطبيقات التواصل الاجتماعي بدرجة موافق بشدة بمتوسط حسابي $M=4.31$ ، وفي ضوء تلك النتائج أوصت الدراسة بعدة توصيات منها: ضرورة نشر الوعي بأهمية توظيف أدوات الذكاء الاصطناعي المتوفرة في تطبيقات التواصل الاجتماعي.

الكلمات المفتاحية: الذكاء الاصطناعي - أدوات الذكاء الاصطناعي - التطبيقات الاجتماعية.

The Use of Available Artificial Intelligence Tools in Social Applications for Educational Purposes: Female Teachers' Perspectives and Attitudes

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Abstract: The current study aimed to determine the degree of using artificial intelligence tools available in social applications for educational purposes: female teachers' perspectives and attitudes. To achieve the objectives of the study, the researcher used the descriptive analytical method by administering the questionnaire to a sample of (386) female teachers in the city of Abha. The results of this study revealed that the cognitive awareness degree of using artificial intelligence among female teachers in Abha city was moderate with a mean score of $M=2.77$, and the degree of skill awareness among female teachers in Abha city to use the available artificial intelligence in social media applications as a medium of education was low with a mean score of $M=2.37$. Furthermore, the results showed that the degree of teachers' use of available artificial intelligence tools in social media applications as a medium of education was low with a mean score of $M=2.14$. The teachers' attitudes in the city of Abha towards the employment of the available artificial intelligence tools in social media applications as a medium of education were high with a mean score of $M=4.36$. The sample of the present study showed a high degree of agreement on the obstacles to using the available artificial intelligence tools in social media applications with a mean score of $M=4.31$. In light of the results, this study recommends the necessity of spreading awareness of the importance of employing the available artificial intelligence tools in social media applications.

Keywords: artificial intelligence, artificial intelligence tools, social applications.

Introduction

Technology has passed through successive and accelerating stages of development. The world is witnessing its brightest scientific and technological era, and it is also achieving distinct levels of scientific and technical progress. Technology has become a necessity of the era, and it is used in various aspects of life. Technology is developing day after day, and the progress of world countries is measured by the level of their technological development. The world is witnessing a new turning point in its history, an unprecedented development in the technical and technological field, and a collective civilizational transformation because of the tremendous developments brought by the fourth industrial revolution and the generation of technology that eliminated the barriers that separate everything that is physical, biological, and digital. In addition, several technical terms and concepts have recently appeared such as the Internet of Things and data, blockchain, nanotechnology, artificial intelligence, and other modern technologies that have caused unprecedented changes and great challenges in various fields (Al-Amiri & Al-Talhi, 2020).

Artificial intelligence technology represents one of the most important outputs of the fourth industrial revolution, and its star has recently shone because of the smart applications and systems that have been developed for it, which have exceeded all limits in the art of production and the effectiveness of use. Artificial intelligence has attracted the interest of many scientists and researchers, and fruitful attempts have begun to integrate it into various life fields such as industry, commerce, medicine, and education. Artificial intelligence plays a vital role in all fields of scientific and practical life. (Abdulsalam, 2020; Malik et.al., 2019).

In the past few years, artificial intelligence has received wide interest in the field of education, and it has become one of the topics for discussion in conferences and scientific research and has received a great level of interest from researchers. The investment in artificial intelligence and benefiting from it in education has become an urgent necessity, accompanied by exploring future prospects, especially in light of the requirements of Saudi Vision (2030) (Al-Hujaili & Al-Frani, 2020).

Social media applications Like Facebook, Twitter, Instagram, Snapchat, Telegram, and WhatsApp have all embraced artificial intelligence to enhance their functionalities. These applications attempted to benefit from the various AI tools such as chatbots, barcodes, avatars, channels, and polls). The AI tools transformed the users of these applications into content creators and producers, and they increased interaction between users. Nowadays, various organizations and institutions use social media applications as a marketing channel to achieve their goals of communicating with customers and users in a quick, easy, and low-cost manner. In addition, these applications give institutions and companies the opportunity to modify, correct, improve, and develop their products and services. Hence, social media applications have become of great interest to organizations due to their positive effects in building a sustainable competitive advantage (De Bruyn, 2020).

On the other hand, the number of internet users increased to 7.524 billion people worldwide, which is approximately 3.819 billion people using the internet, resulting in 30,028 billion active users on social media applications. This means that 20.78 billion people use phones to browse social networks. As for social media app users, the internet usage rate increased by approximately 8 million users, or 0.2%. The number of active users on social media applications increased by approximately 121 million users, a 4% increase. The number of mobile phone users increased by approximately 92 million

people, or 2%. Additionally, the number of mobile phone users browsing social media applications increased by up to 82 million people, a 3% increase (Al-Saadi, 2023).

This progress in the field of artificial intelligence and the openness to using social media applications for investment has led to leveraging such technologies for solving existing educational problems, studying their impact, and striving to provide a safe and modern educational environment through planning, designing, and digital development (Musa & Bilal, 2019). Artificial intelligence tools have opened up new opportunities for significantly improving the quality of teaching and education. Teachers can utilize these smart systems in assessments, data collection, enhancing learning progress, and developing modern teaching strategies. Furthermore, the integration of artificial intelligence and education is not just a shift in education but also in knowledge, awareness, and human cultures. As a result, artificial intelligence in education has become a central research focus in the field of educational technology (Chen et al., 2020a; Hwang et al., 2020).

In light of this reality, the use of artificial intelligence tools in education will enable new approaches in teaching and learning processes, leading to fundamental changes in the requirements and competencies of teachers. Therefore, it has become the duty of teachers to take on various new roles, acquire new skills, and perform tasks that align with artificial intelligence (Al-Khabairi, 2020). There is no benefit to any educational technology if teachers do not possess the necessary competencies, regardless of its advancement or seriousness. These technologies become useless without teachers. Teachers need to keep up with these ongoing developments and changes in order to adapt these technologies in education. Therefore, experienced teachers who keep up with these technologies, are versatile in their implementation, and are creative in their use should be available. They should possess the competencies to handle them because teachers have an active and influential role in the educational process. Hence, the current study aims to propose the necessary technical competencies for teachers to use artificial intelligence in the educational process.

Statement of the Problem

Social media applications are the primary gateway to technology in universities and are the most widely used among students. This is because they provide students with unique features and services, and their content and methods of use differ from other websites. Additionally, they have a rapid and highly impactful expansion and influence, which traditional media lack. Therefore, as they have become an integral part of the current student lifestyle, researchers have directed their efforts toward studying the integration of social media networks into the educational process. A study by Muni and Al-Zahrani (2020) showed a positive trend toward using social media networks in teaching computer science and information technology. Another study by Mazhar and Abdulhadi (2020) demonstrated the significant importance of using social media networks in teaching for both students and university professors. Additionally, a study by Al-Sheikh (2020) emphasized the importance of using social media networks in the educational process in Saudi universities, citing the benefits it brings to both teachers and learners.

The urgent need for employing this technology and harnessing its potential in education at all stages has become evident. Social media applications based on artificial intelligence technologies have the capability to enhance the educational process with greater efficiency, effectiveness, speed, and intelligence. Therefore, there is a growing

need to harness these capabilities and capacities to support and facilitate learners' education, creating a flexible and easy-to-use educational environment. Through these applications, educational content can be developed and adapted according to the needs and characteristics of each learner (Nagao, 2019). Furthermore, these technologies support modern educational principles such as self-directed learning, cooperative learning, continuous learning, and adaptive learning (Colchester et al., 2017; Kose & Arslan, 2017).

Many studies have highlighted the importance of keeping up with the advancements of the era and enhancing the educational process through the use of artificial intelligence applications in teaching. Studies such as Fahimirad and Kotamiani (2018), Koutou and Kia ora (2018), Zroogi and Faltah (2020), and Mahmoud (2020) have emphasized the significant role of employing artificial intelligence applications to enhance education in the face of challenges like COVID-19, including interactive chatbots.

Additionally, studies like Alfrani and Alhujaili (2020) have examined factors that can influence teachers' acceptance and utilization of artificial intelligence applications in education, using the Unified Theory of Acceptance and Use of Technology (UTAUT) model, which includes expected performance, expected effort, social influence, and facilitating conditions. Other studies, like Al-Khabairi (2020), have shown that secondary school teachers in Al-Kharj province have low skills in utilizing artificial intelligence in the educational process. Furthermore, Alshibil (2021) found that mathematics teachers have moderate perceptions regarding teaching and learning mathematics using artificial intelligence in general education.

Moreover, Al-Qahtani and Aldayel (2021) highlighted a high level of awareness regarding artificial intelligence concepts and their applications in education among female students at Princess Nourah Bint Abdulrahman University in Riyadh, Saudi Arabia. Abdulsalam (2021) underscored the importance of artificial intelligence applications in education, the need to enhance education, identify its requirements, and address the risks associated with these applications. Finally, Al-Sheikh's study (2022) aimed to develop a future professional development framework based on cognitive technology to enhance the science teaching practices of elementary education teachers using artificial intelligence applications.

Therefore, based on the foregoing, and in light of the recommendations from previous studies regarding the necessity of utilizing social media applications in the educational process (Alsaiddi, 2023; Moghrabi, 2021; Ahmad, 2019) as well as the need for further research and studies on the use of artificial intelligence in the educational process (Ibrahim, 2023; Almusalam, 2023; Al-Qahtani, 2023; Albishir, 2020; Alhujaili & Alfrani, 2020; Al-Yazigi, 2020). There is an urgent need to study the extent to which teachers are using artificial intelligence tools in social media applications as an educational medium in the educational process, as well as their attitudes towards them.

Research Questions

The current study aims to answer the following question: What is the extent of teachers' use of artificial intelligence tools available in social media applications as an educational medium from their perspective, and what are their attitudes toward them? This question leads to the following sub-questions:

1. What is the level of cognitive awareness among teachers regarding the use of artificial intelligence tools available in social media applications as an educational medium?



2. What is the level of skillful awareness among teachers regarding the use of artificial intelligence tools available in social media applications as an educational medium?
3. To what extent do teachers use artificial intelligence tools available in social media applications as an educational medium?
4. What are the attitudes of teachers towards the use of artificial intelligence tools available in social media applications as an educational medium?
5. What are the barriers that hinder teachers' use of artificial intelligence tools available in social media applications as an educational medium?

Research Objectives

The current study aimed to achieve the following objectives:

1. To determine the level of cognitive awareness among teachers regarding the use of artificial intelligence tools available in social media applications as an educational medium.
2. To measure the level of skillful awareness among teachers regarding the use of artificial intelligence tools available in social media applications as an educational medium.
3. To measure the extent to which teachers use artificial intelligence tools available in social media applications as an educational medium.
4. To measure the attitudes of female teachers towards the use of artificial intelligence tools available in social media applications as an educational medium.
5. To identify the barriers that hinder teachers' use of artificial intelligence tools available in social media applications as an educational medium.

Significance of the Study

The theoretical importance of the current study is evident through the following points:

1. In response to one of the objectives of Saudi Arabia's Vision 2030, which is the expansion of the use of artificial intelligence in general and in the field of education in particular.
2. The importance of utilizing social media applications in the educational process, as their user base has been steadily increasing in recent times.
3. A literary addition to building scientific and knowledge accumulation in the field of education by harnessing artificial intelligence tools.
4. This study sheds light on the importance of leveraging the available artificial intelligence tools in social media applications as an educational medium.

The practical importance of the current study is evident through the following points:

1. It is expected that this study will contribute to providing decision-makers with specific procedures to overcome obstacles that hinder the use of artificial intelligence tools as an educational medium.
2. This study will provide a tool to assess the competence of teachers in dealing with artificial intelligence tools.
3. It is hoped that this study will offer a set of solutions to address the obstacles that prevent teachers from possessing the necessary technical competencies to employ artificial intelligence.

Delimitations of the Study

The current study is limited by the following boundaries:

1. **Subject Matter Boundaries:** The study is confined to the use of available artificial intelligence tools in social media applications as an educational medium from the perspective of female teachers and their attitudes toward these tools.
2. **Human and Geographic Boundaries:** This study is limited to female teachers in the city of Abha.
3. **Temporal Boundaries:** The study was conducted in the field during the first semester of the academic year 1445 Hijri.

Terminologies of the Study

Artificial Intelligence: "One of the branches of computer science, it deals with methods and means of innovating and designing intelligent devices and machines that can think and act like humans and perform multiple tasks that require intelligence such as learning, planning, speech recognition, facial recognition, problem-solving, perception, and logical and rational thinking" (Kansara & Attar, 2021, p. 248). Procedurally, artificial intelligence is defined as an advanced field in computer science that seeks to design computer systems capable of executing various tasks and functions in a manner that resembles human capabilities, assisting humans in completing their work tasks with minimal effort and time.

Artificial Intelligence tools: According to (Amin, 2023), it is defined as "a set of small software programs based on various algorithms to simulate human cognitive abilities and their operational patterns through two types of learning and inference to make decisions based on training, learning, and self-evolution" (p. 611). The researcher procedurally defines artificial intelligence tools as a set of information software applications related to social media applications that automatically interact with users through predefined scenarios such as chatbots, barcodes, opinion polls, electronic tests, and educational avatars.

Social media applications: According to Al-Ashri, (2014), it is defined as "The means through which individuals can exchange ideas and information, share interests and activities with others, on websites where many individuals participate. Subscribers can use these platforms to share a vast amount of information and data instantly with all other subscribers" (p. 34). The researcher procedurally defines social media applications as tools through which users can exchange knowledge and information in various electronic applications such as Snapchat, Telegram, WhatsApp, Twitter, and Facebook.

Literature Review

Definition of Artificial Intelligence

Various definitions of artificial intelligence exist among researchers. Some define it as the ability to simulate intelligent human-like behavior in computer systems (Smart Nation Singapore, 2019). Tilak (2020) describes it as the capability to represent computer models of different aspects of life and identify the fundamental relationships between their elements, then generating responses that correspond to the events and situations in these domains. Chen et al. (2020b) defines it as a branch of computer science that focuses on studying and building computer systems capable of exhibiting forms of intelligence. This means systems that can learn new concepts and tasks, systems capable of reasoning and drawing meaningful conclusions about the world we live in, systems that can understand natural languages, and systems that can perform tasks requiring human-like intelligence. It is also defined as "computer programs and systems simulating tasks and behaviors carried out by human intelligence; it is intelligence exhibited through the actions of machines, rather than humans, using computer programs with the ability to mimic human-like intelligent behavior" (Al-Hariri, 2021, p. 357).

It is evident from the previous definitions that there are various perspectives on artificial intelligence. Some definitions emphasize that AI is a part of computer science, while others focus on artificial thought processes. Some relate to thinking and reasoning processes, while others delve into human-like behavior and actions. Additionally, certain definitions gauge success based on how closely AI aligns with human performance. These diverse viewpoints reflect the multifaceted nature of artificial intelligence and its intersection with computer science, cognitive processes, human behavior, and benchmarking against human capabilities.

Characteristics of Artificial Intelligence

The literature and previous studies have agreed on several characteristics of Artificial Intelligence, as summarized by the researcher (Al-Anzi, 2022; Shaaban, 2020; Qashati, 2020):

1. The ability to deal with complex and challenging situations.
2. The ability to handle situations characterized by ambiguity in the absence of information.
3. Rapid response to new situations and circumstances.
4. Discovery of multiple matters through trial-and-error processes.
5. Utilizing past experiences and applying them to new situations.
6. Drawing on previous expertise for understanding and learning.
7. Ease of applying and acquiring knowledge.

The Importance of Artificial Intelligence in the Educational Process

Both Al-Balawi (2020) and Karsenti (2019) have pointed out the importance of using artificial intelligence in the educational process as follows:

1. Facilitating the Delivery of Fruitful Educational Content: AI can assist in providing educational content that is easily understandable for students, enhancing their comprehension and ensuring the retention of learning for an extended period.

2. Preservation and Sharing of Experience: AI can help in preserving and preventing the loss of valuable educational experiences by making them available online.
3. Time Efficiency for Educators: AI systems can save a significant amount of time that educators spend on daily tasks such as classroom management, student assessment, and automatic grading of specific assignments.
4. Storage and Processing of Vast Experiences and Theoretical Knowledge: AI can store, process, and utilize a vast number of experimental experiences and theoretical knowledge to help students grasp foundations and theoretical principles.
5. Enhancing Enjoyment and Fostering Creativity: AI can make the learning process more enjoyable and foster creativity among students.
6. Increasing Interaction with Academic Content: AI can increase interaction between learners and academic content, providing new ways to engage with information.
7. Customized Education: AI can provide education tailored to the needs of both teachers and learners.

The Artificial Intelligence Tools Available in Social Media Applications

Social media applications offer a variety of artificial intelligence tools that can be utilized in education. The researcher attempted to compile the most important of these tools, as follows:

1. **Intelligent Chatbots:** Robots interact extensively and can perform educational tasks. The robot takes the form of an application that allows the student to interact with it through writing or voice or both, to provide assistance based on their needs for support, guidance, or problem-solving (Bakr & Taha, 2019).
2. **Telegram Bots:** These are applications capable of performing various tasks, such as text-to-speech conversion, which can turn written text into audible speech. They include multiple default languages and can be employed for various educational purposes, such as converting documents and physical books into audio files (Khalda, 2019). Recently, there have been bots available for instant translation, bots for creating electronic tests, and bots for summarizing content.
3. **Educational Avatars:** This refers to the embodiment of three-dimensional avatar images. Recently, with the advancement of technology in education and its integration, virtual characters have become embodied interface figures. Teachers work on incorporating them into their lessons, adding motion and sound to them. Learners can interact and engage in discussions with these virtual characters to achieve educational goals while adding elements of fun and excitement for the learners. This also facilitates and accelerates the learning process (Huang et al., 2020).
4. **Opinion Polls:** This is a tool provided by social media applications in the realm of electronic marketing. This type of polling typically allows surveys to reach a larger audience compared to traditional surveys, and social media platform-based surveys are known for their simplicity (Hassan, 2021). Teachers can also leverage this tool as a catalyst for discussion, as student participation in surveys through social media platforms encourages conversations about the content or the teacher's performance. Consequently, the benefits of voting go beyond simple statistics, including interaction with the teacher. This enables the teacher to identify strengths and weaknesses and continuously work on content improvement or performance enhancement.
5. **Barcode:** The QR code It is a pattern containing a link is intended to redirect the user to the required address. It can be recognized by scanning it using a barcode scanner (Al-Moumani & Al-Nasraween, 2020). In the educational process, barcodes can be

used to provide students with digital content such as videos, PowerPoint presentations, electronic tests, or opinion surveys.

The Reality of Teachers' Use of Artificial Intelligence Tools in Education

In this regard, several studies have been conducted to investigate the reality of teachers' use of artificial intelligence tools and applications in education, such as the study by Wang and Lin (2018). Their study aimed to conduct a comprehensive analysis of how primary school teachers in South Korea perceive the use of artificial intelligence in education. The descriptive approach was employed, and the sample consisted of 69 primary school teachers in South Korea. A questionnaire was used as a tool to collect data and information. The results indicated that teachers generally agree that artificial intelligence technology is suitable for assisting in educational activities within the classroom. Additionally, the study identified negative factors affecting the educational use of artificial intelligence from the teachers' perspective, including learning content, educational materials, and artificial intelligence devices.

Mahmoud (2020) conducted a study aimed at identifying the applications of artificial intelligence that could be beneficial in enhancing the educational process in light of the challenges posed by the COVID-19 pandemic. A descriptive methodology was employed, and the sample consisted of 31 education officials from higher education institutions and pre-university education. A questionnaire was used as a tool to gather information. The results revealed several challenges and difficulties related to various aspects, including educational administration, the educational process, teachers, students, learner assessment, and parents. Among these challenges were a lack of adequate infrastructure, insufficient attention to training teachers and learners in using modern technologies, limited readiness, and heavy reliance on traditional printed textbooks.

Al-Khabairi (2020) studied the extent to which secondary school teachers in the Al-Kharj region possess the skills to utilize artificial intelligence applications in education. The study also aimed to identify the main obstacles that hinder these teachers from using artificial intelligence in education. A descriptive methodology was employed, and the sample included 130 female teachers from the secondary level. A questionnaire was used as a research tool. The results indicated a low level of skill acquisition among secondary school teachers in the Al-Kharj region when it comes to employing artificial intelligence applications in education. Additionally, there was a consensus on the presence of numerous obstacles hindering the use of these applications.

Hindy (2020) aimed to assess the extent to which art education teachers at the preparatory level in the Minya governorate applied skills related to the use of artificial intelligence applications in the areas of planning, execution, and evaluation. The research utilized a descriptive methodology, and the sample included 80 art education teachers in the Minya governorate. A questionnaire was used as a data collection tool. The results indicated that there is a deficiency in the skills of preparatory-level art education teachers in the Minya governorate when it comes to employing artificial intelligence applications in the areas of planning, execution, and evaluation.

Almukhallfi (2020) identified the effective application strategies for artificial intelligence techniques in teaching English language, as perceived by students at Northern Borders University. The research employed a descriptive-analytical methodology, with a sample size of 44 randomly selected students. A questionnaire was used as the data collection tool. The study revealed a set of suitable strategies for utilizing artificial intelligence in teaching the English language. However, the students' perspective

indicated a very low level of implementation of these strategies. Additionally, the study proposed a plan that includes the fundamentals, objectives, content, processes, and assessment methods for the application of artificial intelligence in English language education.

Ramadan (2021) conducted a study to assess the actual implementation of artificial intelligence application skills by secondary school teachers in the Kingdom of Saudi Arabia from the perspective of school leaders and teachers. A descriptive survey methodology was employed, and the sample consisted of 386 school leaders and teachers. A questionnaire was used as a research instrument. The results indicated that secondary school teachers moderately apply skills related to the utilization of artificial intelligence applications in the educational process. The skills were ranked as follows in descending order of importance: teaching strategies with a relative weight of (77.3%), planning with a relative weight of (55%), and performance evaluation with a relative weight of (52%). Furthermore, the study's findings regarding the actual implementation of artificial intelligence application skills by secondary school teachers in the educational process revealed that there were no statistically significant differences based on study variables, including job position, gender, years of experience, city, or participation in artificial intelligence courses.

Chounta et al. (2022) conducted a study aimed at exploring teachers' perceptions and assessing their knowledge and understanding regarding the use of artificial intelligence technology in education and the challenges they face. They used a descriptive survey methodology, with a sample of 140 teachers from Estonia, ranging from preschool to twelfth grade. A questionnaire was utilized as a research tool. The study's results revealed that teachers had limited knowledge of artificial intelligence technologies, and they needed support to acquire digital literacy and become more efficient and effective in using artificial intelligence as a supportive tool in their teaching practices. One of the prominent challenges they faced in using artificial intelligence in education was the effort required to learn how to use it, in addition to their limited language skills, as most artificial intelligence technologies rely on the English language.

Al-Shehri (2022) investigated the attitudes of special education teachers towards the utilization of artificial intelligence applications in addressing learning difficulties in the Asir region of the Kingdom of Saudi Arabia. The study employed a descriptive-analytical approach using a questionnaire and was conducted on a random sample of 147 male and female special education teachers in the Asir region of Saudi Arabia during the second and third semesters of the academic year 1443 H / 2022 AD. The study concluded that there is a moderate to high level of awareness regarding the advantages and potential of using artificial intelligence applications to solve learning difficulties. The emotional and behavioral attitudes toward this were high, indicating a positive inclination among special education teachers to employ these technologies. However, there was a significant consensus about the existence of difficulties and obstacles in adopting this type of technology.

The study conducted by Al-Muslim and Mukli (2023) aimed to explore the attitudes of elementary science teachers towards the use of artificial intelligence applications in the educational process under the administration of the Jazan Education Department. It also investigated the challenges faced in using these applications. A survey was administered to a sample of 92 teachers. The results of this study revealed that elementary science teachers have a positive inclination towards using artificial intelligence applications in the educational process and, there were some obstacles that hinder the use of artificial

intelligence applications by elementary science teachers. The study identified certain shortcomings in providing incentives that encourage the use of artificial intelligence applications in the educational process.

Al-Qahtani and Al-Dayel (2023) studied the reality of employing artificial intelligence techniques at Princess Nourah bint Abdulrahman University from the perspective of faculty members and their attitudes towards it. The research followed a descriptive-analytical approach, with a study sample consisting of 207 faculty members at Princess Nourah bint Abdulrahman University. The researchers prepared a questionnaire comprising 30 items, which were distributed across four domains: the current utilization of artificial intelligence techniques by faculty members, the university's orientation towards employing and harnessing artificial intelligence technologies, support for scientific research in the field of artificial intelligence, and community engagement in the field of artificial intelligence. The results of the study indicate that the actual employment of artificial intelligence technologies by faculty members at Princess Nourah bint Abdulrahman University is at a high level. However, the university's orientation towards the application of artificial intelligence technologies in the areas of education, scientific research, and community service is assessed as being at a moderate level.

Al-Hanaki and Al-Harthy's (2023) study sought to investigate the current application of artificial intelligence in education from the perspective of computer science and information technology teachers. The study employed a descriptive survey methodology, and the study population consisted of all regular computer science and information technology teachers at the secondary level in Riyadh during the second semester of the academic year 1444 H (corresponding to 2022-2023). The research sample included 85 teachers who responded to the survey. The study found that among the research sample, the most used artificial intelligence applications in education were smart educational games that focus on excitement, challenge, imagination, and competition within the educational process. The least commonly used applications were those for converting printed images or handwritten text into editable text files using optical character recognition and text-to-speech applications. Furthermore, the study identified challenges in using artificial intelligence applications in education, including the belief that using artificial intelligence applications in education requires more effort than traditional teaching methods, insufficient technical support, learners' difficulties in solving problems when using artificial intelligence applications in education, and the high financial costs associated with equipping classrooms for the use of artificial intelligence applications.

Mashael and Al-Eid (2023) assessed the actual use of appropriate artificial intelligence applications in early childhood education from the perspective of teachers. The study involved distributing a survey, both electronically and on paper, to understand the current employment of such applications. The study adopted a descriptive methodology and selected a random sample of early childhood education teachers in the Shaqra governorate. A total of (99) valid surveys were included for analysis. The results of the study revealed a significant lack of knowledge among early childhood education teachers regarding the use of artificial intelligence applications, despite their awareness of the importance of these applications in this stage of education. The study also highlighted the limited utilization of artificial intelligence applications in early childhood education, particularly in this specific context.

In summary, the previous studies indicated that the degree of utilization of artificial intelligence applications by teachers varies between moderate and low in most of the studies, except for the study conducted by Al-Qahtani and Al-Dail (2023), which showed

a high level of adoption by university faculty members. Additionally, the level of cognitive awareness among teachers regarding artificial intelligence tools and applications and how to use them ranges from moderate to low in most of the previous studies. Furthermore, previous studies collectively suggest that there is a technological acceptance among teachers for using artificial intelligence tools and applications. However, there are obstacles that hinder teachers from effectively employing artificial intelligence tools.

Methodology

The researcher employed a descriptive-analytical methodology, which helps the current study to achieve its objectives.

Population of the Study

The study population consisted of all the female teachers in the city of Abha, totaling 1794 teachers, during the first semester of the academic year 1445 H (corresponding to the year 2023).

Sample of the Study

The study instrument was administered to a random sample of teachers in Abha City, which included 386 teachers.

Characteristics of the Participants

Several key variables have been determined to describe the participants who responded to the research instrument. These variables include educational qualifications, educational stage, teaching experience, and training courses in the field of technology. These variables provide significant implications for the study results and reflect the educational background of the study sample. These variables are as follows:

First, educational qualifications: The participants with a bachelor's degree represented the majority, accounting for 75.5% of the sample size, while those with a master's degree made up 22.5% of the sample. Only 2% of the sample holds a doctoral degree.

Second, educational stage: The participants working in elementary education represented 33% of the sample, those in middle education represented 32.9%, and those in secondary education made up 34.1% of the sample.

Third, teaching experience: Participants with teaching experience ranging from 1 to 5 years accounted for 16.8% of the sample, while those with teaching experience from 5 to 10 years made up 27.7%. The majority, 55.5%, have teaching experience exceeding 10 years.

Fourth, technology training courses: participants who have attended training courses in the field of technology made up 82.0% of the sample, while 19.0% of the sample did not participate in any technology training courses.

Research Instrument

The researcher used a questionnaire as a data collection instrument due to the nature of the research objectives, methodology, and population. The instrument was designed based on a comprehensive review of several documents, research papers, and previous studies such as (Ibrahim, 2023; Al Muslim, 2023; Al Qahtani, 2023; Al Bishr, 2020; Al Hajjli and Al Farani, 2020; Al Yajzi, 2020). The design of the research instrument involved the following steps:

1. Building the Initial Questionnaire: The questionnaire contained five main dimensions and included a total of 51 statements as follows:

- First Dimension: Cognitive Awareness (8 statements).
- Second Dimension: Skill Awareness (7 statements).
- Third Dimension: Utilization Level (13 statements).
- Fourth Dimension: Attitude (11 statements).
- Fifth Dimension: Barriers (12 statements).

2. Validity of the Instrument: The validity of the research instrument was ensured through two methods as follows:

a. Face validity: to assess the face validity of the questionnaire and ensure that it measures what it was designed to measure, it was initially presented to a group of (12) expert judges specialized in the field of educational technology and e-learning. Necessary modifications were made based on the consensus of most judges, resulting in the final version of the questionnaire consisting of (48) items distributed across five dimensions as follows:

- Dimension 1: Cognitive Awareness (7 items).
- Dimension 2: Skill Awareness (6 items).
- Dimension 3: Usage Level (14 items).
- Dimension 4: Attitude (11 items).
- Dimension 5: Barriers (10 items).

b. Internal structure validity/internal validity: to ensure the internal validity of the instrument, Pearson's Correlation Coefficient was calculated. This was done to determine the degree of correlation between each item in the questionnaire and the total score of the dimension to which it belongs. Additionally, Pearson's Correlation Coefficient was calculated between the score of each dimension and the total score of the questionnaire. The results are as follow:

All correlation coefficients of the questionnaire items ranged from 0.54 to 0.954. all of which are positive and statistically significant at the (0.01) significance level, indicating strong internal consistency of the questionnaire. This suggests that the items within each dimension are well-aligned and their suitability for measuring their intended construct.

c. The coefficients of internal consistency between the dimensions and the total score of the questionnaire: The Pearson correlation coefficient was calculated, and the results are shown in Table (1).

Table 1

Pearson Correlation Coefficients for the Dimensions and the Total Score of the Questionnaire

Dimension	Correlational Coefficient
First Dimension	٠,٨٤٢**
Second Dimension	٠,٧٥٠**
Third Dimension	٠,٧٥٥**
Fourth Dimension	٠,٩٦٦**

It is evident from the previous table that the correlation coefficients between the dimensions and the total score of the questionnaire ranged from (0.750) to (0.966). This indicates that all correlation values are positive and statistically significant at the (0.01) level.

3. Reliability of the Instrument: The reliability of the research instrument was confirmed using Cronbach's Alpha coefficient (α). The Cronbach's Alpha coefficients for the questionnaire dimensions ranged from (0.864) to (0.961). The total Cronbach's Alpha coefficient value was (0.948). This indicates that the survey exhibits a high level of reliability, making it dependable for practical application in the study's field.

The Response Scale of the Research Instrument

To facilitate the interpretation of responses from the study's participants, the researcher employed a five-point Likert scale to assess the level of agreement with the items in the instrument. The scale's response options were as follows:

1. Strongly Disagree / Not Available at All
2. Disagree / Low Availability
3. Neutral / Available to Some Extent
4. Agree / High Availability
5. Strongly Agree / Very High Availability

To express this scale quantitatively, each statement was assigned a numerical value as follows:

- Strongly Agree / Very High Availability (5 points)
- Agree / High Availability (4 points)
- Neutral / Available to Some Extent (3 points)
- Disagree / Low Availability (2 points)
- Strongly Disagree / Not Available at All (1 point)

To determine the length of the categories for the five-point Likert scale, the range was calculated by subtracting the lowest point from the highest point ($5 - 1 = 4$). Then, this range was divided by the highest value in the scale ($4 \div 5 = 0.80$). This result was added to the lowest point on the scale (1) to determine the upper limit of this category. Consequently, the length of the categories is illustrated in table (2).

Table 2

Division of Categories for the Five-Point Likert Scale (Response Mean Boundaries)

Category	Mean Boundaries	
	From	To
Available to a very high degree / Strongly agree	٤,٢١	٥,٠٠
Available to a high degree / Agree	٣,٤١	٤,٢٠
Available to a moderate degree / Agree to some extent	٢,٦١	٣,٤٠

Available to a low degree / Disagree	١,٨١	٢,٦٠
Not available / Strongly disagree	١,٠٠	١,٨٠

The range length was used to obtain an objective judgment on the means of responses from the study's sample after statistical processing.

Data Analysis

The researcher has tabulated the data from the surveys, which amounted to a total of 205 responses, and subjected them to statistical analysis using the Statistical Package for Social Sciences (SPSS). The following statistical methods were used in the current study:

- 1- Frequencies and percentages.
- 2- Pearson correlation coefficient.
- 3- Cronbach's Alpha coefficient.
- 4- Weighted means.
- 5- Mean scores.
- 6- Standard deviation.

Results

The present section illustrates the results obtained from this study. The results were presented according to the research questions posed earlier in this study.

Results of the First Research Question

What is the level of cognitive awareness among teachers regarding the use of artificial intelligence tools available in social media applications as an educational medium?

To determine the level of cognitive awareness among teachers regarding the utilization of artificial intelligence tools available in social applications as educational mediators, frequencies, percentages, means, standard deviations, and ranks for the responses of the study sample were presented (Table 3).

Table 3

The Participants' Responses Regarding the First Dimension

No.	Statement	Mean	Std. Deviation	Category	Rank
1.	I can identify and select a suitable set of artificial intelligence tools available in social media applications and use them in teaching	2.80	1.16	Moderate	5
2.	I have knowledge related to the basic skills for dealing with artificial intelligence tools in various social media applications.	2.84	1.15	Moderate	2
3.	I can identify the classifications of artificial intelligence tools available in social media applications and understand the function of each type.	2.81	1.14	Moderate	4
4.	I am familiar with the terminology and concepts related to artificial intelligence	2.91	1.21	Moderate	1

No.	Statement	Mean	Std. Deviation	Category	Rank
	tools available in social media applications, such as chatbots, surveys, Telegram bots, online quizzes, and educational avatars.				
5.	I have knowledge of technical support channels to address technical issues encountered when using artificial intelligence tools.	2.79	1.17	Moderate	7
6.	I can determine suitable educational content to be applied through artificial intelligence tools.	2.82	1.20	Moderate	3
7.	I possess knowledge of modern teaching methods that align with the integration of artificial intelligence technologies.	2.80	1.20	Moderate	6
Overall Mean		2.77	1.08	Moderate	

The results presented in Table (3) indicate that the overall mean for the first domain, "Cognitive Awareness," was $M=2.77$, with a standard deviation of $sd=1.08$. These values confirm that teachers in the city of Abha possess a moderate level of cognitive awareness in using artificial intelligence tools. This falls within the third category of the pentagon scale (ranging from $M=2.61$ to $M=3.40$). This result aligns with Ibrahim's (2023) study, which showed that the level of cognitive awareness among science teachers in Al-Azhar and public education was moderate. It is also consistent with the study conducted by Al-Shehri (2022), which found that the cognitive awareness level of special education teachers regarding artificial intelligence applications was moderate. However, these results differ from the study by Mish'al and Al-Eid (2023), which indicated a significant lack of knowledge among early childhood educators about artificial intelligence applications. Additionally, the findings of Al-Husseini (2023) showed a decrease in the awareness level of science teachers in employing artificial intelligence (AI), and the study by Almukhallfi (2020) demonstrated that the level of effective application of artificial intelligence techniques in teaching English was low from the students' perspective.

This result can be attributed to the fact that despite the efforts made by the Ministry of Education to develop training programs and provide professional development for teachers to keep up with the digital transformation and equip them with modern and sufficient technological skills and competencies, these programs have not adequately focused on the competencies and skills required for integrating artificial intelligence tools into education. This has significantly contributed to the moderate level of technical knowledge skills among teachers.

The highest and lowest indicators in the ranking of the first dimension are presented as follows: The statement "I am familiar with the terminology and concepts related to artificial intelligence tools available in social media applications, such as chatbots, surveys, Telegram bots, online quizzes, and educational avatars" obtained the first rank with an average score of $M=2.91$ and a rating of (moderate). This may be attributed to a lack of providing teachers with sufficient knowledge of the terminology and concepts related to artificial intelligence tools during their preparation or in-service training. This aligns with the recommendation made by Al-Dahshan (2020) regarding the importance of revising teacher preparation and training programs to include content related to artificial intelligence terminology and concepts.

The statement "I possess knowledge related to the basic skills for dealing with artificial intelligence tools in all social media applications" ranked second among the statements with an average score of $M=2.84$ and a rating of (moderate). This may be attributed to deficiencies in teacher preparation programs regarding the use of artificial intelligence tools and the lack of in-service training programs. This is consistent with the findings of Al-Khabairi (2020), who emphasized that a lack of knowledge is one of the key factors influencing the utilization of artificial intelligence in teaching.

The statement "I have knowledge of technical support channels to address technical issues encountered when using artificial intelligence tools" ranked seventh and last among the statements in the first dimension with an average score of $M=2.62$ and a rating of (moderate). This could be attributed to the lack of promotion of technical support channels among teachers by educational authorities to support their use of artificial intelligence technologies. This is in line with the findings of Al-Farani and Al-Hajjali (2020), who emphasized that the use of artificial intelligence in education largely depends on the available facilitations provided by educational institutions. These facilitations include spreading the culture of the importance of using artificial intelligence in education, disseminating technical support channels provided by the government, providing appropriate training programs, and assisting teachers in the use and implementation of artificial intelligence. The absence of such support negatively impacts teachers' utilization of artificial intelligence in teaching.

Results of the Second Research Question

What is the level of skillful awareness among teachers regarding the use of artificial intelligence tools available in social media applications as an educational medium?

To identify the level of skill awareness among teachers in using artificial intelligence tools available in social media applications as educational mediators, frequencies, percentages, means, standard deviations, and ranks for the responses of the study sample were presented (Table 4).

Table 4

The Participants' Responses Regarding the Second Dimension

No.	Statement	Mean	Std. Deviation	Category	Rank
1.	I use interactive chatbot responses to answer learners' inquiries.	1.97	1.17	Low	9
2.	I utilize educational avatars available on Telegram to facilitate teaching and enhance the learning performance of learners.	2.01	1.18	Low	8
3.	I convert printed images or handwritten texts into editable text files using barcode and optical scanning.	1.93	1.17	Low	12
4.	I transform written course materials into audio files using available bots in the Telegram application.	1.96	1.15	Low	10
5.	I use adaptive learning bots available on Telegram to meet the diverse educational needs of each learner through interactive tests that determine the suitable learning style.	1.95	1.19	Low	11
6.	I direct the learners to use instant translation bots available on Telegram.	1.87	1.13	Low	14

No.	Statement	Mean	Std. Deviation	Category	Rank
7.	I instruct learners to summarize long texts accurately and in an easily readable manner using the Summarize Texts tool available in Telegram bots.	1.92	1.17	Low	13
8.	I use surveys available on all social media applications to improve my performance and identify strengths and weaknesses.	2.31	1.18	Low	4
9.	I employ artificial intelligence tools to support learners with enrichment and therapeutic activities.	2.27	1.16	Low	5
10.	I implement systematic activities based on artificial intelligence tools available in social media applications.	2.21	1.22	Low	6
11.	I use artificial intelligence tools in various educational scenarios to present information interactively.	2.34	1.18	Low	3
12.	I utilize artificial intelligence tools in extracurricular activities.	2.19	1.15	Low	7
13.	I employ artificial intelligence tools in instructional tasks.	2.35	1.17	Low	2
14.	I use artificial intelligence tools to support students outside the classroom.	2.46	1.18	Low	1
Overall Mean		2.14	1.09	Low	

The results presented in Table (4) indicate that the overall mean for the second dimension, "Performance Competencies," was $M=2.37$ with a standard deviation of $sd=1.07$. These values confirm that the level of skill awareness among teachers in Abha regarding the use of artificial intelligence tools available in social media applications as educational mediators is low. This falls within the second category of the pentagon scale (ranging from $M=1.81$ to $M=2.60$). The highest and lowest indicators in the ranking for the second dimension are presented as follows: statement No. 6, "I can effectively incorporate artificial intelligence tools available in social media applications into teaching," ranked first with an average score of $M=2.50$ and a low agreement rating. Statement No. 5, "I can create and design work scenarios in social media applications by utilizing artificial intelligence tools," ranked sixth and last among the statements with an average score of $M=2.31$ and a low agreement rating.

This result is in line with the findings of Al-Husseini (2023), which showed a noticeable decline in awareness of how to utilize artificial intelligence applications. It is also consistent with the study by Mish'al and Al-Eid (2023), which indicated a significant lack of knowledge among early childhood educators on how to use artificial intelligence applications. These findings differ from Ibrahim (2023), which reported that the level of awareness among science teachers regarding how to use artificial intelligence in teaching was moderate, and the study by Ramadan (2021), which found that secondary school teachers apply artificial intelligence application utilization skills in the educational process to a moderate extent. This result can be attributed to the teachers' lack of sufficient knowledge about the employment and utilization of artificial intelligence in education. Additionally, there are shortcomings in pre-service teacher preparation programs and insufficient in-service training related to the utilization of artificial intelligence techniques. This aligns with what Al-Bushr (2020) pointed out, emphasizing that one of

the challenges in the deployment of artificial intelligence in teaching is the lack of training for faculty members in utilizing artificial intelligence in teaching, which has negatively affected their technical performance competencies in employing artificial intelligence.

Results of the Third Research Question

To what extent do teachers use artificial intelligence tools available in social media applications as an educational medium?

To determine the degree to which teachers use artificial intelligence tools available in social applications as educational mediators, frequencies, percentages, means, standard deviations, and ranks for the responses of the study sample were presented (Table 5).

Table 5

The Participants' Responses Regarding the Third Dimension

No.	Statement	Mean	Std. Deviation	Category	Rank
1.	I can ensure the effectiveness and quality of educational artificial intelligence tools available in social media applications.	2.48	1.18	Low	3
2.	I can find sources for development related to how to use artificial intelligence tools available in social media applications.	2.46	1.18	Low	4
3.	I know how to use artificial intelligence tools available in artificial intelligence applications.	2.49	1.22	Low	2
4.	I can overcome the technical challenges I encounter while using artificial intelligence tools.	2.35	1.17	Low	5
5.	I can create and design work scenarios in social media applications by utilizing artificial intelligence tools.	2.31	1.18	Low	6
6.	I can effectively incorporate artificial intelligence tools available in social media applications into teaching.	2.50	1.17	Low	1
Overall Mean		2.37	1.07	Low	

The results presented in Table (5) indicate that the overall mean score for the third dimension was $M=2.14$ with a standard deviation of $sd=1.09$. These values confirm that the level of teachers' use of available artificial intelligence tools in social applications as an educational mediator was low, falling within the second category of the pentagonal scale (ranging from $M=1.81$ to $M=2.60$). The statement number (14) "I use artificial intelligence tools to support students outside the classroom," ranked first with an average score of $M=2.46$. This indicates that teachers' use of artificial intelligence tools to support students outside the classroom was low, possibly due to teachers not receiving training courses in the field of artificial intelligence. Additionally, statement number (13) "I use artificial intelligence tools in educational tasks," ranked second among the statements with an average score of $M=2.35$. This indicates that the degree of teachers' use of artificial intelligence tools in educational tasks was low.

This may be attributed to teachers relying on traditional teaching methods, coupled with the lack of a culture among the majority of the study sample regarding the importance of supporting learners outside the classroom and the significance of using artificial intelligence in such cases. This aligns with Hindi's (2020) study which indicated that teachers still rely on traditional teaching methods and do not prioritize supporting learners outside the classroom. Furthermore, there seems to be a lack of awareness among them regarding the importance of utilizing artificial intelligence technology in teaching.

The seventh statement "I direct learners to summarize long texts with extreme accuracy and in an easily readable manner using the Summarize Texts tool available in Telegram bots," ranked thirteenth and second to last among the statements with an average score of $M=1.92$. This suggests that the guidance provided by teachers to learners for summarizing long texts with extreme accuracy and readability using the Summarize Texts tool is low. This could be attributed to a lack of awareness among teachers about the availability of artificial intelligence tools in social media applications.

The sixth "I direct learners to use instant translation bots available on Telegram," ranked fourteenth and last among the statements with an average score of $M=1.87$. This indicates that the degree of guidance provided by teachers to learners for using instant translation bots available on Telegram is low. This might be due to their limited awareness of the importance of artificial intelligence. These results align with Ibrahim's study (2023), which showed a decrease in the utilization of artificial intelligence applications by teachers. They also coincide with Al-Khabairi's study (2020), which revealed a decrease in the proficiency of secondary school teachers in Al-Kharj Province in employing artificial intelligence applications in education. However, they differ from Al-Qahtani and Al-Dayil's study (2023), which found a high level of faculty members' utilization of artificial intelligence at Princess Nourah bint Abdulrahman University.

This result can be attributed to the fact that the teachers may lack sufficient knowledge and skills in using artificial intelligence in education, resulting in a lack of competency in its utilization and difficulties in implementing it inside or outside the classroom. The study by Chounta et al. (2022) suggests that one of the main challenges faced by kindergarten teachers regarding the use of artificial intelligence in education requires concerted efforts to learn how to use it effectively.

Results of the Fourth Research Question

What are the attitudes of teachers towards the use of artificial intelligence tools available in social media applications as an educational medium?

To identify the attitudes of teachers towards the use of artificial intelligence tools available in social applications as educational mediators, frequencies, percentages, means, standard deviations, and ranks for the responses of the study sample were presented (Table 6).

Table 6

The Participants' Responses Regarding the Fourth Dimension

No.	Statement	Mean	Std. Deviation	Degree	Rank
1.	I believe it breaks away from the usual teaching routine.	4.48	.698	Strongly Agree	3
2.	I see it as a time and effort saver in teaching.	4.48	.628	Strongly Agree	4
3.	I believe it makes the teaching process more effective and interactive.	4.50	.665	Strongly Agree	2
4.	I think it caters to different learning styles.	4.43	.661	Strongly Agree	5
5.	I believe it encourages students to collaborate through cooperative learning.	4.27	.788	Strongly Agree	8

No.	Statement	Mean	Std. Deviation	Degree	Rank
6.	I see it as reducing psychological barriers to learning, such as shyness and fear, for example.	4.25	.811	Strongly Agree	10
7.	I believe it will be a successful means of communication between me and the students.	4.11	.868	Strongly Agree	11
8.	I see its use helping to increase academic achievement.	4.57	.695	Strongly Agree	1
9.	I think it adds an element of fun and excitement when presenting educational material.	4.32	.674	Strongly Agree	6
10.	I desire to participate in training courses that help me learn how to use artificial intelligence tools available in social media applications.	4.27	.694	Strongly Agree	9
11.	I welcome the employment of artificial intelligence applications in education across all subjects.	4.30	.795	Strongly Agree	7
Overall Mean		4.36	.730	Strongly Agree	

Table (6) showed that the orientation of teachers in the city of Abha towards using artificial intelligence tools available in social media applications as an educational medium is rated as (high). The overall average for the fourth dimension was $M=4.36$, with a standard deviation of $sd=0.73$. This low standard deviation indicates a consensus among the study sample regarding the fourth dimension. The standard deviations for the items within this dimension ranged from ($sd=0.628$ to $sd=0.868$), and all items had high values, demonstrating a consensus among the study sample regarding these statements. The results show that statement number (8), "I see its use helping to increase academic achievement.", ranked first with an average score of $M=4.57$ and a standard deviation of $sd=0.695$. Statement number (3), "I believe it makes the teaching process more effective and interactive," ranked second with an average score of $M=4.50$ and a standard deviation of $sd=0.665$. In third place, statement number (1), "I think it breaks away from the usual teaching routine," had an average score of $M=4.48$ and a standard deviation of $sd=0.698$. Statement number (2), "I see it as a time and effort saver in teaching," also had an average score of $M=4.48$ and a standard deviation of $sd=0.628$. In contrast, statement number (7), "I believe it will be a successful means of communication between me and the students," ranked last with an average score of $M=4.11$ and a standard deviation of $sd=0.868$.

These results are consistent with the study by Al-Muslim and Mokli (2023), which found a positive attitude among elementary science teachers toward using artificial intelligence applications in the educational process. They also align with the study by Mashal and Al-Eid (2023), which reported an awareness among kindergarten teachers of the importance of using artificial intelligence applications in teaching. Additionally, they coincide with the study by Al-Shahri (2022), which indicated high emotional and behavioral tendencies among teachers to use artificial intelligence applications in teaching.

Results of the Fifth Research Question

What are the barriers that hinder teachers' use of artificial intelligence tools available in social media applications as an educational medium?

To determine the barriers that hinder teachers use of artificial intelligence tools available in social applications as educational mediators, frequencies, percentages, means, standard deviations, and ranks for the responses of the study sample were presented (Table 7).

Table 7

The Participants' Responses Regarding the Fifth Dimension

No.	Statement	Mean	Std. Deviation	Degree	Rank
1.	Weak infrastructure in schools in terms of wireless communications and computer.	4.59	0.75	Strongly Agree	1
2.	Lack of teacher qualification and skill development to use artificial intelligence tools in teaching	4.43	0.79	Strongly Agree	5
3.	Weak conviction among training program designers regarding the importance of using artificial intelligence tools in teaching	4.18	1.03	Strongly Agree	8
4.	Teachers' lack of experience in using artificial intelligence tools in teaching	4.41	0.87	Strongly Agree	6
5.	Curriculum lacks educational activities based on the use of artificial intelligence tools	4.39	0.84	Strongly Agree	7
6.	Inadequate financial and motivational rewards for teachers when they use artificial intelligence tools in teaching	4.55	0.74	Strongly Agree	2
7.	Insufficient class time for using artificial intelligence tools in the learning process.	4.45	0.85	Strongly Agree	4
8.	Excessive teaching workload limits the use of artificial intelligence tools.	4.53	0.78	Strongly Agree	3
9.	Resistance to change among some teachers in using artificial intelligence techniques	3.86	1.19	Agree	9
10.	Teachers' hesitancy in using modern technology in teaching, believing it does not provide any educational benefits	3.69	1.29	Agree	10
Overall Mean		4.31	.680	Strongly Agree	

The results presented in Table (7) indicate that the overall mean score for the fifth dimension was $M=4.31$, with a standard deviation of $sd=0.68$. These values confirm that the study sample strongly agrees on the obstacles to using artificial intelligence tools available in social media applications, falling within the fifth category of the pentagonal scale (ranging from $M=4.21$ to $M=5.00$). The researcher interprets the study's findings to indicate that teachers' use of artificial intelligence tools available in social media applications as an educational medium is a result of individual efforts. Most of the obstacles are often beyond the control of the teachers. These obstacles manifest in the lack of necessary technical requirements that would assist teachers in employing artificial intelligence tools. These requirements include weak wireless communication infrastructure, a lack of computers, and poorly developed artificial intelligence-based

software. Additionally, there are shortcomings in the human requirements, such as teachers' lack of qualification and skill development, lack of experience in using and applying artificial intelligence techniques, and weak conviction among training program designers. These factors have led to reduced readiness for training programs that meet teachers' needs and have limited their implementation of such programs.

These findings align with several studies, including the study by Al-Muslim and Mokli (2023), which indicated that there are obstacles preventing elementary science teachers from using artificial intelligence applications in the educational process. These obstacles include shortcomings in providing incentives that encourage the use of artificial intelligence applications in education. The results of this study are also in line with Al-Hanaki and Al-Harithi's (2023) study, which highlighted obstacles to using artificial intelligence tools in education, including the belief that using these tools requires more effort than traditional teaching, lack of necessary technical support, learners' limited problem-solving abilities when using artificial intelligence applications, the high financial cost associated with equipping classrooms for AI applications. The results of Mahmoud's study (2020) revealed that among the significant obstacles to implementing artificial intelligence in education are weak infrastructure, insufficient training for teachers and learners on using new technology, and their limited readiness. Additionally, there's a heavy reliance on printed books. Wang and Lin (2018), which identified content-related challenges as one of the major obstacles to the implementation of artificial intelligence in education, including learning content, educational materials, and artificial intelligence tools. These studies collectively underscore the challenges and barriers that educators and institutions face when integrating artificial intelligence into the educational process.

Recommendations of the Study

1. To raise awareness about the importance of using artificial intelligence tools available in social media applications to keep up with the demands of the era.
2. Those interested in the Ministry of Education should establish specialized units that rely on artificial intelligence tools and design educational programs based on artificial intelligence tools.
3. To reevaluate the focus on training and developing teachers' skills and improving their use of artificial intelligence tools in education.
4. To pay attention to building infrastructure in schools, including wireless communications, computers, and artificial intelligence applications and tools.
5. To work on reducing the workload on teachers and providing sufficient time in class to enhance their opportunities to use artificial intelligence tools in education.

Suggestions

The results of the current study provide several suggestions for future studies including the following:

1. To conduct future studies on a proposed training program to develop the cognitive and performance competencies of teachers for using artificial intelligence tools in education.
2. To Conduct future studies on a proposed approach to enhance the efficiency of teachers in developing their skills for using artificial intelligence tools in education.

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