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AN INVESTIGATION INTO THE ADOPTION AND USE OF ARTIFICIAL INTELLIGENCE APPLICATIONS IN TEACHING AMONG FACULTY MEMBERS AT MAYSAN UNIVERSITY

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Abstract
The study aims to investigate the reality of faculty members' use of artificial intelligence applications at Maysan University in the teaching process and the challenges facing their use. The study employs a descriptive analytical approach and a descriptive survey methodology, applying a questionnaire to a sample of 299 faculty members at Maysan University during the academic year 2024-2025. The findings reveal that the use of artificial intelligence applications in education among faculty members is very low, and there is a notable agreement on the existence of several challenges hindering the use of these applications. In conclusion, the study presents a set of recommendations, most notably: the need to conduct training courses for faculty members to familiarize them with the latest developments in artificial intelligence applications, motivate them to use modern technological tools, and provide the educational environment with the necessary devices to utilize these applications in the educational process.

Keywords: Artificial Intelligence Applications, Faculty Members, Maysan University.

Introduction

The advent of the 21st century has marked a profound transformation in educational paradigms, transitioning from conventional teaching methods to innovative digital and artificial Intelligence(AI) -driven strategies. Recent years have seen swift advancements in artificial intelligence, leading to its widespread adoption across various sectors, including education. As a pivotal information and communication technology, AI offers boundless opportunities, prompting educators to reassess conventional teaching approaches and harness its potential to boost the efficacy and efficiency of educational systems. As education evolves, the importance of AI tools becomes more pronounced, warranting a deeper investigation into their potential and implications. Artificial intelligence has become a comprehensive term for applications that perform complex tasks that previously required human input, such as communicating with customers online, performing an electronic service, or playing a game.

It also includes machine learning and other applications. Many institutions and companies are using AI to perform their tasks creatively and in a short time, thus securing significant and powerful investments(Liu Peng.(2017:162-163).

AI is of great importance in building smart machines, creating important projects that operate on precise search algorithms, machine learning, self-learning, and augmented learning, and developing electronic games such as chess, which is considered one of the most important intelligence games, fraud detection, and business auditing. It also represents the most important outcome of the Industrial Revolution, which opened up vast horizons in Europe, especially Germany, which has become a leading power in technology, science, and industry. Its uses have diversified in the military, industrial, and medical fields, and it has the potential to open up new and vast horizons for innovation and industry worldwide. With the emergence of these technologies and methods of development and progress, AI has become the driving force behind the progress, prosperity, and development of the entire world. It seeks to create and establish a new technological pole that is not limited to traditional methods because their use has become essential and mandatory in all fields: education, medicine, industry, economics, trade, and international relations.(ibid:171)

Artificial intelligence (AI) is a subfield of computer science that plays a crucial role in the technology industry today. AI enables the development of computer programs that mimic human intelligence, allowing machines to perform tasks that would typically require human intelligence, such as thinking, understanding, hearing, speaking, and movement (Zawacki-Richter,. *et al.* 2019:77). By simulating human brain functions, AI empowers computers to learn, acquire knowledge, collect and analyze data, and establish relationships between them, thereby enhancing their capabilities.

Malik, *et.al*. (2019) highlight the recent proliferation of AI-powered applications and smart systems that have exceeded expectations in terms of production and effective utilization. The integration of these technologies into education has shown promising results, contributing significantly to the learning process .

Stuart Russell & Peter Norvig. 2004:89) , note that AI has gained prominence in education, particularly with the development of applications that can assess student performance, analyze their responses, provide personalized feedback, and determine their scores. This enables educators to create tailored learning plans for each student, allowing for timely error detection and correction, and ultimately enhancing the learning experience.

1.1.Research Problem:

A review of existing literature on AI applications reveals a gap in research on the adoption of AI applications in education among faculty members at Maysan University. However, several studies, including those by Wang et al. (2020), Darar (2019), and Al-Yajazi (2019) and Liu Peng (2017), have recommended expanding the use of AI applications, exploring new technologies, and integrating them into educational institutions. These studies also emphasized the need to equip educators with the necessary skills to effectively utilize AI applications in the educational process, tailored to their specific needs.

In light of the numerous studies that have highlighted the benefits of AI applications in education and the recommendations of studies such as Xiao Fang (2018:54), Zhao Wenjuan.(2018:34) and Feng Chunyan, Chen Xuyuan (2021:95), this study has explored the effectiveness of AI in achieving educational goals. The conference "Artificial Intelligence and Education: Challenges and Opportunities" (2019) also emphasized the need to train educators to work in AI-enabled education and equip them with the necessary digital skills. Given the limited use of AI applications in Arab universities, as noted by Zhang Yansong(2019:129-130), this study aims to investigate the current state of AI application adoption among faculty members at Maysan University. The problem can be summarized in the two main questions :

1.What is the reality of faculty members' use of AI applications in education at Maysan University?

2.What challenges do Maysan University faculty members encounter when using artificial intelligence applications in education?

1.3.Aims of Study :

This study has two primary aims : Firstly, to explore the current state of artificial intelligence application adoption among faculty members at Maysan University in their educational practices. Secondly, to investigate the obstacles that hinder the effective use of these applications in education.

1.4. Study Limits

The study's limitations include: A spatial focus on Maysan University, a temporal scope restricted to the first semester of 2024, a sample size of 301 faculty members, and an objective focus on understanding the reality and challenges of artificial intelligence application use in education.

1.5. Significance of the Study:

This study's significance lies in its potential to highlight key artificial intelligence applications for education, enhance curricula related to AI, inform faculty members about AI's role in improving education, provide a research tool for measuring AI adoption, and inspire further studies on AI's impact on learning outcomes.

1.6.Term Definitions :

1.Artificial intelligence (AI):

Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem-solving, decision-making, creativity, and autonomy. This definition highlights AI's ability to mimic human intelligence and perform tasks that typically require human thought and action (Russell, S. J., & Norvig, P. (1995:121) The researcher operationally defines artificial intelligence as encompassing hardware and software systems, including Smartphone and tablet applications, that possess human-like

capabilities in thinking, decision-making, and action, aiming to harness these technologies to enhance educational outcomes.

2. **Faculty members**: The term "faculty members" encompasses a range of academic positions, including professors, associate professors, assistant professors, lecturers, and teaching and research assistants.

3. **Maysan University** : Maysan University is a public university affiliated with the Ministry of Education in Iraq. It is located in the southern city of Masan . It was established by royal decree in (2007 AD). It includes fourteen colleges: the College of Applied Medical Sciences, the College of Computer Science and Information Systems, the College of Education, the College of Arts and Sciences, the Community College, the College of Medicine, the College of Dentistry, the College of Administrative Sciences, the College of Pharmacy, the College of Engineering, the College of Arts and Sciences, the College of Education, and the College of Sharia and Islamic Law.

2.LITERATURE REVIEW:

Artificial intelligence (AI) originated in 1956 when John McCarthy coined the term during a Dartmouth University workshop. AI is a branch of computer science that aims to design machines and programs capable of mimicking human cognition, learning, decision-making, and action (Ocana-Fernandez, *et.al.*, 2019:80).

2.1.Definitions of Artificial Intelligence

According to Baker, T., & Smith, L. (2019:44) artificial intelligence is a branch of computer science that focuses on creating computer programs capable of mimicking human intelligence, enabling them to perform tasks that require thinking, understanding, and logical decision-making. According to Tredinnick (2017:23) artificial intelligence encompasses computational techniques that allow computer systems to make rational decisions in response to changing conditions, incorporating methods like natural language processing, machine learning, and intelligent agents. According to Singh Gill, S.et.al.(2023:56) artificial intelligence refers to the behaviors and characteristics acquired by computer programs that enable them to simulate human mental abilities in various ways, effectively mimicking. According to Dogan, M. E.,et.al. (2023:78), artificial intelligence refers to the capability of machines and computers to perform tasks that simulate intelligent behavior, such as thinking, learning from experience, and other cognitive processes, with the goal of creating systems that behave similarly to humans. (ibid:90) defines artificial intelligence as the ability of digital machines to mimic intelligent beings by performing tasks that require mental processes like thinking and learning, aiming to create systems that learn and understand in a human-like manner. As Gligorea, I., et.al (2023:13) defines artificial intelligence as " It is about machines and computers performing tasks that resemble human intelligence, including thinking, learning, and other mental processes, with the objective of creating intelligent systems that behave like humans" .These systems provide its users with various services,

including education, guidance, interaction, and so on. According to Gocen, A., & Aydemir, F. (2020:67), artificial intelligence is the capacity of a system to accurately interpret external data, learn from it, and apply the knowledge to achieve specific objectives through adaptive behavior.

A review of various definitions reveals that artificial intelligence (AI) systems must possess certain characteristics, including:

1. Learning and information acquisition: AI systems can learn and acquire new information.
2. Data analysis and decision-making: AI systems can collect, analyze, and relate data to make informed decisions.
3. Cognitive abilities: AI systems can think, perceive, and discover knowledge.
4. Adaptability and application: AI systems can apply knowledge, learn from experiences, and adapt to new situations.
5. Responsiveness and innovation: AI systems can respond quickly to new situations, handle uncertainty, and evolve over time.

2.2. History and Development of Artificial Intelligence

Overview:

The emergence and development of artificial intelligence (AI) have been shaped by numerous theoretical and technical contributions. Gocen, A., & Aydemir, F. (2020:23-43) ; Shoug Allahi, 2020:88-98; Zawacki-Richer *et al*., 2019:120-123 ; Key milestones in AI's journey include:

1950s: Pioneering AI Research

In the 1950s, a small group of scientists began exploring ways to build intelligent machines that could simulate human-like reasoning, drawing on advances in neuroscience, information theory, and cybernetics. The Dartmouth Conference in 1956 marked the official founding of the field of artificial intelligence research. Key attendees, including John McCarthy, Marvin Minsky, Allen Newell, and Herbert Simon, went on to lead AI research for decades, establishing influential AI laboratories at institutions like MIT, CMU, and Stanford. Their pioneering programs demonstrated remarkable capabilities, including reasoning, logical problem-solving, and language processing, which amazed many and laid the foundation for future AI advancements.

1960s: Early Funding

AI research received significant funding from the US Department of Defense, leading to high expectations about AI's potential.

1970s: Funding Cutback

However, the US and UK governments cut funding for exploratory AI research due to unmet expectations.

1980s: Resurgence
AI research revived with the commercial success of expert systems, reaching over $1 billion by 1985 and prompting renewed government funding.

Late 1980s: Another Setback
Despite this success, AI research faced another downturn starting in 1987

1990s: Growing Success
Artificial intelligence gained significant traction in the 1990s, finding applications in logistics, data mining, medical diagnostics, and other industries. This success was driven by increased computing power, a focus on specific problems, and interdisciplinary collaborations, as well as the adoption of rigorous mathematical and scientific approaches.

21st Century: Specialization and Widespread Adoption
In the 21st century, AI has become highly specialized, branching into distinct subfields, and is now widely applied across various aspects of life, transforming numerous industries and domains.

2.3.Types of Artificial Intelligence
According to Sion (2020:45), artificial intelligence can be categorized into three main types:
1. Weak AI (Narrow AI): This type of AI is designed to perform specific tasks within a limited scope and environment. It relies on programming and reacts to specific situations, such as IBM's Deep Blue chess-playing robot.
2. Strong AI: This type of AI can acquire data, analyze it, and make autonomous decisions independent of programming. Examples include self-driving cars and conversational robots.
3. Super AI: This advanced type of AI aims to rival human intelligence, understand human emotions, and establish social relationships. It is still under development and testing.

Both weak and strong AI have been used to develop educational applications, which have shown positive results and benefits for learners and faculty members.

2.4.Benefits of AI in Education
According to various studies (Milicević, V., et.al (2024:259 ; Gocen, A., & Aydemir, F. (2020) ; Shoug Allahi, 2020; Zawacki-Richer *et al*., 2019; Faggella, 2019), the benefits of using AI in education include:
1. Personalized interaction: AI can respond to learners' inquiries and provide efficient answers.
2. Safe learning environment: AI reduces the risks associated with trial-and-error learning.
3. Adaptive learning: AI provides tailored teaching and learning models suited to individual learners' needs.
4. Language learning support: AI-powered tools can help learners improve their language skills.

5. Data analysis: AI can find solutions with incomplete data and handle conflicting information.
6. Engagement: AI adds excitement, challenge, and competition to the learning process.
7. Performance analysis: AI highlights learners' strengths and weaknesses, providing timely support.
8. Improved learner performance: AI helps learners with intermediate experience and solves educational problems.
9. Data management: AI manages educational institutions' data, predicting weaknesses and resource shortages.
Overall , AI applications in education offer numerous benefits, enhancing the learning experience and improving outcomes for learners and educators alike .

The current study highlights the following benefits of using AI in teaching :
1. Modernizing education: AI helps keep pace with modern trends, redefining teacher and learner roles.
2. Efficient tool: AI leverages the internet as an effective educational tool.
3. Enhanced content: AI adds multimedia formats (text, audio, images, video) to course content.
4. Resource optimization: AI saves time, effort, and cost by streamlining information retrieval and reducing routine tasks.
5. Interactive learning: AI enables learners to interact with and develop course content.
6. Text summarization: AI summarizes long texts accurately and in an easy-to-read format.
7. Text-to-speech: AI converts written texts into audio files.
8. Image-to-text conversion: AI converts printed or handwritten text into editable files.

2.5.Challenges to AI Adoption in University Education
Research, including faculty opinions at Maysan University, highlights several challenges hindering the effective use of artificial intelligence applications in university education. These may encompass various aspects, such as technical, infrastructural, or pedagogical issues, which need to be addressed to facilitate the optimal integration of AI applications like expert systems, speech recognition, and natural language processing in the educational process .Some key obstacles include:
The main challenges hindering the use of AI applications in education include:
1. Lack of awareness: Faculty members are unaware of AI's importance in education.
2. Insufficient training: Limited training programs for faculty members.
3. Time constraints: Faculty members lack time to learn and train on AI applications.
4. Resistance to change: Faculty members resist new teaching methods.
5. Lack of support: Authorities fail to develop faculty members' AI skills.
6. High costs: Equipping classrooms for AI is expensive.
7. Increased effort: Faculty members believe AI requires more effort than traditional methods.
8. Time management: Limited time for AI use during lectures.

9. Learner response: Weak learner engagement with new learning styles.
10. Infrastructure issues: Inadequate infrastructure for AI implementation.
11. Technical support: Lack of technical support.
12. Limited incentives: Weak incentives for faculty members using modern technologies.
13. Class size: Large class sizes hinder AI application control.
14.**Many faculty members** are overwhelmed, preventing them from devoting their time to using AI applications in education.
15. Learners' limited ability to address the challenges they face when using AI applications in education.
These challenges highlight the need for awareness, training, infrastructure, and support to facilitate effective AI integration in education .To overcome the challenges, the current study recommends:
1. Fostering a positive attitude: Encouraging faculty members and learners to embrace AI applications.
2. Staff preparation: Equipping educational staff with the necessary skills and programs.
3. Training courses: Providing training for faculty members and learners on AI application use.
4. Technical support: Employing highly qualified specialists for technical assistance.
5**. Motivation and incentives:** Encouraging faculty members to use AI applications through rewards and recognition.
By implementing these solutions, educational institutions can facilitate effective AI integration and enhance the teaching .

2.6.AI Applications in Education
The current study summarizes prominent artificial intelligence applications in education, as highlighted in various studies and literature(Yufeia, Salehb, Jiahuic & Syed (2020) , Sion (2020) , Athanassopoulos, S., et.al.. (2023)., Gocen, A., & Aydemir, F. (2020:67), Kerroti (2019) including:

1.Chatbots in Education: Chatbots are computer programs that simulate human-like conversations, enabling users to interact with them through text, voice, or both. These applications can be accessed via messaging apps, websites, smart devices, or phone calls. Learners can ask questions, and the chatbot responds with answers, support, advice, or empathy, providing assistance tailored to the user's needs.

2.Immersive Technologies :
Immersive technologies typically include:

A.Augmented Reality (AR) .AR adds an interactive layer of information (text, images, audio, video) to the real world. By using a smartphone camera and AR applications, learners can transform static content into interactive experiences.

B. Virtual Reality (VR) .VR creates a computer-simulated environment that learners can interact with, explore, and control. Using special equipment like helmets, gloves, and glasses, learners can conduct experiments, visit places, or participate in simulations remotely, with a high degree of immersion and interactivity.

3.AI-Powered Tools:

AI-Powered Tools include :

A. Audio Industry: Digital programs that convert written texts into audio, according to the specified default language, and then use it in websites, mobile applications, digital books, e-learning materials, documents, etc.

B: Expert Systems: Computer programs that simulate the behavior of a good human in using knowledge, issuing judgments and inference rules, and providing advice and appropriate solutions to problems. The good human is transferred to the good computer system by a knowledge engineer.

C. Educational Robotics : Educational robotics involves using electromechanical machines (robots) that can perform tasks based on programmed instructions. The roles of the robot during an educational activity can be classified as: as an educational tool, a counterpart to the teacher, or as a learning method for creating a robot. Learning is done about the robot, with the robot, and from the robot.

D. Intelligent Adaptive Learning: The use of artificial intelligence methods to meet the various educational needs of each learner. Computer algorithms derived from learner responses to questions can be used to adapt the presentation of educational materials, provide personalized resources, and learning activities that are most relevant to the learner's cognitive needs. They also provide targeted and immediate feedback without the need for a teacher.

E. Smart Educational Games: Computer-programmed games designed to achieve a specific educational goal. They are characterized by excitement, challenge, choice, and competition. They are designed to stimulate mental activity, increase concentration, improve the ability to make logical decisions, solve problems quickly, and strengthen relationships and social bonds.

G.Smart Evaluation: A computer program that can assess higher-order thinking skills, automatically grade complex assignments and tests, view a wide range of data, analyze learners' performance, identify their strengths and weaknesses, and provide timely support.

H. Optical Character Recognition (OCR) Software that converts printed or handwritten text into editable digital text. It analyzes documents, compares them to font databases, and uses algorithms to recognize unknown words.

I .Text Summarization

AI-powered tools that condense long texts into concise, readable summaries. These programs extract key information, enabling users to quickly grasp the main points from articles, posts, or documents.

2.7.Using Artificial Intelligence Applications in University Education

Marc Prensky (2013:98) argues that today's students, known as "Digital Natives," have undergone a radical transformation. They are not the students our educational curricula were designed for. Having grown up surrounded by modern technology, they spend most of their time using computers, smart devices, video games, digital music players, and other digital tools. As a result, they think and process information differently than previous generations. Therefore, educational materials and teaching methods need to be rethought and redesigned to suit the digital generation.

Similarly, Kuhail, M. A., et.al. (2023) note that expectations have changed significantly regarding teaching and learning processes at all educational levels, including higher education. These changes involve integrating intelligent educational systems. The incorporation of smart technologies into the educational process has become a modern necessity. Serious efforts are required to make these technologies a fundamental element in education. This is particularly important given that traditional education is no longer compatible with the emergence of smart technologies. Traditional teaching methods have become ineffective and fail to engage learners, as they do not align with their experiences and lifestyles outside the educational contexts .

The use of artificial intelligence in higher education enables the automation of various academic tasks, such as: Grading students, answering questions and assisting with career planning. AI-powered virtual assistants can provide personalized learning experiences. The integration of virtual and augmented reality creates immersive learning environments that enhance engagement and understanding. This technology can engage students in educational activities and research, facilitate remote participation and collaboration and enable massive open online courses (MOOCs) that allow thousands to learn from top universities worldwide .Additionally, universities leverage AI to analyze vast amounts of educational data, track student performance, predict student outcomes, and provide targeted support to prevent dropouts. (Government ,2017:1)

2.8.Global Developments in AI Education

In recent years, many university institutions worldwide have witnessed significant developments in establishing specializations focused on artificial intelligence. Globally, countries such as: United States, Canada , United Kingdom, Sweden and Netherlands have been at the forefront of offering academic degrees in artificial intelligence. In the Arab world, countries such as: Saudi Arabia , United Arab, Emirates , Egypt and Jordan have taken a prominent position in embracing artificial intelligence .

Several studies have explored the use of artificial intelligence applications in university education. For example, a study by Lin, C., et.al.(2023:56-76). found that using AI applications: Increases opportunities for self-learning among students , makes them active participants in the educational process and moves beyond traditional passive learning, where students rely solely on lectures and instructor explanations. AI-powered programs are characterized by: flexibility, modernity and Precision in setting standards and timelines. These programs: foster creativity and innovation among learners , produce outcomes that

align with desired goals .Moreover, leveraging AI is considered a key mechanism for harnessing technological advancements in education. By utilizing this technology, a permanent communication space is created between learners and instructors, facilitating efficient communication , time savings and reduced efforts . This supports the importance of the current study, which seeks to identify the reality of the use of these applications by faculty members at Maysan University, and the challenges facing their use in university education.

3.PREVIOUS STUDIES

Wang, Yu, Hu, & Li (2020) sought to explore the willingness of faculty members at universities in Anhui Province, People's Republic of China, to use artificial intelligence applications in education, in light of the diffusion theory of innovations, and its relationship to variables such as relative advantage, compatibility, trust, perceived advantage, and complexity. To achieve this goal, the study adopted a descriptive survey approach and relied on a random sampling method. A sample of 178 faculty members at universities in Anhui Province was randomly selected. The results showed that faculty members' use of artificial intelligence applications in education was low, and that relative advantage, compatibility, perceived trust, and perceived advantage were the factors contributing to determining faculty members' willingness to use intelligent teaching systems, while complexity had no effect. The university emphasized the readiness of faculty members to use smart teaching systems, and recommended encouraging faculty members to use artificial intelligence applications in education.

A study by Shin and Shin (2020) aimed to reveal elementary science teachers' awareness of AI applications, their knowledge of how to employ them in teaching, and their application methods. The study used a descriptive survey approach and relied on a random sampling method for a sample of 95 teachers in the capital and sub-cities. The results showed that teachers' awareness of AI applications that can be employed in education was low, and that science courses had the highest percentage of AI applications among elementary school courses, with 68.4% for the subjects of matter and space, 54.7% for exercise and energy, 32.6% for material states, and 27.4% for life. In light of the results, the study recommended... It is necessary to train teachers on artificial intelligence applications that can be used in training.

Yufeia, Salehb, Jiahuic & Syed (2020) The study aimed to establish the theoretical foundations of artificial intelligence in terms of its history, the most important milestones in its development, the practical aspects of artificial intelligence in education, and its best applications. The study employed a descriptive approach to this end, which suited its nature and achieved its objectives. It identified the most important milestones in the history and development of artificial intelligence, and revealed the most important practical aspects of artificial intelligence in education, represented by: the electronic grading system, timetable, virtual teachers, personalized learning, adaptive learning, virtual reality, augmented reality, distance learning, and others. The study also proposed a set of best applications for artificial intelligence in education, and recommended the necessity of employing artificial intelligence applications .

Zarrouki and Amir Falteh (2020) The study aimed to highlight the role of artificial intelligence in improving the quality of university education. It adopted a descriptive-analytical approach and concluded that: Artificial intelligence increases the opportunities for self-learning for learners, making them active participants in the educational process rather than just passive recipients. Furthermore, AI-based programs are characterized by flexibility, modernity, and precision in defining standards and setting a schedule related to program objectives. This supports learners in innovation and creativity. It also helps learners learn in the easiest ways, with the least possible time and effort. This ensures that university education guarantees many positive outcomes that benefit both teachers and learners, which in turn impacts the quality of educational programs in particular, and higher education institutions in general. The study recommended the need to pay attention to artificial intelligence. It is one of the most important modern applications that keeps pace with technological developments, and it prepares educational cadres capable of employing artificial intelligence applications.

Schaverien's 2001 study aimed to measure the effectiveness of teaching pre-service teachers in virtual classrooms at Seattle University in the United States. The results demonstrated that this technology offers many solutions to the difficulties facing the educational process, as well as the importance of implementing virtual classroom technology.

Benefits of Reviewing Previous Studies

Reviewing prior research offers several benefits:
1. Clarifies the problem and justifies the current study.
2. Identifies research gaps to inform the current study.
3. Provides theoretical frameworks to guide the current study.
4. Informs the current study with recommendations from credible research.

4.Study Methodology

To achieve the study's objectives, two methods were employed:

1.Descriptive-analytical method: To gather information and build the theoretical framework.
2. Survey method: To collect data from a large sample of faculty members at Maysan University, examining their use of AI applications and the challenges they face.

Study Population and Sample

The study targeted all 531 faculty members at Maysan University during the first semester of the 2024 academic year .A random sample of 300 faculty members from various colleges were selected . Responses from 299 participants were received.

Table 2 Distribution of the study sample according to (gender and academic degree) and the percentage of the sample to the total study population

Academic Rank	Sex				Total
	male		Female		
	N	Percentage	N	Percentage	
Junior lecturer	35	3.71%	52	0.51	87
Instructor	57	0.51%	47	3.61	104
Professor	45	9.71%	63	6.81	108
Total	151	2.05%	50	8.94	299

4.1.Study Instrument

To achieve the study's aims , a questionnaire is developed and utilized. The development process involves :

1. Defining the questionnaire's purpose: Aligning with the study's goals, the questionnaire aimed to:

2.Investigating faculty members' use of AI applications in education at Maysan University.

3.Identifying challenges hindering AI adoption.

4. Choosing the questionnaire as the primary tool due to its efficiency in collecting, organizing, and analyzing data.

Questionnaire Development

The questionnaire is constructed through:

1. Reviewing relevant literature and studies on AI applications in education.

2.Consulting specialists, including professors and educators, through surveys and interviews. This led to the development of an initial questionnaire version with 25 items across two main domains .

Validity and Refinement

The questionnaire's validity is ensured by:

1.Verifying face validity.

2. Seeking feedback from a panel of experts in educational design, technology, curricula, and training methods.

3. Revising the questionnaire based on expert feedback to produce the final version.

Questionnaire Reliability

The questionnaire's reliability is ensured by calculating internal consistency using Cronbach's alpha, which yielded a high coefficient of 0.88. This indicates strong internal consistency among the items. A five-point Likert scale was used, with responses weighted as follows :(**Very high**: 5 points, **High**: 4 points , **Medium**: 3 points, **Low**: 2 points and **Very low**: 1 point) . After verifying validity and reliability, the final questionnaire consisted of two main domains and 23 items.

4.2.Study Implementation

The study proceeded as follows:

A random sample of 300 faculty members was selected, and an electronic questionnaire was emailed to them. 299 responses were received and collected .The data was statistically analyzed, and results were extracted

4.3.Statistical Analysis

The following statistical methods are used: Means and standard deviations to describe responses to answer the study questions.

4.4.Results Analysis and Discussion

This section presents and discusses the findings related to the study's objectives, focusing on:

1. Answering the primary research question: "**What is the reality of faculty members' use of AI applications in education at Maysan University?**

TABLE (2) Means and Standard Deviations of the Reality of Faculty Members' Use of Artificial Intelligence Applications in Education at Maysan University.

Domain One : Assessing the Current State of Artificial Intelligence Adoption among Faculty Members at Maysan University	mean	Mean%	SD	order	Usage rate"
1.use robotics as an educational tool to facilitate learning and develop learners' educational performance	1.08	20.7	0.280	1	Very low
2. Highlight the strengths and weaknesses of learners' performance through Smart Evaluation applications.	1.06	20.1	0.259	2	Very Low
5.Provide intelligent adaptive learning to meet the different educational needs of each learner	1.03	20.2	0.251	3	Very low
7.offer solutions suitable for learners with little experience through expert systems programs	1.02	20.0	0.201	4	Very Low
3.Give the learner the opportunity to interact with, immerse himself in, control, and navigate the course using virtual reality technologies.	1.05	21.0	0.225	5	Very Low
1.Rely on responding to learners' inquiries through the use of smart chatbots.	1.02	19.8	0.178	6	Very Low
4.Convert textbook texts into audio files using audio industry applications.	1.03	20.6	0.161	7	Very Low
11.Summarize long texts accurately and easily for readers using Summarize Texts.	1.01	19.6	0.160	8	Very Low
10.Convert printed images or handwritten text into editable text files using highlighting and letter reading applications	1.02	19.6	0.189	9	Very Low
8. Use smart educational games that are based on excitement, challenge, imagination, and competition in the educational process.	1.02	19.5	0.198	10	Very Low
2. Enhance the explanation of various topics by adding an information layer and multiple forms of information to the digital content of the course through augmented reality applications	1.01	19.6	0.151	11	Very Low
	.045	20.9	0.153	-	Very low

Findings from Table 2

The results in Table 3, which examines faculty members' use of AI applications in education at Maysan University (items 1-11), reveal that: All items showed a very low degree of use. Specifically, educational robotics had a mean score of 1.08, indicating a very low level of adoption for facilitating education and enhancing learner performance. While highlighting learners' strengths and weaknesses using smart evaluation applications ranked second, with a mean score of 1.06 ; Providing intelligent adaptive learning to cater to individual learners'

needs ranked third, with a mean score of 1.03. 1. Fourth place: offering suitable solutions for learners with intermediate experience using Expert Systems (mean score: 1.02) .Giving learner interaction with courses using Virtual Reality occupies Fifth level with mean score: 1.05 As for " Responding to learner inquiries using smart Chatbots occupies the level six with mean score: 1.02. As for the educators who summarize long texts with extreme accuracy and in a way that was easy for readers to use, they ranked eighth using text summarization applications, with a mean score of 1.01.

The educators who convert written texts in the curriculum into audible audio files using audio industry applications, with a mean score of 1.02, it ranks ninth. The tenth place goes to: Using smart educational games based on suspense, challenge, imagination, and competition in the educational process, with an mean score of 1.02. As for the : I enhance the explanation of the various topics by adding an information layer and multiple forms of information to the digital content of the course through augmented reality applications. It is ranked last, with a mean score of 1.01.

The overall findings of the study reveal that faculty members at Maysan University have a very low level of adoption and utilization of artificial intelligence applications in education 2. Answering the second question, which states: " **What challenges do Maysan University faculty members encounter when using artificial intelligence applications in education?** To answer the question, the means and standard deviations are calculated for the responses of Maysan University faculty members on the second domain of challenges facing their use of artificial intelligence applications in education. The following table illustrates this:

TABLE (3) Means AND STANDARD DEVIATIONS OF THE **Challenges of AI Adoption in Education at Maysan University**

Domain Two : Challenges of AI Adoption in Education at Maysan University	mean	Mean%	SD	order	Usage rate"
16.The belief that using artificial intelligence applications in education requires more effort than traditional teaching methods.	4.89	97.2	0.211	1	Very high
14.Lack of the necessary technical support as required	4.88	98.0	0.230	2	Very High
12.Increase learners' awareness of the challenges they face when using artificial intelligence applications in education.	4.94	98.8	0.293	3	Very High
13.Learners' weak ability to solve problems they encounter when using artificial intelligence applications in education.	4.89	97.7	0.313	4	Very High
19.The number of learners in a classroom does not allow for control over the use of artificial intelligence applications in education	4.82	96.3	0.332	5	Very High
18.Poor response of learners to and interaction with the new style of learning	4.81	96.4	0.356	6	Very High
22.Lack of incentives for faculty members who use modern educational technologies	4.80	96.0	0.372	7	Very High
20. The heavy burden placed on faculty members prevents them from using artificial intelligence applications in education.	4.79	95.0	0.433	8	Very High
15.The high financial cost associated with equipping classrooms to use artificial intelligence applications	4.69	85.8	0.421	9	Very High
23.The lack of adequate training programs for the use of artificial intelligence applications in education	4.02	80.4	0.152	10	High
17.Lack of sufficient time to learn and practice the use of artificial intelligence applications in education.	4.01	80.2	0.223	11	High
21.Not enough time to use artificial intelligence applications during lectures	3.86	78.2	0.601	12	High
Total	4.676	93.5	0.104	0	Very high

It is noteworthy from the results in Table 3, which deals with the challenges facing the use of artificial intelligence applications in education by faculty members at Maysan University, which includes 12 items from 12 to 23: Items 16, 14, 12, 13, 19, 18, 22, 20, and 15 have a very high degree of challenges, while items 23, 17, and 21 had only a high degree. The belief that using artificial intelligence applications in education requires more effort than traditional teaching methods is the most prominent of these challenges, with a mean score of 4.89. In second place came the lack of technical support and the required images, with a mean score of 4.88. In third place comes the lack of awareness of the importance of using artificial intelligence applications in education. The mean score is 494. The weak ability of learners to deal with the challenges they face when using artificial intelligence applications in education came in fourth place, with a mean score of 4.89.

The fifth place with mean score 4.82 is occupied by the number of learners in the classroom, which does not allow for control over the use of artificial intelligence applications in education. The sixth place is occupied by the poor response of learners to the new style of learning and their interaction with it with a mean score 4.81. The seventh place is occupied by the weak incentives provided to faculty members who use modern educational technologies with a mean score was 4.80. The eighth place is occupied by the heavy burden faced by faculty members, which prevents them from using artificial intelligence applications in education with a mean score . 4.79, while the high financial cost associated with equipping classrooms to use artificial intelligence applications, including equipment, software, companies, etc., ranked ninth, with a mean score of 4.69. In tenth place is the lack of adequate training programs for the use of artificial intelligence applications in education, with a mean score of 4.02. The eleventh place is occupied by the lack of sufficient time to learn and train on the use of artificial intelligence applications in education, with an average score of 4.01. The lack of sufficient time to use artificial intelligence applications during lectures is ranked last, with a mean score of 3.96.

As it is noted from the results that Faculty members at Maysan University overwhelmingly agree that numerous challenges significantly hinder the adoption of artificial intelligence applications in education, with a very high degree of consensus.

Summary of Study Results:

The study's key conclusions are:

1.Maysan University faculty members have a very low level of adoption and utilization of artificial intelligence applications in education.

2. There is a strong consensus among faculty members about the presence of multiple significant challenges that hinder the use of AI applications in education.

5.Recommendations

Based on the study's findings, we recommend:

1. Providing training courses for faculty members and learners to enhance their awareness and skills in using artificial intelligence applications in education.

2. Encouraging faculty members to adopt modern smart methods in educational technology to optimize effort, time, and resources.
3. Offering incentives to faculty members who integrate AI applications into their teaching practices.
4. Fostering a positive attitude among faculty members toward AI adoption in education.
5. Equipping teaching staff with necessary tools and resources to effectively utilize AI applications.
6. Providing ongoing technical support to faculty members and learners to overcome AI-related challenges.

5.1.Recommendations for Future Studies

Based on the study's findings, potential areas for further research include:
1. Replicating the study in diverse educational institutions.
2.Investigating the effectiveness of AI applications in various curricula and their impact on skill development.
3.Advancing Arab research and knowledge on AI applications.
4.Identifying and surveying commonly used AI applications in education.
5.Exploring challenges and solutions for AI adoption across different educational levels.
6.Examining global experiences and best practices in AI-powered education.
7. Investigating AI's role in enhancing university education quality.

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