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The Reality of Using Artificial Intelligence Technology in Teaching by Hail University Professors

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Abstract

The objective of the research was to ascertain the extent of Artificial intelligence technologies (AIT) employed by Hail University professors in their teaching, as well as the correlation between this usage and the following factors: scientific specialization, academic rank, years of university teaching experience, and gender (male/female). The researcher employed the descriptive approach and a questionnaire instrument to gather data. The research population comprised all professors at Hail University, totaling 1,175 from various colleges, encompassing both genders. The research sample was obtained through stratified random sampling, consisting of 296 individuals, representing 25% of the original population size. The data were statistically analyzed with the Statistical Package for Social Sciences (SPSS) software, yielding the following results: Professors at Hail University employ (AIT)in teaching to a moderate extent, with statistically significant variations in their usage linked to the type of specialization. The findings indicate that engineering faculty utilize (AIT) more extensively in their instruction, followed by health faculty, and then humanities faculty. The results indicated statistically significant differences among Hail University professors regarding their utilization of (AIT), influenced by academic rank, favoring assistant and associate professors, followed by lecturers, and lastly, full professors. No statistically significant variations exist among Hail University instructors regarding the utilization of Artificial intelligence (AI) tools in teaching, as related to the factors of teaching experience and gender (male/female). The findings indicated that teachers at Hail University predominantly employ administrative analytical (AIT)in their teaching, followed by devoted educational interactive (AIT), and subsequently strategies that facilitate the educational process. Based on these findings, the researcher offered several recommendations and suggestions for subsequent research.

Keywords: *(AI), Hail University Professors, Reality of Use, Teaching.*

Introduction

At the end of the last century and the beginning of the current century in the first quarter of the third millennium, the world witnessed the greatest human invention that humanity has ever known, comparable to the discovery of steam, electricity, and the manufacture of machines and the boom they have caused in the field of industry, namely (AI), that giant that has baffled its inventors themselves with its extraordinary capabilities and the vastness of space before it for more creativity and innovation to generate new ideas that have astonished humanity and have entered all aspects of its economic, health, security, educational, and other life.

There is no doubt that the world today is moving towards a new global society in which the knowledge society and (AI) are the most important pillars. This transformation has coincided with the emergence of a new global awareness whose features are gradually taking shape. The result of awareness of the dangers of this information explosion and the contemporary technology revolution and the challenges it poses is clear, which is moving towards developing global intelligence through developing (AI) research that has moved from weak (AI) that simulates the human mental process to super (AI) that will be a strong competitor to humans in intelligence, perception, learning and decision-making (mentioned,2020).

The widespread and accelerating spread of (AI) in a manner similar to its capabilities has led to the need to think about finding a strategy that helps in how to deal with it in light of the emergence of many risks that have begun to appear as a result of this spread, including, for example, the ethical aspects related to its use. The recommendations of the UNESCO Intergovernmental Expert Meeting on the Draft Recommendation on the Ethics of (AI), via the Internet, stated:2020, (Member States ought to collaborate with international

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organizations, educational institutions, and both private and non-governmental entities to furnish sufficient educational resources that facilitate the public's understanding of (AI) across all levels in every country, thereby empowering individuals and mitigating the digital disparities arising from the extensive implementation of (AI) systems, as well as the disparities in access to digital means that this leads to) UNESCO (2021).

Academics and university professors concurred that the implementation of (AI) strategies in the education sector would transform the educational landscape, dismantling traditional paradigms reliant on indoctrination, and evolving the role of the teacher from that of an employee to that of an expert. The future of the educational process according to (AI) technology is clear with the emergence of what is known as the "robot teacher" that will help students and teachers alike in receiving the information necessary for learning, in addition to what this technology can change in terms of assessment tests for students in various academic and educational fields (Bakari Mukhtar,2022).

The Kingdom of Saudi Arabia has implemented national strategies for digital transformation and ambitious five-year plans in collaboration with government agencies. It has established three executive plans: the first from 2006 to 2010, the second from 2012 to 2016, and the third from 2019 to 2022. The key strategic pillars of these plans include digital health, digital education, digital trade, and smart cities. Alongside the digital transformation initiatives encompassed in "Saudi Vision 2030," which seek to expedite the shift to a digital economy (Qaloul and Talha, 2022). In 2020, the Kingdom of Saudi Arabia ranked first in the Arab world, while it reached 22nd place globally in terms of the "Tortoise Intelligence" (AI) index. The Kingdom aspired and achieved, and worked to create a feasibility study that would enable it to place it at the forefront of Arab and international countries that rely on (AI), as it established the Government Institute (SDAIA), which provides a large number of electronic services that link the government and citizens. The most prominent achievement that the Kingdom of Saudi Arabia has achieved in the domain of social communication is digital transformation, and the most substantial event in the field of (AI), which is the speed of the Internet to practice digitization, as the Kingdom of Saudi Arabia ranks fifth globally according to the "Speed Test" index statistics, which revealed in the first quarter of 2021 that there are three Arab countries on the list of the fastest mobile Internet services within the Top 5) outperforming major countries Like America, England and Germany in terms of internet speed, Saudi Arabia came in fifth place, outperforming Scandinavian countries such as Norway (Youssef, 2021). The number of smart government applications provided by the Kingdom of Saudi Arabia to citizens reached (210) applications, including (8) applications related to the education sector (Digital Government Authority, 2024).

Despite the tremendous technological revolution that (AI) has brought about in all aspects of life, the studies conducted on it do not match, in terms of quantity and quality, the speed of its spread and the intensity of its use in all fields, especially in the educational field. In a systematic study conducted by(Zawacki-Richter et al. 2019). The authors emphasized that hardly six percent of papers on (AI) applications in higher education are authored by scholars directly engaged in the educational sector. The researchers identified a considerable deficiency of material about the pedagogical and ethical ramifications of AI integration in higher education, highlighting the necessity for additional educational insights on AI advancements from practitioners in the field. Given that a significant portion of research undertaken by education faculty centers on teaching and learning, they are well-positioned to disseminate their findings to professors in other disciplines regarding the potential of AI in education. This research serves as a continuation of educators' efforts in this domain, reflecting the researcher's expertise in education, to assess the current application of (AI) technology in higher education institutions. A study was undertaken by the researcher to examine the tendencies of Hail University teachers regarding the utilization of (AI) technology in teaching (Mahmoud, 2024). This research is significant due to the critical role of (AI) and its substantial influence in higher education. The findings will reveal the extent of Hail University professors' utilization of (AIT) in education and offer recommendations to optimize their application within the educational framework. Additionally, it will propose avenues for future research that may inspire other scholars to pursue investigations into the integration of (AI) in higher education, aligning with the Kingdom of Saudi Arabia's ambitious objectives to excel in this domain.

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Theoretical Framework

(AI)

AI), abbreviated as AI, is a discipline that emerged from the modern technology revolution. The initiative commenced in 1956 at Dartmouth College in Hanover, USA, during a summer program orchestrated by four American scholars. (AI) was originally designed to replicate the diverse cognitive capacities of computers by comprehending the intricate mental processes executed by the human mind during thought and information processing. Subsequently, these cognitive processes are converted into corresponding computational processes that enhance the computer's capacity to resolve intricate issues. Consequently, (AI) was originally defined as: "A domain within computer science focused on programming machines to execute tasks that necessitate human-like intelligence." Luger: 2004The researcher defines it procedurally in this study as "the process of emulating human intelligence through computers, leveraging their capacity to store extensive data pertinent to the description and analysis of human behavior, processing it, and applying it in analogous situations." (AI) is founded on two principles: data representation, which involves encoding troublesome material in a manner that enables the computer to process and produce it in a suitable format. The second concept is search, defined as the cognitive process wherein the computer explores available choices, assesses them based on predetermined or self-derived criteria, and subsequently selects the most suitable answer (Youssef, 2021). (AI) seeks to facilitate machines in processing information akin to human problem-solving, specifically through parallel processing that allows for the simultaneous execution of multiple commands, and to enhance the comprehension of human intelligence by deciphering the complexities of the brain for simulation purposes (Afifi, 2014). (AI) has witnessed a steady and rapid development that has passed through three generations, starting with narrow (AI), passing through strong (AI), and reaching super (AI) in the third generation.

(AIT) are numerous and varied according to the nature of the technology itself, its mechanism of action, and the method of its use. (AIT) are used in all fields that serve humanity, such as security, defense, economic and service activities such as health, education, and other fields. (The most famous (AIT) in the educational field are, firstly: machine learning Machine Learning (ML) has elevated (AI) beyond the application of predetermined rules. Consequently, machine learning has transformed the function of algorithms formerly employed within the realm of (AI). It allows computers to acquire knowledge from their data by establishing connections among them. Secondly, Deep Learning (DL) represents an advanced tier of Machine Learning (ML) that utilizes algorithms capable of autonomous learning, leveraging extensive data sets (big data) and the computational capabilities of servers, processors, and cloud computing. Thirdly, Natural Language Processing (NLP) is an application of Machine Learning (ML) and Deep Learning (DL) that seeks to detect voice and analyze extensive data sets (text samples) that include context, linguistic and grammatical vocabulary, and semantic meanings (Youssef, 2021).

The public discovered generative AI in November 2022 when it launchedChat GPT, which has become the fastest-growing application in history, and as it is capable of generating texts, images, videos, music, and program codes, generative AI tools will have a significant impact on education and research. Generative AI has become widely used for its ability to simulate human language, which has necessitated conducting many studies on it to determine its benefits in teaching, as the company (OpenAI), which produces it, indicated that it can revolutionize the field of education if used appropriately, as it can be used to retrieve information, answer some inquiries, participate in open conversations and discussions, assist in teaching, create software codes, and translate texts into several languages. (OpenAI, R. 2023). Also, among the most popular text-based generative AI tools is the Bing Chat application, which was launched in February 2023 by Microsoft and works as a smart assistant to provide an integrated search and conversation experience using the Bing engine. It provides three conversation styles: Creative, Balanced, and Precise. It is characterized by the ability to perform a wide range of tasks, such as answering questions, summarizing, producing codes, and also generating artistic images. Another application is the Bard application, which was launched by Google in March 2023 and can understand and generate text content in various formats. It is based on the modern Palm 2 linguistic model from Google, which deals with a large number of languages and dialects, and can be used in writing, programming, summarizing, translation, and various creative tasks. Another application

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is the (Claude) application, which was launched by Anthropic in March 2023 with features almost similar to the (ChatGPT) application, and has the ability to handle a very large input volume equal to the size of a book (about 75 thousand words). It can answer questions, simplify information and writing, and most importantly, deal with large documents, as it can summarize long documents and also read more than one document at the same time and extract information from them. One of the most common text-based generative (AI) applications is the ((Perplexity) application, which was launched in April 2023 by the ((Perplexity) company, where it works as an intelligent search assistant that can provide answers to questions asked by searching several databases and websites with reference to sources, and is used to answer questions in writing, solve mathematical equations, programming, and others. Generative (AI) can be used as a support tool for the professor to reduce the time allocated to performing routine tasks related to courses such as preparing lesson plans, formulating questions, and summarizing content. It can also be used to evaluate student work and provide appropriate feedback. On the other hand, course presentation methods can be improved and deliver it in a way that is consistent with different student learning styles. (SDAIA, 2023). Ray Schroeder (2024) stated that it is almost certain that by the fall semester of 2025, or shortly thereafter, we will see the increasing use of generative AI as teachers. We will already be relying on applications to help us design curricula, learning outcomes, assessment criteria, and more. AI will moderate discussion forums, act as teachers like Khanmijoo, and adaptive learning will orchestrate the emergence of artificial teachers, perhaps under the supervision of human head teachers. At first, it will mark a significant milestone in the advancement of AI in higher education, and it will likely not come without some resistance from faculty, students, unions, and others. However, I believe that the capabilities, economics, and efficiencies of advanced AI are likely to prevail. Jordan Shapiro (2021) observed that AI will furnish educators with tools that enhance their efficacy and reduce their workload by supplying the necessary information for the swift and effective evaluation and enhancement of both their own and their pupils' performance. Shapiro argues that educational technology is a powerful tool for teachers, allowing them to do more effectively because it provides data and information about students' academic performance, success, and failure. Ahmed Bely (2024) pointed out the benefits that students gain from using modern technologies, which include providing various summaries, calculating grades electronically, making study schedules available to all students, freedom to ask questions, and the majority of students preferring the self-learning method, which creates distinguished students who are capable of critical thinking and solving any problem they may encounter in their practical lives.

The guide on generative (AI) in education issued by the Saudi Data and (AI) Authority (SDAIA) Some key points about the future trends of generative AI technologies in education: In the field of tools and applications: The capabilities of generative AI will continue to develop at a rapid pace, and educational institutions will integrate the use of generative AI into teaching in a codified and organized manner, and new tools will emerge to detect cheating using generative AI, and some educational or private institutions will develop language models specific to the educational field. In the field of educational skills: Educational institutions will have to reconsider learning objectives and assessment methods to align them with the capabilities of (AI), and the focus on critical thinking skills, analysis, and information scrutiny will become high priorities. In the field of ethics and policies: Continuous review of educational policies and practices will be required as generative AI technologies develop, and teaching students about ethical methods for using generative AI will become an important part of educational curricula.

The most significant applications of (AI) in education are as follows: (Al-Farani and Al-Hajili, 2020), Bakr and Taha (2019),Vincent-Lancrin & Reyer van der Vlies, 2020; Luckin, R; Holmes, W; Griffiths & Forcier,2016; Murphy, 2019; Holmes, Bialik & Fadel, 2019):

1. Automate grading and assessment (Automated Grading): AI can facilitate the grading of multiple-choice examinations by tracking student performance within the educational setting, enabling a machine to assess students and allowing educators to dedicate more time to individual student interaction. (AI) possesses significant potential to automate and expedite administrative operations for corporations and educators alike.

2. Smart content: Robots possess the capability to generate digital content with human-like proficiency, while AI can facilitate the digitization of textbooks and the creation of

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configurable digital learning interfaces suitable for students across all ages and educational levels. A system is employed to distill textbook material into a more accessible study guide featuring chapter summaries, practice assessments, and flashcards. Another platform enables educators to create digital curricula and content across several platforms, including video, audio, and online assistants.

3. Virtual brokers (Virtual Facilitators): AI can collaborate with virtual reality technology. Students can attain profound comprehension of previously inconceivable knowledge, provided with a dynamic learning environment that fosters exploration and independent study.

4. Smart teaching systemsIntelligent teaching system): One of the most common applications of (AI) in education, it provides step-by-step educational lessons customized for each student through topics in well-defined organized fields such as mathematics or physics. Intelligent teaching systems use (AIT)to simulate individual human teaching and provide educational activities that best match the cognitive needs of the learner and provide targeted feedback in a timely manner.

5. Smart educational games are computer-programmed games designed to achieve specific educational objectives. They are characterized by excitement, challenge, creativity, and competition, stimulating cognitive activity, enhancing concentration, improving logical decision-making abilities, facilitating rapid problem-solving, and strengthening social relationships and connections.

6. Teacher feedback: A premier application of (AI) in education and an invaluable resource for assessing student achievement. This program utilizes various advanced technologies, including (AI) chatbots, e-learning, and machine learning, as well as facilitating discussions akin to interviews. It involves monitoring the conversation's parameters and adjusting them based on the student's responses, which indicate their personality and educational level.

7. Personal Education (Personalized Learning): This application addresses the individual needs of each learner, offering a range of educational programs designed to enhance and expedite their learning efficiency. This program aids in recognizing the learner's deficiencies and addressing them through the accompanying educational modules.

8. Adaptive learning (Adaptive Learning): Adaptive learning represents a significant and valuable application of (AI) in education, facilitating substantial advancements by providing individualized instruction. It allows for modifications to educational pathways and curricula as needed, while offering teachers comprehensive reports on the subjects that students struggle to grasp and comprehend.

9. Distance learning (Proctoring): Distance learning is regarded as one of the most contemporary forms of education. This contemporary technology encompasses the capability to conduct examinations remotely, as well as the implementation of (AI) monitoring systems to oversee students and ensure the absence of academic dishonesty. This is a method for verifying the test's credibility and correctness.

10. Helping people with special needs (Helping people with special needs) (AI)-based learning programs, known as smart learning programs, can help deaf students adapt to and understand the educational material and acquire life skills. The development of (AI) technology and the use of its applications in education have played an effective role in developing the educational process, as smart education systems with interactive multimedia (Interactive Multimedia) Intelligent Tutoring System (IMTS) are widely used in the educational field, especially with people with special needs in all their categories, as

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these programs provide many methods of communication, including images, drawings, videos, and other stimuli necessary to deal with people with special needs. (Megahed, 2020)

11. Chatbots: A chatbot is a program that emulates human communication, facilitating interaction between the user and the software or partnering system. The interaction occurs through text or voice messaging. It is constructed and engineered to operate autonomously without human involvement, providing responses to inquiries in a manner that mimics a real person. It is integrated with the facility's system, and its responses are generated from a repository of questions and databases to which it is connected (Freyer, 2019).

12. Expert system: An expert system is a prominent domain within (AI), which is regarded as the most formidable sector of computer science. These are programs that replicate the capabilities of a human expert in a particular domain by gathering and utilizing the knowledge and skills of one or more specialists in that subject (Al-Faqih, 2012).

(AI) applications can be classified into three main groups based on their uses in university teaching. This classification is not final and may change with the development of (AIT). Some applications may belong to more than one group. This classification greatly helps in understanding how (AI) is used in university teaching. The researcher adopted this classification in this research as the study's axes. The classification consists of the following groups:

1. The first group: Interactive and personalized educational applications: This includes applications (personalized learning, adaptive learning, collaborative learning, virtual reality and smart chatbots, smart assistants, in addition to smart educational games, augmented reality, and simulated training).

2. The second group: Analytical and administrative applications: These include applications (student interaction analysis, text summarization, natural language processing, pattern and shape recognition, smart student assessment, automation of grades and assessment, providing feedback, analysis of data and academic patterns, monitoring of attendance and activities, in addition to career guidance, alerts and smart appointment organization).

3. The third group: Applications supporting educational processes: These include applications (expert systems programs, voice production, letter recognition and reading, and education management system,Blackboard).

Certain studies have examined the application of (AI) technology inside the realm of education. The researcher has gained from these studies both theoretically and practically, enhancing the research and its instrumentation. Numerous studies have demonstrated the advantages of employing (AI) in education across all facets of the educational process at its diverse stages. This discussion centers on research pertaining to higher education, emphasizing the significance of integrating (AI) in pedagogy and the substantial transformation it has engendered in the educational process, affecting stakeholders including students, faculty, the academic environment, and scientific inquiry. One of these studies is by Bakari Mukhtar (2022), which concluded that (AI) evolved from theories and philosophy to rules and laws governing machine intelligence, subsequently to learning algorithms. Today, it has transcended these stages and is no longer merely a science or algorithms; it has emerged as an industrial revolution akin to the invention of the steam engine, electricity, and digital chips. The significance of instructional methods utilizing (AIT)lies in their unique influence on enhancing cognitive achievement through activities that adapt to learners' needs and facilitate collaborative learning opportunities. A crucial aspect of developing teaching methodologies with (AIT) is minimizing the time and expense associated with establishing these systems, as intelligent applications based on (AI) enable learners to liberate themselves from a singular approach to instruction. For instance, intelligent private lesson software and diverse educational platforms have been tailored to align with each student's preferences, trends, and requirements. There is insufficient engagement in instructing educators and students to utilize contemporary technologies. The study advocated for the integration of (AI) into educational curricula from foundational levels, tailored to each

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educational stage, and the initiation of university programs that align with anticipated shifts in future employment due to (AI) in the context of the Fourth Industrial Revolution. Al-Tantawi (2025) examined the role of (AI) in enhancing university education. Her study aimed to ascertain the significance of integrating (AI) in university education, assess the challenges associated with its implementation, and formulate a vision for the future applications of (AI) in academia. To achieve the research objectives, she employed a descriptive methodology and utilized a questionnaire, which was administered to a sample of 40 faculty members at the Faculty of Computers and Information at Mansoura University. The findings demonstrated the influence of (AI) on the advancement of university education, enhancing scientific research and the quality of education, while also tailoring instruction to meet individual student needs with greater precision and objectivity than conventional methods. The problems of implementing (AI) in university education include issues regarding privacy and data security, insufficient technological skills among faculty and students, inadequate money, and institutional reluctance to change. Consensus exists that the implementation of (AI) in education enhances educational quality and elevates student learning outcomes by evaluating data and discovering as well as rectifying deficiencies in educational processes (Kusek & Cook, 2019; Ally, 2019). It can enhance the learning experience and tailor education to address the specific requirements of students. Grassini (2023) affirmed that the integration of (AI) and intelligent chat applications in education boosts innovative pedagogical tactics, improves student learning results, and establishes an effective educational framework to address future labor market demands. (Alwazzan, 2023) addressed in her study that aimed to explore the potential of Chatbots in enhancing digital dialogue for students and to know the main features of chatbots that can contribute to the feasibility of facilitating digital dialogue, to improve students' communication skills through discussions and dialogues, as the study used the descriptive approach and a questionnaire applied to 35 educational experts on the use of chatbots supported by (AI) in digital dialogue skills, and the results revealed that (AI) Chatbots can be effectively integrated into educational practices to facilitate purposeful dialogue between students, and the study (Abdul-Mawla and Suleiman, 2023) confirmed that it aimed to identify the extent to which (AI) applications contribute to supporting the quality of performance of Egyptian universities from the point of view of faculty members, as the researchers conducted a survey study and a number of interviews with faculty members, and they also applied the research tool (questionnaire) to a random sample of faculty members at Aswan University, where the research sample consisted of 245 faculty members, and the research reached a set of results, the most important of which is the absence of statistically significant differences at the level of (0.01) on the importance of using (AI) applications in supporting the quality of performance of Egyptian universities according to the variables of academic degree and professional experience, and the presence of statistically significant differences at the level (0.01) on the importance of using (AI) applications in supporting the quality of performance of Egyptian universities according to the variable of college type in favor of practical colleges. The study (2023, Lakshmi, A. Jaya, et al) addressed the pressing inquiry regarding how (AI) can enhance e-learning by making it more engaging, effective, and personalized for individual learners. The findings indicate that digital technology significantly influences all facets of higher education when backed by institutional support. The findings demonstrate that the organization is instrumental in incorporating digital technology into education, hence enhancing learning outcomes and increasing access to technical education. A study conducted by Kabdani and Baden (2021) sought to ascertain the significance of (AI) applications in Algerian higher education institutions and their impact on educational quality in accordance with established international standards. Initial data were gathered through a questionnaire distributed to a sample of 109 professors, employing various descriptive and inferential statistical methods to test the hypotheses. The findings indicated that the implementation of (AI) applications in Algerian higher education is currently a priority, with over 81% support from the sample. Furthermore, the respondents emphasized the urgent necessity for these applications across all scientific and human disciplines, highlighting their substantial contribution to enhancing educational quality. The study concluded that no statistically significant differences exist regarding the relevance of utilizing these applications to ensure quality, irrespective of academic degree, job rank, or professional experience. Notwithstanding the significant advantages of (AI) in education highlighted in prior research, the actual implementation in higher education institutions across various countries has been inconsistent. This inconsistency arises from differing contextual factors, including the perspectives of faculty, students, and society regarding its application, as well as the adequacy of infrastructure, such as internet access, technical support, and educators' capacity to fully integrate it into the educational process. Several methodological

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investigations were undertaken to examine research pertaining to (AI) in education, including a study by Ou Yang, F., Cheng, L., & Jiao, B. The 2022 study sought to systematically review automatic interactive learning in online higher education, examining literature on AI usage from 2011 to 2020. The findings indicated that performance prediction, resource recommendation, automatic evaluation, and enhancement of the learning experience are the four primary functions of AI applications in this domain. The study conducted by Abdo, Younis, and Al-Haroun (2024) examines the actual utilization of (AI) applications by faculty members at Sadat City University. The researcher employed a descriptive correlational methodology and administered a questionnaire to a sample of 247 faculty members from the faculties and institutes of Sadat City University. The research yielded several findings, the most significant of which indicate that faculty members at Sadat City University utilize (AI) applications at an average level of 65.3, according to the study sample. Furthermore, there were no statistically significant differences at a significance level of 0.05 among the average responses of the study sample members regarding the use of (AI) applications, with respect to the variables of gender (male/female), college type (theoretical/scientific/both), and academic rank (professor/assistant professor/instructor). The study conducted by Al-Ghamdi and Al-Anzi (2024) examined the implementation of (AI) in education. Data was gathered via an electronic questionnaire distributed to a deliberately selected random sample of 156 faculty members and 39 employees from the Deanship of Electronic Transactions and Communications across several universities in Riyadh. The study yielded several findings, the most significant of which is that employees of the Deanship of Electronic Transactions and Communications at certain Riyadh universities rated the implementation of e-learning at a (high) level. In contrast, their assessment of the universities' capacity to integrate (AI) applications in e-learning was rated at a (medium) level. Faculty members from some Riyadh universities evaluated their scientific knowledge of (AI) as (medium), yet their readiness to utilize (AI) applications in e-learning was rated at a (high) level. Lastly, the results indicated that faculty members across Riyadh universities generally concurred at a (high) level regarding the existence of various obstacles hindering the application of (AI) in e-learning. Based on the findings, the researchers proposed several recommendations, including the formulation of a definitive strategy by universities for the integration of (AI) applications in e-learning, as well as the organization of regular workshops for faculty members to familiarize them with advancements in (AI) applications. Al-Subhi's study (2020) sought to ascertain the current utilization of (AI) applications by faculty members at Najran University, their applicability in the educational process, the challenges encountered in their implementation, and the correlation of certain variables, such as gender and academic degree, with this usage. The study utilized both the descriptive (analytical) approach and the descriptive (survey) method, administering a questionnaire to a sample of 301 faculty members at Najran University during the first semester of the academic year 1442 AH. The findings indicated that the utilization of (AI) applications in education by faculty members at Najran University was minimal, and there was significant consensus regarding the numerous hurdles hindering the adoption of these applications. The findings indicated that the utilization of (AI) applications by faculty members was unaffected by the variables of gender or academic degree. Al-Awbathani's study (2021) examined the implementation of e-learning at Shaqra University in the Kingdom of Saudi Arabia from the perspective of faculty members and its correlation with various variables. The study sample comprised 110 faculty members from Shaqra University and its affiliated colleges. The study's results indicated that faculty members frequently utilize various forms of e-learning; however, they encounter obstacles that hinder its implementation. The most significant challenges include the teaching responsibilities assigned to faculty, the unsuitability of training course schedules, and the absence of incentives. The findings indicated the primary recommendations for advancing e-learning, which include enhancing the infrastructure for e-learning and incentivizing faculty members to engage with e-learning platforms. The findings indicated no statistically significant differences in faculty members' opinions regarding the implementation of e-learning, attributable to the gender variable. Among the research examining the utilization of (AIT) in education is the study by Al-Qahtani and Al-Dael (2023), which sought to assess the reality of employing (AIT) at Princess Nourah bint Abdulrahman University from the perspective of faculty members and their attitudes towards it. The study employed a descriptive analytical technique, with a sample including 207 faculty members from Princess Nourah bint Abdulrahman University. The researchers developed a questionnaire comprising 30 items, categorized into four domains: the actual utilization of (AIT) by faculty members, the university's approach to adopting and investing in (AIT), the promotion of scientific research in (AI), and community service related to (AI). The findings indicated that the utilization of (AIT) by faculty members at Princess Nourah bint Abdulrahman

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University was rated as high, while the university's commitment to implementing these technologies was assessed as medium across the three domains of education, scientific research, and community service. The findings indicated disparities in faculty members' estimates based on the characteristics of specialization, technological proficiency, and English language competency. The investigation culminated in a series of recommendations and ideas. The research conducted by Al-Muqaiti and Abu Al-Ala (2021) examined the implementation of (AI) and its correlation with the performance quality of Jordanian universities as perceived by faculty members. The study sample comprised 370 faculty members. The study employed a descriptive correlational methodology and constructed a questionnaire comprising three sections: demographic information, assessment of (AI) utilization, and evaluation of performance quality in Jordanian universities. The study's results indicated that the level of (AI) utilization in Jordanian universities, as perceived by faculty members, was average. The results indicated no statistically significant differences in the utilization of (AI) based on the variables of gender, academic rank, or years of experience; however, differences were observed according to the type of college, favoring scientific colleges. The findings indicated that the performance quality of Jordanian universities was rated as average, with no statistically significant differences observed based on gender, academic rank, years of experience, or type of college. The findings revealed a statistically significant association between the extent of (AI) utilization and the overall performance quality of Jordanian universities, as perceived by faculty members. A study conducted by Otaibi and Alshehri (2023) examined the opportunities and challenges associated with the implementation of AI-based learning outcomes in higher education institutions in the Kingdom of Saudi Arabia. Data was gathered through an analysis of recent articles, book chapters, and review papers published between 2011 and 2022. The findings indicated that a significant challenge in implementing AI-based learning is the necessity for educators to acquire new technological skills to utilize AI effectively in their teaching. Additionally, it is imperative for educators to master the use of tools and comprehend their applications when integrating AI systems in universities. The findings indicated that establishing the technical infrastructure and devoting adequate financial resources for programs, devices, and training are essential aspects for the successful use of AI in higher education. The primary recommendations included enhancing learning environments through the utilization of AI technology and the strategic development and execution of AI solutions with optimal efficiency and effectiveness. The research indicated that Saudi universities are proactively incorporating AI into the educational framework to match with Saudi Vision 2030, underscoring the significance of integrating AI inside higher education institutions. To address forthcoming educational difficulties and improve the quality of instruction. A comparative analysis between the Kingdom of Saudi Arabia and Singapore. The study conducted by Elmohimeed in 2024 aimed to examine the influence of the digital economy on the advancement of higher education systems in the two countries by analyzing how digital transformation enhances the educational process and boosts the efficacy of higher education, emphasizing the application of digital technologies such as (AI), machine learning, and big data. The primary findings indicate that Singapore serves as a premier model for digital education due to its sophisticated infrastructure and policies that promote technology and innovation in the educational sector. The Kingdom of Saudi Arabia aims, under Vision 2030, to expedite digital transformation through investments in infrastructure and the enhancement of digital competencies for students and educators. The researcher proposed several recommendations, notably: the incorporation of digital technologies into curricula, and the imperative for higher education institutions in the Kingdom of Saudi Arabia to expedite the integration of technologies such as (AI), machine learning, and data analysis into educational programs. Furthermore, universities should be encouraged to formulate curricula that align with digital transformation and to equip students with advanced digital skills that correspond to labor market demands.

The use of (AI) in higher education faces many challenges that affect the degree of its use. Among these challenges is what Zigum Abdelkader (2024) pointed out that although (AI) has the potential to achieve tremendous benefits for the university, it also raises some ethical questions that seem very important, especially with regard to privacy and system security. Therefore, it has become necessary for higher education that relies on (AI) to manage its complex systems with great care to ensure some requirements related to ethics, data privacy, and equality in access to education. This problem, which is one of the challenges facing (AI), can be answered if higher education institutions are able to control the continuous and rapid progress of (AI), and think about an ethical and organized approach that would reduce the risks of (AI). In the end, we conclude that it is clear that the adoption of (AIT) and tools in higher education will

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take some time to fully and correctly integrate them into the educational process at the university level. The higher education sector cannot flourish unless its universities deal with current and future challenges, and show confidence in using technology to transfer learning and education. The study of Hamayel (2023) warned of the widespread adoption of (AIT) to a large extent on the human condition in ways that are not yet well understood. The unintended negative consequences of (AI) applications and technologies in many fields are increasing day after day, and warnings are being issued by more than one party, especially for the ethical implications of using (AI) in university education. This study aimed to identify the global standards proposed by international associations and bodies for (AI) that are concerned with the ethics of (AI) in education. The current study adopted the descriptive approach, through extrapolation and analysis of studies, research, books, periodicals and websites to research the ethical considerations surrounding (AI) in university education from a global perspective and explore the ethical challenges of integrating (AI) into university education, with the aim of reaching the opportunities provided by (AI) to enhance the use of (AIT) in education. The study proposed a roadmap for universities to develop and implement responsible and effective policies for the use of (AI) in university education, and also presented a set of the most famous international references and systems concerned with the ethics of (AI) in education. While the study (2023.Yang et al) Challenges facing the sustainable development of AI programs in education in the technical challenge of the need to develop new AI technologies that meet educational requirements, the pedagogical challenge of the need to develop effective educational curricula for teaching AI, in addition to the organizational challenge of the need to develop organizational support systems for AI programs. Stefania Giannini (2021), Assistant Director-General for Education at UNESCO, pointed out that the increasing use of new AI technologies in education will only benefit humanity as a whole if it promotes - throughout the design process - human-centered curricula in the field of pedagogy, and respect for ethical rules and standards. AI should be directed towards improving learning for each student, empowering teachers, and enhancing learning management systems. Moreover, preparing students and all citizens to live and work safely and effectively using AI is a common challenge at the global level. UNESCO warned, in June 2023, of the very rapid spread of AI in schools, and the lack of monitoring, rules and controls, which is a cause for concern (Ben Williamson, 2023). The challenges facing the use of (AI) in education, which were indicated by previous studies, can be summarized as follows: it requires an equipped infrastructure supported by high-speed internet networks available to teachers and all students, which entails a high financial cost, in addition to trained human cadres, in addition to challenges related to ethical aspects, lack of personal privacy, in addition to psychological challenges related to the attitudes of some teachers and society towards the use of (AI) in education, and the possibility of many workers in education administration losing their jobs that will be performed by (AI).

Research Methodology and Procedures

The research problem can be summarized in the following two questions: What is the reality of Hail University professors' use of (AI) technology in teaching? What is the relationship between each of (scientific specialization, academic rank, years of experience in university teaching, and gender "male/female" of Hail University professors and the degree of their use of (AI) technology in teaching? Accordingly, the research aims to know the reality of Hail University professors' use of (AI) technology in teaching in light of some variables. The research hypotheses were formulated as follows:

- The first hypothesis: Hail University professors use (AI) technology in the teaching process to a high degree.

- The second hypothesis: There are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributed to the variable of specialization type.

- The third hypothesis: There are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributed to the variable of academic rank.

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- The fourth hypothesis: There are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributable to the variable of years of teaching experience.

- The fifth hypothesis: There are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributable to the gender variable (male/female).

- The sixth hypothesis: Hail University professors use interactive educational (AIT), administrative analytical technologies, and technologies that support the educational process in teaching to an equal degree.

Research community and sample

The research community consists of all professors at Hail University. University of Hail is located in the city of Hail in the Hail region of the Kingdom of Saudi Arabia, which was established by royal decree on Tuesday, June 7, 2005, and includes 20 theoretical and applied colleges https://www.uoh.edu.sa. The number of members of the research community is (1175) male and female professors in all theoretical and applied colleges of the university in its three tracks (humanities, health, and engineering). A representative sample of the research community was taken using the stratified random sample method, where the sample size was (296) faculty members at a percentage of (25%) of the original research community size, and the sample was distributed as follows:

1/ Sample distribution by gender (male/female):

Table No. (1) shows the distribution of the sample according to gender (males/females)

Gender	number	percentage
Males	160	54%
Females	136	46%
the total	296	100%

2/ Distribution of the sample according to the college specialization (humanities/health/engineering):

Table No. (2): Shows the distribution of sample members according to specializationCollege (Humanities/Health/Engineering):

College major	number	percentage
humanitarian	166	56%
healthy	92	31%
geometric	38	13%
the total	296	100%

3/ Distribution of the sample according to job rank:

Table No. (3): Shows the distribution of sample members according to job rank.

Job rank	number	percentage
Mr	20	7%
Associate Professor	72	24%
assistant professor	190	64%
lecturer	14	5%
the total	296	100%

4/ Distribution of the sample according to years of experience in university teaching:

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Table No. (4): Shows the distribution of sample members according to years of experience in university teaching.

Years of Experience Categories	number	percentage
(0 – 5)	42	14%
(5 – 10)	98	33%
(more than 10)	156	53%
the total	296	100%

Search tool

To verify the validity of the hypotheses, the researcher used the descriptive approach that describes the phenomenon under study, analyzes it, and highlights the factors affecting it, using the questionnaire tool to collect information from the sample members, which was designed and constructed by the researcher in several steps, starting with defining its objectives, then limiting its topics and writing its paragraphs in their initial form, amounting to (28) phrases that included (AI) applications that can be used in university teaching. The aforementioned (AI) applications were divided into three main groups based on their uses in university teaching, as follows: The first group included dedicated interactive and educational applications, the second group included analytical and administrative applications, while the third group included applications that support the educational process. The five-point Likert scale was chosen to indicate the degree to which the sample members used (AI) technology in teaching as follows: (very much, to a large extent, to a medium extent, to a low extent, I do not use). To determine the validity of the questionnaire phrases, they were presented to a committee of arbitrators from specialists in curricula, teaching methods, and educational technologies. Some phrases were deleted and others were modified, so that the questionnaire phrases became (25) phrases. The internal consistency of the questionnaire items was measured using Pearson's correlation coefficient, and the result for the statements of the first dimension (dedicated interactive and educational applications) was as shown in Table No. (5):

Table No. (5): It shows the internal consistency of the statements of the first dimension of the questionnaire.

phrases	Correlation by dimension	Total degree correlation	Total dimension correlation
7	.894	.879	.965
8	.925	.902	
9	.865	.839	
10	.886	.853	
11	.871	.822	
12	.877**	.848**	
14	.923	.882	
15	.918	.874	
16	.905	.888	

We note from the table (5) There are high correlations between the items in the dimension and the total score of the questionnaire, as the internal consistency correlation coefficients range between (.902) to (.822), and the items were also linked to the sub-dimension and the total score, and the total correlation coefficient for the statements of the first dimension of the questionnaire reached (.965), which is a high correlation and highly statistically significant at the 0.01 level. The result for the statements of the second dimension of the questionnaire (analytical and administrative applications) came as shown in Table No. (6):

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Table No. (6): It shows the internal consistency of the statements of the second dimension of the questionnaire.

phrases	Correlation by dimension	Total degree correlation	Total dimension correlation
2	.836	.861	.972
4	.849	.871	
5	.774	.811	
6	.818	.863	
7	.888	.859	
18	.785	.707	
19	.880	.825	
20	.869	.815	
21	.806	.715	
22	.877	.860	
23	.874	.831	
24	.972	.972	

We note from the table (6) There are high correlations between the items in the dimension and the total score of the questionnaire, as the internal consistency correlation coefficients range between (.871) to (.707), and the items were also linked to the sub-dimension and the total score, and the total correlation coefficient for the statements of the second dimension of the questionnaire was (.972) which is a high and statistically significant correlation at the level of0.01. The result for the statements of the third dimension of the questionnaire (applications supporting the educational process) came as shown in Table No. (7):

Table No. (7): It shows the internal consistency of the statements of the third dimension of the questionnaire.

phrases	Correlation by dimension	Total degree correlation	Total dimension correlation
1	.845	.841	.948
3	.842	.792	
13	.848	.796	
17	.710	.649	

We note from the table (7) There are high correlations between the items and the dimension and the total score of the questionnaire, as the internal consistency correlation coefficients range between (.841) and (.649). The items were also correlated with the sub-dimension and the total score, and the total correlation coefficient for the phrases of the second dimension of the questionnaire reached (.948), which is a high correlation and highly statistically significant at the 0.01 level.

To measure the stability of the questionnaire, the researcher used Cronbach's alpha and omega stability coefficients, and the results were as shown in Table No. (8):

Table No. (8): The reliability coefficient of the questionnaire is shown according to McDonald's and Cronbach's equations:

Questionnaire dimensions	Cronbach'sα	McDonald'sω	The equation
First dimension	0.969	0.969	stability coefficient
The second dimension	0.959	0.959	
The third dimension	0.828	0.823	
Total dimensions	0.919	0.917	Overall stability coefficient

From Table (8), we note that the stability coefficient of the first dimension of the questionnaire reached (0.969) according to the equationMcDonald's, as well as (0.969) according to Cronbach's equation, and the

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reliability coefficient for the second dimension of the questionnaire was (0.959) according to McDonald's and Cronbach's equations, while the reliability coefficient for the third dimension of the questionnaire was (0.823) according to McDonald's equation, and (0.828) according to Cronbach's equation, and the overall reliability coefficient of the questionnaire was (0.917) according to McDonald's equation, and (0.919) according to Cronbach's equation, and this result indicates a high rate of reliability of the questionnaire.

The researcher applied the questionnaire to a pilot sample in order to verify the validity and reliability of the questionnaire phrases, to ensure its readiness, and then send it electronically to the sample members in its final form, which consisted of (24) closed phrases distributed into three groups that represented the dimensions of the study, as follows: The first group (the first dimension) includes (9) phrases that include dedicated interactive and educational applications, and the second group (the second dimension) includes (11) phrases, including analytical and administrative applications, while the phrases of the third group (the third dimension) amounted to (4) phrases that include applications that support educational processes, in addition to an open phrase in which the respondent specifies whether he uses applications other than those mentioned in the questionnaire and the degree of their use. The researcher used a number of methods to display and analyze the data such as: (percentages, Pearson correlation coefficient, McDonald's equations, Cronbach's alpha and omega to calculate the questionnaire's reliability coefficient, in addition to the arithmetic mean and standard deviation, the (t) test for independent samples, and one-way analysis of variance (ANOVA).

Research Results

Result of the first hypothesis: Hail University professors use (AI) technology in teaching to a high degree. To verify the validity of the hypothesis, the researcher classified the study tool into three levels (low, medium, and high) to determine the level of use of (AIT) by calculating the range between the lowest and highest degree and adding the range to each levelAfter dividing it into three levels, use (high, medium, low), and the lowest score for the total scale was (24), and the highest score was (120), and the difference between them was (96) divided by the three levels, the result was (32), and thus this result was added to the three levels and the range for low use was (24-56), the medium level (57-89), and the high range was (90-122), and in the same way the three dimensions were created, and Table (9) shows that.

Table No. (9): Shows the classification of the levels of use of (AI) applications in teaching by sample members.

Total	The third dimension	The second dimension	First dimension	Level
32 - 56	4 -16	11 - 44	9 - 36	Low level
57 - 89	17 - 33	45 - 89	37 - 73	Intermediate level
90 - 122	34 - 50	90 - 134	74 - 110	High level

Table No. (10): The calculation of the mean and standard deviation to measure the degree of use of (AI) applications in teaching by sample individuals is shown.

dimensions	Interactive	Analytical	Supportive	SUM_AI_USING
Valid	296	296	296	296
Mean	21.135	29.135	10.257	60,527
Std. Deviation	10.344	12.591	4.181	26,188
Minimum	9,000	11,000	4,000	24,000
Maximum	45,000	55,000	20,000	120,000

It is clear from the table (10) The average for the first dimension (use of interactive and dedicated educational applications) was (10.344), and the standard deviation was (21.135), and the average for the second dimension (use of analytical and administrative applications) was (29.135), and the standard deviation was (12.591), while the average for the third dimension (use of applications supporting educational processes) was (10.257), with a standard deviation of (4.181), and the average for the total sum

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of the three dimensions was (60.527), and the standard deviation was (26.188). Looking at Table No. (7), which shows the calculation of the range to determine the level of use of (AI) applications by sample members in teaching, we find that the average for the total sum falls below the average level between (57-89), and accordingly, the use of (AI) applications by sample members in teaching is at an (average) level.

The result of the second hypothesis: There are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributed to the variable of specialization type. To verify the validity of the hypothesis and to know the significance of the differences between the averages of the degree of use of (AI) applications in teaching by the sample members according to the variable of specialization type (humanities, health, engineering), the researcher used the one-way analysis of variance test (ANOVA) and the result was as shown in Table (11):

Table No. (11): Shows the result of the one-way analysis of variance (ANOVA) test for the sample according to the specialization variable.

Significance level	Value (f)	sum of squares	Degree of freedom	sum of squares
< .001	10.301	6454.533	3	19363.600
		626,569	292	182958.184

We note from the table (11) The value of (F) reached (10.301) at the significance level (< .001), and this result shows the existence of statistically significant differences between sample members in the degree of their use of (AI) applications in teaching attributed to the variable of specialization type. The mean and standard deviation of the sample members' responses were calculated as shown in Table No. (12):

Table No. (12) The calculation of the mean and standard deviation of the sample members according to the specialization variable is shown.

College	N	Mean	SD	SE	Coefficient of variation
Humanitarian	166	55.012	27.884	2.164	0.507
Healthy	92	68,500	22,491	2.345	0.328
Geometric	38	104.105	21,652	5.005	0.388

It is clear from the table (12) The average use of (AI) applications by sample members in teaching at humanities colleges was (55.012), and the standard deviation was (27.884), and the average use of (AI) applications by sample members in teaching at health colleges was (68.500), and the standard deviation was (22.491), and the average use of (AI) applications by sample members in teaching at engineering colleges was (71.438), and the standard deviation was (16.566).

The result of the third hypothesis: There are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributed to the variable of academic rank. To verify the validity of the hypothesis and to know the significance of the differences between the averages of the degree of use of (AI) applications in teaching by sample members according to the variable of academic rank, the researcher used the one-way analysis of variance test (ANOVA) and the result was as shown in Table (13):

Table No. (13) Shows the result of the one-way analysis of variance (ANOVA) test for the sample according to the variable of academic rank.

Cases	Sum of Squares	df	Mean Square	F	p
Academic_rank	12003.101	3	4001.034	6.139	< .001
Residuals	190318.683	292	651,776		

We note from the table (13) The value of (F) reached (6.139), at the significance level (< .001), and this result shows the existence of statistically significant differences between sample individuals in the degree of

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their use of (AI) applications attributed to the variable of academic rank. The mean and standard deviation of the sample individuals' responses were calculated as shown in Table No. (14):

Table No. (14) The calculation of the mean and standard deviation of the sample members according to the variable of academic rank is shown.

Academic_rank	N	Mean	SD	SE	Coefficient of variation
Lecturer	14	50.143	29,511	7.887	0.589
Assistant Professor	190	63,674	26,610	1.931	0.418
Associate Professor	72	60,000	23,490	2.768	0.391
Professor	20	39,800	17,752	3.969	0.446

It is clear from the table (14) The average for sample members at the rank of lecturer was (50.143), and the standard deviation was (29.511), the average for sample members at the rank of assistant professor was (63.674), and the standard deviation was (26.610), the average for sample members at the rank of associate professor was (60.000), and the standard deviation was (23.490), while the average for sample members at the rank of professor was (39.800), and the standard deviation was (17.752).

The result of the fourth hypothesis: There are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributed to the variable of years of teaching experience. To verify the validity of the hypothesis and to know the significance of the differences between the averages of the degree of use of (AI) applications in teaching by the sample members according to the variable of academic rank, the researcher used the one-way analysis of variance test (ANOVA) and the result was as shown in Table (15):

Table No. (15) Shows the result of the one-way analysis of variance (ANOVA) test for the sample according to the variable of experience in university teaching.

Cases	Sum of Squares	df	Mean Square	F	P
Experience	374.870	2	187.435	0.272	0.762
Residuals	201946.914	293	689,239		

We note from the table (15) The value of (F) reached (0.272), with a statistical significance level of (0.762), and therefore the result is not statistically significant. The mean and standard deviation of the sample members' responses were calculated as shown in Table No. (16):

Table No. (16) The calculation of the mean and standard deviation of the sample members according to the variable of experience in university teaching is shown

Experience	N	Mean	SD	SE	Coefficient of variation
less than 5 years	42	62.952	23,797	3.672	0.378
5 to 10 years	98	59.388	26.206	2.647	0.441
more than 10 years	156	60,590	26.895	2.153	0.444

It is clear from the table (16) The mean and standard deviation of the sample categories according to the variable of experience in university teaching were as follows: The mean of the category (less than 5) years was (62.952), and the standard deviation was (23.797), while the mean of the category (5 to 10) years was

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(59.388), and the standard deviation was (26.206), and the mean of the category (greater than 10) years was (60.590), and the standard deviation was (26.895).

Result of the fifth hypothesis: There are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributed to the gender variable (male/female). To verify the validity of the fifth hypothesis and to know the significance of the differences between the averages of the degree of use of (AI) applications in teaching by sample members according to the gender variable (male/female), the researcher used the (t) test for the statistical significance of the dimensions and the total degree between males and females in the degree of use of (AI) in teaching as shown in Table No. (17):

Table No. (17) Shows the result of the (t) test for the statistical significance of the differences between males and females in the degree of use of (AI) in teaching.

dimensions	Group	N	Mean	SD	t	df	p
Interactive	Male	160	21.275	10.77	0.252	294	0.801
	Female	136	20.971	9.855			
Analytical	Male	160	29,788	12.638	0.967	294	0.334
	Female	136	28,368	12,538			
Supportive	Male	160	10.213	4.325	-0.197	294	0.844
	Female	136	10.309	4.019			
SUM_AI_USING	Male	160	61,275	26,892	0.532	294	0.595
	Female	136	59.647	25.406			

It is clear from Table No. (17) The average for the first dimension was (21.275) for males, and the standard deviation was (10.77), and the average for females was (20.971), and the standard deviation was (9.855), and the average for males in the second dimension was (29.788), and the standard deviation was (12.638), while the average for females was (28.368), and the standard deviation was (12.538), and as for the third dimension, the average for males was (10.213), and the standard deviation was (4.325), and the average for females was (10.309), and the standard deviation was (4.019). We also note from the table that the overall average for the three dimensions for males was (61.275), and the standard deviation was (26.892), while the overall average for females was (59.647), and the standard deviation was (25.406). The value of (t) for the first dimension was (0.252), with a statistical significance level of (0.801), and the value of (t) for the second dimension was (0.967) with a statistical significance level of (0.334), while the value of (t) for the third dimension was (0.532) with a statistical significance level of (0.595). We note that the value of (t) ranged between (-0.197) and (0.967), and all of them are not statistically significant because the value of (t) is less than (0.001). The mean and standard deviation of the sample individuals were calculated according to the gender variable (male/female) as shown in Table No. (18):

Table No. (18) The calculation of the mean and standard deviation of sample individuals according to the gender variable (male/female) is shown.

Gender	N	mean	SD	Coefficient of variation
Male	160	61,275	26,892	0.439
Female	136	59.647	25.406	0.426

It is clear from the table (18) The average response of male sample members was (61.275), and the standard deviation was (26.892), while the average response of female sample members was (59.647), and the standard deviation was (25.406).

Result of the sixth hypothesis: Hail University professors use interactive educational (AIT), administrative analytical technologies, and technologies that support the educational process in teaching to an equal degree.

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To verify the validity of the sixth hypothesis, the average responses of the sample members and the standard deviation were calculated as shown in the table (19) Next:

Table No. (19): The calculation of the mean and standard deviation to measure the degree of use of (AI) applications in teaching by sample individuals is shown.

dimensions	Interactive	Analytical	Supportive	SUM_AI_USING
Mean	21.135	29.135	10.257	60,527
Std. Deviation	10.344	12.591	4.181	26,188
Minimum	9,000	11,000	4,000	24,000
Maximum	45,000	55,000	20,000	120,000

It is clear from Table (19) that the average responses of the sample members in the first dimension of the questionnaire (the use of customized educational interactive (AIT)) amounted to (21.135), and the standard deviation (10.344), while the average responses of the sample members in the second dimension of the questionnaire (the use of administrative analytical techniques) were (29.135), and the standard deviation (12.591), and the average responses of the sample members in the third dimension of the questionnaire (the use of technologies supporting the educational process) were (10.257), and the standard deviation (4.181), and this result confirms the existence of a difference in the degree of use of the sample members of interactive educational (AIT) dedicated to education, administrative analytical techniques, and technologies supporting the educational process in teaching.

Discussion of Research Results

The result of the first hypothesis: Hail University professors use (AI) technology in teaching to a high degree. The result showed that the sample members' use of (AI) applications in teaching was at a (medium) level. This result proves the invalidity of the first hypothesis, which states the following (Hail University professors use (AI) technology in teaching to a high degree). This result is consistent with the study of Abdo, Younis, and Al-Haroun (2024), which concluded that the use of (AI) applications by faculty members at Sadat City University at its medium levels was at a rate of (65.3), and the study of Al-Muqaiti and Abu Al-Ala (2021), and it differs from the study of Al-Subhi (2020), the study of Al-Qahtani and Al-Dael (2023), as well as the study of Al-Ghamdi and Al-Anzi (2024).

The second hypothesis: There are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributed to the variable of specialization type. The result proved the existence of statistically significant differences between sample members in the degree of their use of (AI) applications in teaching attributed to the variable of specialization type, and thus the hypothesis is invalid. The result also shows that sample members in engineering colleges are in the lead with an average of (71.438) followed by sample members in health colleges with an average of (68.500), and sample members in humanities colleges came in third place with an average of (55.012). This result indicates that faculty members in engineering colleges use (AIT) more in teaching, and the researcher attributes it to the fact that the nature of engineering specializations is closer to the use of computer-related technologies. Also, the engineering track colleges at Hail University include computer and engineering colleges with their various branches that teach computer courses within their academic programs, and are taught by professors specialized in computers. Therefore, engineering colleges topped the colleges of Hail University in the use of (AIT) by their faculty members in teaching. This result is consistent with the study (Abdul-Mawla and Suleiman, 2023), the study of Al-Qahtani and Al-Dayel (2023), and the study of Al-Muqaiti and Abu Al-Ala (2021), and this differs from the result of the study of Abdo, Younis and Al-Harun (2024).

The result of the third hypothesis: There are no statistically significant differences between Hail University professors in the degree of using (AI) technology in teaching attributed to the variable of academic rank. The result proved the existence of statistically significant differences between sample members in the degree of their use of (AI) applications attributed to the variable of academic rank. This result confirms the invalidity of the third hypothesis of the research, which states (There are no statistically significant differences between Hail University professors in the degree of using (AI) technology in teaching attributed

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to the variable of academic rank). The result of calculating the averages of the sample members' responses showed an increase in the average responses of sample members with the ranks of assistant professor, which amounted to (63.674), and associate professor with an average of (60.000), then the average responses of sample members with the rank of lecturer, which amounted to (50.143), and the average responses of sample members with the rank of professor, which amounted to (39.800). This result indicates that the most faculty members at Hail University who use (AI) applications in teaching are those with the rank of assistant professor, followed by the rank of associate professor, then the rank of lecturer, followed by the rank of professor. The researcher attributes this result to the passion and desire of faculty members with the ranks of assistant professor and associate professor to use modern technologies in teaching, especially (AI), as most of them fall into the age group that uses modern technologies the most, as the study conducted by the Pew Research Center (2019) indicated that young people (aged 18-29) are more likely to express their confidence in (AI) than the elderly (aged 65 or older). Young people were more likely to agree with the statement that "(AI) will be beneficial to society", and were less likely to agree with the statement that "(AI) is a threat to society". These two categories outperform the category of lecturers who use modern technologies more in their daily lives in using (AIT) in teaching because of their commitment to describing the courses without making any modifications or developments to the teaching methods included in the description, despite the presence of some flexibility in the course description that allows for some modifications to the vocabulary of the description such as teaching strategies, due to the lack of experience in teaching to the extent that enables them not to be afraid to use (AIT) in teaching. As for the category of faculty members with the rank of professor, the result showed their weak use of (AIT) in teaching, and the researcher attributes this to the fact that the number of faculty members with the rank of professor is mostly from the humanities colleges, which are the least used of (AIT) compared to the engineering and health colleges according to the result of the second hypothesis(See Table No. ((12)Their attachment to traditional teaching methods that they have practiced for many years, and their resistance to change could be an obstacle to their use of AI techniques in teaching. This result differs from the study of Al-Subhi (2020), the study of Abdo, Younis, and Al-Haroun (2024), and the study of Al-Muqayti and Abu Al-Ala (2021) and the study of Kabdani and Baden (2021).

The result of the fourth hypothesis: There are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributed to the variable of years of teaching experience. The result showed that there are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributed to the variable of years of teaching experience, and this result confirms the validity of the hypothesis. The researcher attributes this result to the fact that the use of (AIT)in teaching is still subject to the individual efforts of faculty members and that it has not been included within the official frameworks of the university's curricula. Both of them indicated that Elmohimeed, 2024)) and Zigham Abdelkader (2024) therefore in their studies. Therefore, the degree of use of (AIT)in teaching by the sample members was not affected by the experience factor, and this result is consistent with the study of Al-Muqaiti and Abu Al-Ala.(2021), and Kabdani and Baden (2021)

The result of the fifth hypothesis: There are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributed to the gender variable (male/female). The result proved that there are no statistically significant differences between Hail University professors in the degree of use of (AI) technology in teaching attributed to the gender variable (male/female), and thus the validity of the fifth hypothesis. This result indicates that faculty members at Hail University of both sexes use (AIT) in teaching to an equal degree, and this result is consistent with the study of Al-Subhi (2020), the study of Abdo, Younis, and Al-Haroun (2024), and the study of Al-Awbathani (2021), and the study of Al-Muqayti and Abu Al-Ala (2021).

Result of the sixth hypothesis: Hail University professors use interactive educational AI technologies, administrative analytical technologies, and technologies that support the educational process in teaching to an equal degree. The result showed that there was a difference in the degree of use of the sample members of interactive educational AI technologies, administrative analytical technologies, and technologies that support the educational process in teaching, and thus the sixth hypothesis was invalid. The result showed that the sample members' use of administrative analytical technologies was the most used in teaching,

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followed by interactive educational AI technologies, then the use of technologies that support the educational process. The researcher attributes this result to the fact that the sample members use analytical and administrative techniques to a greater extent in teaching, which are applications that have a dual function between education, analyzing student performance, and managing the educational process. These technologies include applications such as analyzing student interaction, summarizing texts, processing natural languages, recognizing patterns and shapes, intelligent assessment of students, automating grades and assessment, providing feedback, analyzing data and academic patterns, monitoring attendance and activities, in addition to career guidance, alerts, and intelligent organization of appointments. In second place are dedicated educational interactive (AIT), which are applications of a purely educational nature, followed by applications that support educational processes, in terms of the degree of their use in teaching according to the responses of the sample members.

Conclusion

This research aimed to identify the reality of Hail University professors' use of (AI) technology in teaching in light of some variables such as scientific specialization, academic rank, years of experience in university teaching, and gender "male/female". The research concluded with a set of results: Hail University professors use (AI) technology in teaching to a (moderate) degree, and there are statistically significant differences between sample members in the degree of their use of (AI) applications in teaching attributed to the variable of specialization type, as the results showed that engineering college professors use (AIT) more in teaching, followed by health college professors, then humanities college professors. The results also showed statistically significant differences between sample members in the degree of their use of (AI) applications attributed to the variable of academic rank in favor of the ranks of assistant professor and associate professor, followed by professors with the rank of lecturer, then professors with the rank of professor. There are no statistically significant differences between Hail University professors in the degree of using (AI) technology in teaching attributed to the variables of years of teaching experience and gender "male/female". The results also showed that Hail University professors use administrative analytical AI techniques in teaching to a greater extent, followed by dedicated educational interactive AI techniques, and then techniques that support the educational process. In light of these results, the researcher recommends including AI techniques within the official frameworks of the curricula at Hail University, intensifying training courses for faculty members in the field of AI, and preparing the educational environment to employ AI in the educational process. The researcher suggests conducting more research on the use of AI in education, such as: challenges that prevent the use of AI in the educational process, designing training courses and workshops to develop the competencies of faculty members in the field of using AI in education, and knowing the attitudes of Hail University students towards the use of AI techniques in the educational process.

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