The Degree Of Using Artificial Intelligence Among Academic Leaders In Jordanian Universities And Its Relationship To Teaching Competencies Of Faculty Members

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Abstract:

This study aimed to investigate the degree of use of artificial Intelligence (AI) by academic leaders in Jordanian universities and its relationship to the teaching competencies of faculty members. The descriptive correlation approach was used. A total of (350) faculty members from Jordanian universities participated in the study during the second semester of the academic year 2022/2023. It was found that academic leaders in Jordanian universities use AI to a high degree. In addition, Faculty members' teaching competency was high.

The findings yielded a statistically significant positive relationship between the degree of academic leaders' practice of AI and the level of teaching competencies of faculty members.
The researcher recommended that universities adopt the concept of AI because of its positive role in achieving its mission, Vision , and goals, motivating the faculty members , and developing their teaching competence. The findings yielded a statistically significant positive relationship between the degree of academic leaders' practice of AI and the level of teaching competencies of faculty members.

Keywords: Academic leaders, AI, teaching competencies, Jordanian universities, Digital era.

Introduction

Higher education institutions are among the institutions that had a signicant, massive, considerable impact on the progress of nations in various fields and the development of their society. Therefore, several movements emerged calling for fundamental education reform considering the digitization era's requirements. In response, higher education institutions started taking comprehensive steps, including evaluating and developing the university's performance by identifying the strengths and weaknesses of the educational services it provides and strengthening the teaching competence of its members to provide society with educational outputs that are capable of meeting the ever-changing requirements of the labor market.

Universities have recognized the need to adopt a vision that aligns with modern educational trends in order to accelerate the pace of the education system and meet the requirements of the knowledge economy. They are capable of employing the advancements of the era and innovating different educational approaches (Haweed, 2013). And the immediate response to technological advancements that have brought about significant changes in teaching methods and strategies (Saadeh & Al-Sartawi, 2013).It is worth noting that many prestigious universities have adopted this technology within the international classification and accreditation standards of universities (Qamora, bi and Krush,2018).

AI has been commonly used in education processes, as it links learning areas in the neural network, classifies, distinguishes, and clarifies them. However, this process is a considerable paradigm shift for building knowledge (Jena, 2018). Abdul Qadir (2020) sees that the success of any educational process is measured by how quickly it responds to changes and modern developments in using digital devices and applications. He added that integrating the curriculum with AI and its

applications has a vital, an essential role in facing the challenges of education.

On the other hand, higher education institutions have adopted artificial intelligent applications and systems to bring about unconventional changes in the management of their modern institutions (Malik, Tayal & Vij, 2019) ;and raise the level of performance of their employees (Luo, 2018). They also employed them to better assist in making sound decisions (Al-Astal, Akl, & Al-Agha, 2021), and this helped faculty members in improving the performance of their academic tasks (https://ghorfa.de/ar).

Chang (2019) believes using AI effectively upgrades the management performance level and qualifies it to perform various administrative tasks. However, for academic leaders to perform their excellent work, they must believe in change, be firm, and work to provide appropriate conditions to achieve results at a high level of efficiency (Omran, 2014).

Artificial Intelligenceis defined as "a relatively recent science of computer science, which aims to innovate and design smart computer systems, which simulate the method of human intelligence so that systems can perform tasks instead of humans, and simulate their functions and capabilities using their qualitative properties and their relationship Logical and arithmetic (Mahmoud, 2020, 16). Abdul Salam, (2021, 16) described it as "a set of new methods in programming computer systems, which can be used to develop systems that simulate some elements of human intelligence and allow him to perform reproduction operations about facts and laws represented in the computer's memory.

Artificial intelligence (AI) is rapidly transforming various industries, including education. AI is being used in educational management to enhance the learning process, improve student outcomes, and streamline administrative tasks (Crompton, & Burke, 2023)

Teaching competencies is one of the university's most crucial tasks and is the most successful in preparing students for a prestigious future. Moreover, the teaching competencies of faculty members play a crucia role in creating an interactive learning environment, fostering communication channels between students and teachers, and allowing them to share experiences via various electronic communication means. This improves students' higher thinking skills and equips teachers with modern technical skills, allowing them to improve their teaching methods and keeps up with the rapid pace of technological change (Bawashri, 2019).

Teaching competencies are a set of knowledge, skills, and attitudes acquired by a faculty member by employing modern technology means that contribute to developing his ability to perform

educational behavior within the lecture with a certain level of proficiency, with the least effort and the shortest time as well as teaching practices, patterns of behavior and activities that a faculty member should carry out.

Universities have sought to develop their efficiency as educational institutions through several axes, such as: conducting periodic and continuous evaluations of the performance of university professors, because of its importance in improving their performance and increasing their competencies. They are developing the courses, their contents, and the methods adopted in teaching them (Imam & Barah, 2017). In addition to encouraging the use of AI in the teaching process.

Various universities have tended to employ AI techniques in education due to their positive impact on learning. Numerous studies revealed the effect of using modern technology in the educational process. Al-Olayan (2019) revealed that employing the digital revolution in education has provided new horizons for the teacher and student to obtain information accurately and in the least possible time. The results of (Zhoo, Chen, Zhang & Coplana, 2019) showed the importance of AI in promoting scientific research and supporting education and administration in universities.

Study Al-Yajzi (2019) recommended holding conferences, lectures, seminars, and workshops electronically throughout the year, and preparing training programs for faculty members and students to develop the skills of using artificial intelligence applications. and Shaaban's study (2021) recommended preparing training programs for faculty members to develop artificial intelligence skills and applications.

Al-Bisher (2020) proposed the development of the university educational environment to facilitate the use of AI in the teaching process and facilitates. The results of (Abdul Salam, 2021) showed that university faculty members support using AI applications in education to a high degree. Finally, Al-Masry & Tarawneh (2020) suggest using AI applications to help Jordanian universities to shift into productive universities.

Crompton, & Burke (2023) found that AI has many advantages, including improved student engagement, personalization of learning, and cost-effectiveness. However, AI also poses many challenges, such as ethical concerns, potential biases, and the need to rehabilitate the workforce. The research concludes that AI has a huge potential to improve educational management.

Al-Massad and Al-Frani (2023) indicated the identification of the reality of the use of artificial intelligence applications in education from the point of view of secondary school teachers. It came with a

medium degree, and the results showed that there were statistically significant differences with regard to the degree of employing artificial intelligence applications in education.

For universities in general, and Jordanian universities in particular, to benefit from AI in developing their academic leaders' practice and teaching competence, it is necessary to move from the conventional university environment to a technological one, and this is done by taking into account the following areas:

1. Administrative Area: The universities' administrations must adopt the most cutting-edge intelligent applications to develop work within the university and update the university's information and database whenever necessary. They must also provide specialised experts to develop the use of AI in the university and establish a website to publish its activities. To achieve this, flexible financial systems make it easier for students to pay their tuition and attract new faculty personnel skilled in using AI.

   Academic Area**:** It is necessary to enable faculty members to use AI in designing a stimulating educational environment and to provide a flexible communication system that allows communication between all parties to the educational process and participation in seminars, training courses, and academic conferences. In addition to supporting academics to conduct scientic research in this eld, designing specialized courses to develop academics and students' ability to use AI techniques.
2. . Furthermore, universities should work on preparing training and educational programs in colleges to benefit from AI techniques and develop compulsory courses in AI to consolidate its concept among students.
3. Human resources: The availability of administrative leaders who adopt the employment of AI in the educational process at the university, faculty members who have high skills in using Ai in teaching , and experts who build educational applications. And also the availability of administrators familiar with the rules and regulations that govern the employment of AI in the educational process at the university.
4. Technical Area: The administration must strive to spread the culture of using AI and consolidate it among the university members, hold workshops to explain the systems related to AI in the educational process in the university, and enact systems to protect information security in the university university's educational .

From the preceding, we conclude that universities represent a scientific edifice concerned with every matter related to research and education. They aim to prepare elite students with all the necessary

skills to keep pace with developments. The world has recently witnessed several innovations in various aspects, especially the education sector, such as using AI applications and information systems that universities used to help keep pace with the challenges of the digitization era. These applications have created new lifestyles and a more compelling interactive educational environment.

Previous Studies

The use of artificial Intelligence applications in education is one of the emerging issues that has received wide attention from researchers. A study was conducted in China (Zhoo, Chen, Zhang & Coplana, 2019) to investigate the impact of teaching systems based on artificial Intelligence via the Internet using the descriptive approach. It was found that using teaching systems based on artificial Intelligence via the Internet positively affects the student's academic achievement.

The study (Al-Muqiti, 2021) concluded a statistically significant correlation between the degree of employing artificial Intelligence and the overall quality of performance of Jordanian universities from the point of view of faculty members. And the results of (Abdul Salam, 2021) showed that university faculty members agree to a high degree on the use of artificial Intelligence applications in education and all its fields and to provide the requirements for that and avoid the resulting ethical risks, and the need to help students with special needs in the first place. While the study (Al-Masry and Al-Tarawneh, 2020) found that the reality of using artificial Intelligence applications that support the transformation of Jordanian public universities into productive universities from the academic leaders' point of view came to a moderate degree.

Several studies investigated the teaching competencies of faculty members. Al-Saaida (2015) exhibited moderate teaching competency among faculty members at Al-Balqa Applied University. The study (Asmaa, 2016) concluded that the quality of the teaching performance of the university professor was low. In contrast, (Ayasrah, 2017) reported a medium degree of possessing teaching competencies among faculty members in the College of Education at Al-Jouf University. Amal & Fotia (2017) revealed that students' attitudes toward the job competencies of university education professors were high. Bou Bakr (2019) found a strong correlation between (technical innovations, information , and communication technology) and improving university education services in Algerian universities. It also showed students' dissatisfaction with these innovations that are employed in teaching, as it came to a feeble, a fragile degree, as well as the preference of students and teachers for traditional methods of

teaching based on memorization and indoctrination and their reluctance to use digital innovations.

These studies have helped the researcher in several ways, including developing a tool for information gathering, identifying its results and comparing them with the current research results, using appropriate statistical techniques, and supporting some ideas relating to the theoretical framework. In addition, the current study is distinguished from prior studies by attempting to determine the level of artificial intelligence practice among academic leaders and its relationship with the teaching competencies of faculty members.

From this standpoint, Jordanian universities followed the electronic developments that the leading universities have adopted as a model of production and self-sufficiency to overcome obstacles and bring about change and development in their institutions. The technology and technical applications are characterized by high accuracy and flexibility; they aim to facilitate the performance of various tasks in universities and raise their quality to achieve the highest levels of work efficiency. AI means building machines that carry out tasks that require human Intelligence . These programs allow the computer to simulate some functions and mental capabilities in limited ways and search for problem-solving.

The faculty member is the core of the educational process. Given the multiple tasks that he performs (teaching, scientific research, community service), and the leadership and administrative roles, it was necessary to know the level of educational competencies, as his competencies affect the quality of the outputs and the quality of his performance (academic, administrative, and technical), and the extent of his adequacy in the roles assigned to him. The higher the level of his performance, the higher the quality of his graduate students, the higher the level of scientific research in universities, and the more signicant, more outstanding his contribution to community service. Therefore, this study sought to identify the degree of use of AI among academic leaders in Jordanian universities and to identify the level of technological teaching competencies of faculty members from their point of view.

Study objectives

The study aimed to identify the degree of using artificial intelligence among academic leaders in Jordanian universities and its relationship to the teaching competencies of faculty members, and to reveal its relationship to the variables: (university type, academic rank, college type, and academic qualification).

Statement of the problem:

Most departments and leaders at higher education institutions are eager to change to meet the demands of the digital age. Innovation and creativity are essential to university work, particularly administration and leadership. Universities require a new breed of leaders with contemporary , and distinctive abilities. One of the most crucial elements in the development of any university is the faculty members' teaching competencies that consider and employ technology. If university faculty members use technological teaching techniques and approaches inside the academic setting, the quality of their outputs will be significantly improved.

The importance of technological competencies in teaching is one of the essential, primary tools that enhance the educational process, which requires providing the maximum possible capabilities and efforts and reflects positively on the efficiency of teaching performance. Therefore, this study sought to identify the level of using AI among academic leaders and to what extent faculty members benefit from technological competencies in teaching. It also seeks to explain the relationship between them through the views of faculty members. The current study sought to answer the following questions:

1 .To what degree do academic leaders use AI at Jordanian from the perspective of faculty members?

2 .What is the level of teaching competencies of faculty members in Jordanian universities?

3. Is there a correlation between the degree of application of AI by academic leaders and the level of teaching competencies of faculty members in Jordanian universities?

Study Importance:

The importance of the study stems from the novelty of the topic it addresses, which is the use of AI applications in developing the teaching competencies of faculty members in the era of digitization , as it contributes to the development of technological teaching competencies for faculty members, and affects the degree to which they can search for ways to develop their universities and enhance the interaction between members, university administration, students, and local community institutions. Furthermore, this study is expected to add to the Arab and Jordanian literature on this subject.

Study will benefit academic leaders in universities and decision-makers in the Ministry of Higher Education and the Commission for Accreditation of Higher Education Institutions in working to qualify academic leaders technologically and facilitate their use of AI techniques.

Study Objectives:

The current study aims to determine the degree of employing AI by university academic leaders and indicate the level of technological teaching competencies among faculty members. And to determine the relationship between academic leaders' employment of AI and the level of teaching competencies of faculty members in Jordanian universities in the northern region in the era of digitization .

Definitions:

Artificial Intelligence : (Popenici & Kerr, 2017,p.9) defined AI as: "How to direct a computer to do things that humans do in a better way".

Teaching competencies: defined as the teacher's possession of a sufficient amount of knowledge, skills, and positive attitudes related to his professional roles and tasks, which are reflected in his performance and direct his behavior in educational situations with a specific level of proficiency, and can be observed and measured with tools prepared for that.

Technological teaching competencies: The researchers defined them in this study as the technical skills and capabilities that a faculty member possesses effectively and proficiently by employing various technological means, such as presentations and videos, to deliver information to students in its proper form, with the least time and effort for the student to refer to at all times.

Study limits and determinants: This study was limited to a sample of faculty members in Jordanian universities for the academic year (2022/2023). This study was limited to their response to the study tool, and its psychometric characteristics of validity and stability.

Methodology and Procedures

Approach:

The descriptive relational approach was used to achieve the study's objectives and answer its questions. This approach describes the phenomenon to be studied, analyses its data, and shows the relationships between its components.

Study Population and Sample: A total of 3478 faculty members participated in this study from the Jordanian private and public universities located in the northern region, namely: (Jedara University,

Jerash Private University, Irbid Private University, Yarmouk University, and Jordan University of Science and Technology) during the second semester (2023/2022).

Five hundred electronic questionnaires were administered to a random sample of faculty members in Jordanian universities in the northern region. (350) questionnaires were retrieved (70%). Table (1) shows the distribution of the study sample by its variables**.**

Table (1) The study sample by the study variable

Variable	**Category**	**Frequency**	**Percentage**
Gender	male	274	%78
	female	76	%22
Academic rank	Professor	80	%23
	Associate Professor	130	%37
	Assistant Professor	140	%40
Experience	**< 5 yrs.**	118	%34
	5-10 yrs.	98	%28
	> 10 yrs.	134	%38
Total		**350**	**%100**

Instruments:

To achieve the aim of the study, the researchers developed a questionnaire to identify the use of artificial Intelligence by academic leaders by referring to theoretical literature and previous studies that dealt with artificial

Intelligence and technological teaching competencies (Al-Bisher, 2020; Al-Atl, Al-Anzi, and Al-Ajami, 2021). The final version of the questionnaire comprises (20) items distributed over three areas: academic requirements (6) statements, Human resources requirements (6) statements

, and technical requirements (8) statements. The teaching competencies Measure was also developed after referring to several studies (Al-Mutaifi, 2021; Al-Yajzi, 2019; Aldosari, 2020). It consisted of (20) statements in its final version.

Validity and reliability:

The content validity of the questionnaire was checked by a committee of (10) university professors

specialized in educational administration and educational policies in Jordanian universities. They were asked to evaluate the questionnaire's relevance, edit, and suggest any required deletion or addition. All the required modifications were considered. The questionnaire obtained good inter-rater acceptance. To ensure the tool's reliability, internal consistency (Cronbach alpha) was calculated, as shown in Table (2).

Table (2) Results of the internal consistency coefficient of the two measures by(Cronbach alpha)

Variable	(Cronbach's alpha)
Artificial intelligent use	0.88
Teaching competency	0.92

Table (2) demonstrates that the reliability coefficient for Artificial Intelligence Measure was (0.88), while it was (0.92) for Teaching Competencies Measure, indicating suitable reliability coefficients for this study.

A five-point Likert scale (very high, high, medium, low, and very low) was employed for both measures. Participants' responses to teaching competence and artificial intelligence measures were ranked into three categories (low, 1.00-2.33), medium (2.34-3.67) , and (high, 3.68-5.00). The scale was calculated using the following equation: the upper limit of the scale (5) - the lower limit of the scale (1), and by subtracting the upper limit from the lower limit, the result is (4), and then dividing the difference between the two limits by three levels 4÷3, the result is (1.33).) and then add the answer (1.33) to the end of each category.

Procedures:

Official approval was obtained to facilitate the application of the study tool in the faculties of Jordanian public and private universities in the Northern Region. In addition, the e-mails of the faculty members were collected to send the link of the measures to them electronically since handing over a paper tool is no longer acceptable in light of technological development. The researcher developed two measures (the AI and Competency scales). Then the scales' validity and reliability were validated using the previously-mentioned methods. To determine the study population , the official records of the Ministry of Higher Education and Scientific Research were referred to. A total of (350) faculty members were selected using random sampling. In the second stage, the questionnaire was administered electronically to the participants via their e-mails to collect data. The researcher communicated with the participants and explained how to answer the questionnaire questions. The participants were assured of the confidentiality of their data and that it would only be used for scientific purposes. After retrieving all of the surveys and categorizing the replies by the various variables, After retrieving all of the surveys and categorising the replies by the various variables, statistical analysis was performed. The data were then extracted and statistically analyzed using the statistical analysis tool (SPSS). The researcher then discussed and interpreted the findings and offered recommendations.

Results:

Academic leaders' use of Artificial intelligent

Descriptive analysis (mean, frequency) was computed to measure academic leaders' degree of employing AI. See Table (3).

Table 3. Results of the descriptive analysis for the Artificial Intelligent application scale

N	Rank	Area of requirements	Mean	Std.	Level
1	1	Academic	3.97	.66	High
2	2	Human resources	3.94	.61	High
5	3	Technical	3.92	.59	High
		Using AT	**3.94**	**.58**	**High**

The arithmetic means ranged between (3.86-3.97). Academic requirements obtained the highest rank (mean = 3.97), while technical requirements ranked last (mean = 3.84). The overall mean of the artificial intelligence scale was (mean=3.94; std.= 0.58). The means and standard deviations of the participants' responses were calculated for each domain separately. The results are shown below:

A. Academic requirements:

Table 4. The results of the means and Std for Academic requirements field

Rank	N	Item	Mean	Std.	Level
1	1	I am publishing the university's scientific research to be accessible to all globally.	4.12	.86	High
2	2	Conducting specialized courses for employees to develop their ability to use artificial intelligence techniques at the university	4.07	.92	High
3	3	Participation in seminars, training courses , and academic conferences affiliated with other colleges	4.02	.86	High
4	5	Assisting AI faculty members in designing a stimulating learning environment	3.95	.98	High
5	6	Promoting creative faculty members in the fields of scientific research	3.94	.97	High
6	4	Conducting scientific research that contributes to solving society's problems	3.90	.91	High
		Total	**3.97**	**.66**	**High**

Table (4) shows that the mean scores for Academic requirements ranged between (3.90-4.12). Statement (1), which says, " Publishing the university's scientific research to be accessible to all globally," came in the first place (mean=4.12), while statement; (6) ", conducting scientific research that contributes to solving society's problems" ranked last (mean= 3.90). However, the overall mean was (3.97).

B. Administrative requirements

Table 5. The results of the descriptive analysis for Administrative requirements

Rank	N	Items	Mean	Std.	Level
1	4	Some administrative leaders use AI in the educational process	4.02	0.92	High
2	5	There are academic leaders with high skills in employing AI in the educational process.	4.00	1.08	High
3	6	They are providing experts to design and plan practical educational applications for the university	3.98	0.86	High
4	1	We are appointing qualified trainers to train academic leaders to employ AI in the educational process.	3.97	0.88	High
5	2	Appointing experts to evaluate the academic leaders' employment of AI in the educational process.	3.84	0.97	High
6	3	There are several leaders familiar with the rules and regulations governing the employment of AI in the educational process	3.82	0.91	High
		Total	**3.94**	**.62**	**High**

Data in Table (5) exhibited that the means scores ranged between (3.82-4.02). Statement (4) states, "There are administrative leaders who use AI in the educational process." Topped the scale with (mean=4.02), while statement (3), which reads, " There are leaders familiar with the rules and regulations governing the employment of AI in the educational process , " ranked last (mean=3.82). The overall mean score was (3.94).

C. Technical requirements

Table 6. Descriptive analysis for Technical requirements

Rank	N	Item	Mean	Std.	Level
1	5	Training academic leaders to employ AI in the educational process.	4.00	.89	high
2	6	We are holding workshops for leaders to explain the systems of AI in the educational process.	3.98	.90	high

Rank	N	Item	Mean	Std.	Level
3	7	Spreading the culture of AI and consolidating it among the leaders in the university	3.96	.88	high
5	8	It was enacting systems that protect information security for the employment of AI in the educational process.	3.94	.92	high
6	3	They are developing programs and models for the application of AI in the educational process.	3.90	.877	high
7	4	Developing the traditional educational policies in the university to new ones employing AI.	3.88	.88	high
8	2	Developing systems that require faculty members to employ AI in the educational process at the university	3.86	.91	high
		Total	3.92	.59	high

Table (6) shows that the mean scores for the technical requirements ranged between (63.8-4.00). Statement (5), which states, "Training academic leaders to employ artificial intelligence in the educational process at the university ," ranked first (mean=4.00), while statement (2), which says ," Developing systems that require faculty members to employ AI in the educational process at the university " ranked last (mean=3.86). The overall mean score for technical requirements was (3.92).

2. The level of teaching competencies for faculty members in Jordanian universities

Descriptive analysis was obtained to determine the level of the teaching competencies of faculty members in Jordanian universities.

Table 7. Results of the descriptive analysis of faculty members' teaching competencies

Rank	N	Items	Mean	Std.	Level
1	6	Keen to start and end the lecture on time	4.03	.95	high
2	7	Answer students' inquiries in lectures	3.97	.95	high
3	8	Has the ability to solve many technological learning problems	3.94	.91	high
4	4	Adequately and effectively use highly efficient educational innovations (such as an educational package based on self-learning, Black Power, and presentations).	3.85	.91	high
5	9	Has the ability to improve learning outcomes in the educational subject	3.84	.96	high
6	5	Provides appropriate educational teaching opportunities for gifted students.	3.83	1.08	high

Rank	N	Items	Mean	Std.	Level
7	15	Trains students to solve problems and creates a productive environment for creativity.	3.82	.93	high
8	2	Diversifying the methods of teaching to achieve feedback.	3.81	.93	high
9	3	Considers individual differences among the students	3.80	1.08	high
10	10	Provides prompt and appropriate reinforcement of students' achievement during the learning process.	3.77	.98	high
11	11	Uses self-learning of the educational package.	3.76	.99	high
12	14	Determines the educational activities and experiences necessary to achieve the objectives of the lecture	3.76	.95	high
13	12	Uses a programmed learning style.	3.75	1.02	high
14	13	Directs students to obtain information from different sources	3.73	1.21	high
15	16	Develops his performance through continuous training and communication within every functional area.	3.72	.96	high
16	18	Identifies activities that contribute to the achievement of educational and learning goals.	3.71	.96	high
17	17	Participates in ESD activities .	3.70	.93	high
18	1	Trains students to prepare research and projects based on community problems.	3.69	.93	high
		Total	**3.80**	**.60**	**high**

The results in Table (7) revealed that the overall mean of the tool was (3.80), with a (high) degree. On the other hand, the means of the participants' responses ranged between (4.03-3.70) and all came to a (high) degree. Statement (6

, " Keen to start and end the lecture on time ", topped the

Statement with a high arithmetic average (4.03). Where Statement (1), which says, " Trains students to prepare research and projects based on community problems, " came in the last rank with the lowest mean (3.69), but it obtained a high grade.

3. Is there a correlation between the degree of using artificial intelligence among academic leaders in Jordanian universities and the level of technological teaching competencies of faculty members there?

The Pearson correlation coefficient was extracted between the artificial intelligence of academic leaders in Jordanian universities and the level of technological teaching competencies of faculty members to answer this question. See Table (8).

Table. Results of Pearson correlation coefficient between the domains of artificial intelligence of academic leaders and the items of the level of teaching competencies of faculty members

		Academic	HR	Technical	Overall AI
Teaching competencies	correlation coefficient (r)	.805**	.826**	.917**	.928**
	significance	.000	.000	.000	.000
	N	350	350	350	350

*Significance at (0.05)

** Significance at (0.01)

Table (5) revealed a statistically significant positive relationship between the use of AI among academic leaders in Jordanian universities and the level of teaching competencies of faculty members in the era of digitization .

Results:

After presenting, interpreting, and discussing the results obtained by applying the study tool, the following results were concluded:

1. Academic leaders use AI to a high degree. The academic field obtained the first degree, followed by the human resources field, the administrative field, and finally, the technical field. All obtained a high degree.
2. Faculty members have a high level of technological teaching competence.
3. There was a positive correlation between the use of AI among academic leaders and faculty members' technological teaching competencies.

Discussion:

The results showed that the degree of academic leaders' use of artificial Intelligence in Jordanian universities in the northern region from the viewpoint of faculty members was high. This result can be explained by the fact that the need for innovation and creativity is a key critical, crucia element of the successful management of higher education institutions, as technical progress, especially the use of Intelligence in education, is increasing. Therefore, it is necessary to shift from performing administrative tasks in universities in traditional routines to using Intelligence applications because they facilitate administrative and educational processes. Also, modern technology creates a gap with the requirements of the current era and thus will limit the progress of universities. Therefore, successful universities work to ensure their survival by providing administrative and educational services that meet

the accreditation requirements. This high degree is good evidence of this (Al-Huwaid, 2013). Furthermore, this result may be attributed to the fact that universities' employment of AI technologies positively affects the quality of the education it provides. This result is consistent with (Al-Masry and Al-Tarawna, 2020) which reported the need to adopting the use of artificial intelligence applications.

This result may be attributed to the fact that there is a positive correlation between academic leaders' practice of their jobs by using artificial intelligence applications in their institutions and improving their level of performance, and keeping pace with technological development. In addition, Jordanian universities have adopted new strategies to employ AI by providing specialized experts and holding workshops for members to explain the systems related to AI in the educational process, publishing the regulation that protects information security and innovators on its websites to be accessible to everyone. Agrees with the study (Al-Masry & Al-Tarawna, 2020).

The results revealed high teaching competencies among faculty members. This result is due to the faculty's employing AI applications in teaching. This result supports previous research that reported that teaching technology (AI) impacts employees' competencies (Al-Astal, Akl, & Al-Agha, 2021). The results of this study agreed with the results of (Zhoo, Chen, Zhang & Coplana, 2019) that the use of teaching systems based on artificial intelligence via the Internet had a positive effect on the academic achievement of students. And it agreed with the result of Abdel Salam’s study (2021) that university faculty members agree to a large extent on the use of artificial intelligence applications in education, and the high result differed with the result of Al-Masry and Tarawneh’s study (2020), which showed that the reality of using artificial intelligence applications that support the transformation of Jordanian public universities into Productive universities from the point of view of academic leaders came with an average degree.

which came with a moderate degree. This result may be attributed to the keenness of the faculty member to keep abreast of technological developments, which has become an urgent necessity, especially in education, and to develop their competencies and obtain the appropriate qualification. Therefore, the faculty member's performance significantly and directly impacts the quality of scholarly outputs. Statement (6) states: " keen to start and end the lecture on time," ranked first and with a high degree. This shows how the faculty member is eager to provide quality teaching through AI, as these lectures are published on the university's official educational platforms

to be accessible to all university students. It should be noted that academic leaders supervise these lectures.

Statement (7) came in second place, and this result can be attributed to the implementation of AI in teaching, which enabled the professor to interact with students effectively on e-learning platforms, respond to their questions clearly and concisely, and provide them with videos and electronic links that will improve their learning. In addition, the faculty member can handle most of the technical issues he encounters during the course, as reported by statement (8), which ranked second.

The result may be attributed to the faculty members' proficiency in implementing specic educational innovations with high efficacy (e.g., the educational package based on self-learning, blackboards, presentations, and audio supervision) in an engaging manner that encourages students to engage in actual interaction with a faculty member without getting bored. This is what raises academic results. As the paragraphs indicated, it may also be attributed to the faculty member's desire to diversify contemporary teaching methods and take into account student differences so that all students have the chance to learn information and use it under their specific needs, like solving problems they may encounter, whether in the educational field or elsewhere as was shown in Items (3,2,15,5,9,4) which had a high score.

This high result may be attributed to the role played by the faculty member in immediate and appropriate reinforcement of the achievement achieved by students during the learning process because he realizes the importance of defining the educational activities and expertise necessary to achieve the goals of the lecture, especially if the education is programmed electronically, such as blended and distance learning. Using these methods helps students obtain information from different sources and increase their knowledge of the information they receive within the electronically programmed materials through their permanent training during the lecture. Furthermore, educational technology also enables continuous communication with the faculty member within special programs (Teams, Model, Zoom, etc.) that the university determines for the faculty member, which is indicated by the following Items (10,11,14,12,13,16,18 17), which obtained a high degree.

Statement (1) came in last place with a high degree. The result may be explained by the professor's requirement for more focus on teaching students to develop research and projects focused on societal issues, each according to his academic stage. The result was consistent with the investigation findings (Amal & Fotia, 2018) revealed that students' attitudes toward the job competencies of university

education professors were high, study Bou Bakr (2019) a strong correlation between (technical innovations, information , and communication technology) and improving university education

In contrast, The high result differed with the result of the study of Al-Saaida (2015), which came with a medium degree, and the study of Asmaa (2016), which came with a low score, and the study of Ayasrah (2017), which came with a medium degree.

The findings revealed a statistically significant positive correlation between faculty members' level of technological teaching proficiency and the extent to which academic leaders in Jordanian universities used AI. This finding may be explained by the positive link between academic leaders' usage of AI in their institutions and improvements in their performance levels, and institutions' ability to keep up with the pace of technological advancement. On the other hand, traditional approaches are for faculty members to maintain their academic positions. Hence, they must use technology in their teaching strategies and research production.

Recommendations:

Based on the findings, the researcher recommends the following:

1. Encouraging faculty members to exchange teaching experiences and increasing introductory workshops on the importance of the faculty member's technological competencies.
2. We are promoting the culture of teaching competencies in the era of digitization by intensifying courses, seminars, conferences, lectures , and educational workshops.
3. It is employing AI applications in teaching courses and providing interactive applications for learning courses that contribute to enriching the academic content.
4. Conducting more research on AI and using it to develop all the educational and administrative elements in the university and improving the teaching methods of faculty members in the era of digitization.

Implications:

The researcher suggests the following points:

1. Conducting new research on enhancing the university administration's awareness of the importance of employing AI applications in the educational process, the required training and teaching needs of faculty members, and promoting cybersecurity concepts among faculty members, university employees and students.

2. We are providing, technical support to employ AI in the educational and administrative process at the university.
3. Stipulating regulations for educational competencies in Jordanian universities in the light of standards that consider personal, professional, social, cultural, and ethical competencies and publishing it to faculty members to benet from it in developing and developing their teaching performance i…
4. She is conducting, a comparative study between the performance of the faculty member for the regular teaching competencies , and the modern technological competencies in the light of the standards of the Scientific and Technological Association.

References:

Abdel Salam, W. (2021). Applications of Artificial Intelligence in Education, Domains , and Requirements for Ethical Risks, Journal of the College of Education, 6(4), 466-385.

Abdul Qadir, A. (2020). Applications of Artificial Intelligence: An Introduction to Education Development Amidst the Challenges of the Coronavirus Pandemic (COVID-19), International Journal of Research in Educational Sciences, 3(4), 224-171

Abdul Salam, W. (2021). Applications of Artificial Intelligence in Education, Domains, and Requirements for Ethical Risks, Journal of the College of Education, 6(4), 466-385.

Ajam, E. (1439 AH). Artificial intelligence and its implications for the high-performance organization, a prospective study in the Ministry of Science, Journal of Management and Economics, 115(41), 102-88.

Aldosari, S. M. (2020). The Future of Higher Education in the Light of Artificial Intelligence Transformations. International Journal of Higher Education, 9(3), 145-151.

Amal, M. & Fotia, F. (2017). Students' attitudes towards the job performance of university education teachers, a field study, of the University of Khemis Miliana, model, Al-Bahith Journal of Sports and Social Sciences, Algeria, 35 (4), 1-29.

Al-Asadi, A, Al-Abadi, H. & Al-Tai, J. (2008). University Education Department: a modern concept in contemporary administrative thought, Amman: Dar Al-Warraq.

Al-Astal, M., Akl, M., & Al-Agha, E. (2021). Developing a proposed model based on Intelligence and its effectiveness in developing programming skills among students of the University College of Science and Technology in Khan Yunis, Journal of the Islamic University for Educational and Psychological Studies, 29 (2), 743-772

Al-Ayasrah, E. (2017). Evaluation of the teaching performance of faculty members in the College of Education at Al-Jouf University from the

female students' point of view. International Journal of Educational and Psychological Studies.Vol. 2, no. 3, 2017

Bawashri, H. (2019). The strategy of time management and its relationship to the teaching performance of the university professor from the student's point of view. Unpublished master's thesis, University of Djilali, Bounaama - KhemisMiliana.

Al-Bisher, M. (2020). Requirements for employing artificial Intelligence in teaching Saudi university students from the point of view of experts, Journal of the College of Education, 20 (2), 92-27

Bou Bakr, N. (2019). The Role of Information and Communication Technology in Improving Higher Education Service: A Case Study at Martyr Hama Lakhdar University in El-Wadi, Journal of Economic and Financial Studies, 9(2), 259-278

Chang, W-Y. (2019). A Data Envelopment Analysis on the Performance of Using Artificial Intelligence-Based Environmental Management Systems in the Convention and Exhibition Industry. Ekoloji, 28 (107), 3515- 3521.

Crompton, H & Burke,D.(2023). Artificial intelligence in higher education: the state of the field, International Journal of Educational Technology in Higher Education, (2023) 20:22https://doi.org/10.1186/s41239-023-00392-8

Hinojo-Lucena, Aznar-Diaz, Caceres-Reche,Romero-Rodrguez. (2019). Artificial Intelligence in Higher Education A Bibliometric Study on its Impact in the Scientific Literature, Education Sciences,9 (1):51. University of Granada. Spain

Al-Huwaid, N. (2013). The contribution of the performance evaluation of a faculty member in raising the quality of university education. (unpublished master's thesis), Umm Al-Qura University, Makkah Al-Mukarramah: Saudi Arabia.

Imam, S & Barah, S. (2017). The level of quality standards for evaluating teaching performance at the Algerian University of Ouargla, from the point of view of its faculty members, The Arab Journal for Quality Assurance of University Education, 10 (31), 143-121

Jena, A. K. (2018). Predicting Learning Outputs and Retention through neural network artificial Intelligence in Photosynthesis, transpiration and Translocation, Asia-Pacific Forum on science learning and Teaching.19 (1).20-50

Kamuka, A. (2015). Artificial Intelligence in Programmed Education. Education Science, Cairo, Arab Foundation for Scientific Consultation and Resources Development.

Lou. D.(2018). Guide Teaching System Based on Artificial. Intelligence , International Journal of Emerging Technologies in Learning (iJET), 13(08):90, DOI: 10.3991/jet.v13i08.9058

Ma, Y. & Siau, K. (2018). Artificial intelligence impacts higher education. Proceedings of the Thirteenth Midwest Association for Information Systems Conference. Saint Louis, Missouri, May 17-18, 2018.

Malik, G,Tayal, D & Vij,S.(2019). An Analysis of the Role of Artificial

Intelligence in Education and Teaching, Recent Findings in Intelligent Computing Techniques, pp 407–417, https://link.springer.com/chapter

Al-Masry, E, & Tarawna, E. (2020). The reality of using artificial Intelligence applications that support the transformation of Jordanian public universities into productive universities from the academic leaders' point of view, Journal of the College of Education, 37 (11), 121-145

Al-Masry, N. (2022). The role of artificial intelligence technologies in improving the quality of services provided to students of the University of Jordan from their point of view, Scientific Journal of Education Quality Assurance, 38 (2), 290-266

Almasad, F & Alfarani, L. (2023). Application of artificial intelligence in education from the point of view of female secondary school, The Scientific Journal of the Egyptian Society for Educational Computer teachers,
https://eaec.journals.ekb.eg/article_272382.html?lang=en

Mira, A, & Katie, T. (2019). Applications of artificial intelligence in education from the point of view of faculties members at Universities, Psychological Science, Volume Conference, (22). Retrieved from https://www.iasj.net/iasj/article/178318

Muqiti, S. (2021). The reality of employing artificial intelligence and its relationship to the quality of performance of Jordanian universities from the point of view of faculty members, Unpublished master's thesis, Middle East University.

Nadimpalli, M. (2017). Artificial Intelligence Risks and Benefits, International Journal of Innovative Research in Science, Engineering and Technology,6 (6),1-5

Omran, M. (2014) Creative leadership for the development of university education as viewed by university faculty members: a field study. Libyan Journal of Studies, 17 (6) 191-230.

Popenici, S, & Kerr, S. (2017). We are explorin**g,** the impact of artificial intelligence on teaching and learning in higher education, Research and practice in technology-enhanced learning. V 12- 22.

Qamora, S, Wabi, M, & Krush, H. (2018). Artificial intelligence between reality and hope, a technical field study. International Forum "Artificial Intelligence: A New Challenge to Law?" Algiers, 26-27, https://www.researchgate.net/publication/328967715

Saada, C, & Al-Sartawy, A. (2013). The use of computers and the Internet in the fields of education. 2nd edition, Amman, Jordan, Dar Al-Shorouk.

Shaaban, A. (2020). Artificial intelligence and its applications in higher education, Educational Journal, Sohag University - Faculty of Education, Vol. 84, pp. 1-23

Al-Turafi, M. (2021). The availability of teaching and technical competencies among faculty members at Prince Sattam bin Abdulaziz University

in the light of Vision (2030) from their point of view, The Arab Journal for Scientific Publishing, 31 (2), 869-842

Yazizi, F. (2019). Using artificial intelligence applications to support university education in the Kingdom of Saudi Arabia: Association of Arab Educators, 113, 929-927.

Zhao, L, Chen, L, Liu, Q, Zhang, M & Copland, H. (2019). The artificial intelligence-based platform for online teaching management systems. Journal of Intelligent & Fuzzy Systems, 37(1), 45-51