Exploring the Effects of Using AI Technologies in Higher Education Institutions in UAE

Saada Khadragy[1, *], Nadeen Selim[2], Dalia Hassan[2], Asmaa Hegazy[3] & Sajjad Ali[4]

[1]College of Arts and Sciences, Umm Al Quwain University, Umm Al Quwain, UAE

[2]College of Mass Communication, Umm Al Quwain University, Umm Al Quwain, UAE

[3]College of Arts, Sciences and Information Technology, University of Khorfakkan, Sharjah, UAE

[4]Journalism and Mass Communication, University of Malakand, Pakistan

*Correspondence: College of Arts and sciences, Umm Al Quwain University, Umm Al Quwain, UAE. E-mail: Drsaada.khadragy@uaqu.ac.ae

Received: April 15, 2024 Accepted: June 20, 2024 Online Published: October 12, 2024

doi:10.5430/jct.v13n5p10 URL: https://doi.org/10.5430/jct.v13n5p10

Abstract

This study aimed to explore the effects of using artificial intelligence (AI) technologies in higher education institutions in UAE on students and faculty members. Through designing a survey on Google Form and adopting a descriptive analytical approach, the intended goals were met. This survey employs the five point Likert scale and includes two main parts. The first part collects data about (gender, name of the university, and academic rank). The second part targets two areas. The first area is the effects of using AI technologies in higher education institutions in UAE on students and the second area is the effects of using AI technologies on faculty members. The researchers shared the survey link on several WhatsApp groups that target faculty members in eight universities in UAE. The survey was filled by 244 faculty members. Thus, the purposive sampling method was used. SPSS program was used for conducting an analysis for the collected data. It was found that using AI technologies in higher education institutions in UAE has positive effects on students and faculty members. In terms of students using AI technologies develops the critical thinking, research, critical thinking and time management skills of students.

Keywords: effects, artificial intelligence (AI), AI technologies, higher education institutions, universities, UAE

1. Introduction

During the past couple of decades, the world has been witnessing rapid changes and developments in all the fields, especially in the technological field. Such developments include: the developments made in the field of artificial intelligence (AI). The term (artificial intelligence) was used for the first time in 1956 at a computing conference. It was used in the latter conference by Professor called John McCarthy. In this conference, the latter professor added that a machine can be developed to have intelligence that simulates human intelligence (Hassani et al., 2020).

AI technologies refer to computational advancements which simulate human intelligence for carrying out several tasks, such as: handling complex problems (Niu et al., 2024). They are used today in various fields, such as: the agricultural, business, industrial, medical and educational fields (Arabee', 2023). They may be used for entertainment (Khadragy, 2022).

AI technologies are used today in many higher education institutions worldwide due to their amazing features. Such features include: having the abilities to think, and solve problems despite the lack of information. They include: having the abilities to save, acquire and retrieve information fast. They include having the abilities to learn based on prior experiences and the abilities to respond fast. They include having the abilities to distinguish between several different items (Arabee', 2023).

The use of AI technologies in higher education institutions provides the staff and the students with many potentials. Such potentials include: doing many types of tasks. Such tasks include: administrative tasks (e.g. admission-related tasks). AI technologies may be also used in universities for doing academic tasks on behalf of instructors (e.g. assessment, feedback, tutoring, etc.). For instance, they can grade large number of students once without having to

spend hours or days doing that by the instructor himself/herself. They also allow grading students without being bias or having emotions interfering (Ahmad et al., 2022).

It should be noted that using AI technologies in higher education institutions changed the roles of instructors and students. For instance, such use turned the instructors into a guiders in the process of acquiring knowledge by students. It also turned students into active learners who acquire knowledge by themselves through searching for data and interpreting them (Alhawery and Aljamali, 2021).

Using AI technologies allows each student to identify his/her own achievement level, mistakes, strengths and weaknesses due to offering effective feedback (Alhawery and Aljamali, 2021). In addition, AI technologies allows instructors to take the individual differences between students into consideration when offering them smart tutoring services. That's because using AI technologies allows instructors to access saved records about the achievement and learning needs of each student. In addition, using AI technologies allows instructors to assess students' skills effectively, because such technologies offer students special exams for meeting this goal. It provides each student with academic material that fits with his/her own learning needs and weaknesses and strengths (Alhawery and Aljamali, 2021).

Using AI technologies enables instructors to track the progress of each student and identify the learning needs and achievement level of each student. That's attributed to the analytical features of AI technologies. In addition, using AI technologies enables instructors to choose effective instructional strategies, because they provide instructors with knowledge about the strategies deemed effective. It provides instructors with feedback on their teaching performance and enable them to identify their weaknesses, because AI technologies can carry out analytical processes for the feedback. They can provide instructors with summaries for curricula. That shall enable instructors to skip reading long texts in the curricula and save time (Alhawery and Aljamali, 2021).

Using AI technologies allows students to learn through using a variety of instructional methods rather than using one. It allows each student to learn based on the learning pattern that fits with his/her needs, and interests (Alatal et al., 2021). In addition, it allows editing the students' assignments automatically to check their compliance with the language rules, because some AI technologies are programmed to edit texts. It also improves the students' study skills and time management skills, because some AI technologies offer students training program on such skills. It offers students correct and reliable answers to their questions and inquires, because they are connected with books, journals, search engines and databases. It can enrich students' vocabulary, because they offer information obtained from e-dictionaries (Mohammad, 2023).

In this context, the researchers believe that the use of AI technologies in Emirati higher education institutions must increase. That's because such technologies have numerous advantages. It's because the use of AI technologies in the latter institutions shall improve the quality of higher education and reduce the workload of faculty members. Hence, this study aimed to explore the effects of using AI technologies in higher education institutions in UAE on students and faculty members.

In this regard, it should be noted that conducting this study is significant due to many reasons. For instance, this study is the first study to explore the effects of using AI technologies in higher education institutions in UAE on students and faculty members. In addition, it promotes awareness among decisions makers in institutions about the advantages of using AI technologies.

Regarding the implications of this study, the results of this study can be used for developing university curricula through adding AI-based exercises and material. They can be used for identifying the students' willingness to accept the use of AI technologies in lecture halls.

This study offered answers to the questions listed below:

Q.1. What are the effects of using AI technologies in higher education institutions in UAE on students?

Q.2. What are the effects of using AI technologies in higher education institutions in UAE on faculty members?

2. Theoretical Framework

2.1 The Meaning of the Term (AI technologies)

The term (artificial intelligence) was used for the first time in 1956 at a computing conference. It was used by Professor named John McCarthy (Hassani et al., 2020). AI technologies can be defined as computer systems which simulate human cognition through the use of data that are accessed from various sources/systems. They are used for making decisions and learning based on the recognized patterns. They can be also defined as technologies that have

computer systems capable of recognizing patterns and taking actions based on certain statistical models and the available data. They can carry out monitoring processes, detect faults, and make predictions (Hassani et al., 2020).

2.2 The Uses of AI Technologies in the Educational Field:

AI technologies have various uses in higher education institutions. For instance, they may be used to provide students with smart tutoring services instead of having to hire faculty members' assistants. They may be used to offer students and faculty members summaries for long academic materials. That shall save the time and effort needed to read long texts. Furthermore, AI technologies may design an academic material that fits with the learning needs of each student in a customized manner. That shall save the effort needed to customize each material based on the file and needs of each student (Alhawery and Aljamali, 2021).

AI technologies may be used by students to communicate effectively with their instructors and colleagues due to the communication features they offer. For instance, they can translate messages. They may be used by students to access academic references about the topic they are learning about. For instance, they offer access to well-known libraries, journals and electronic databases. They may be used to access and download the academic materials/ curricula, because they enable instructors to upload the material instantly and easily (Aljeraisy, 2023).

AI technologies may be used to get answers for difficult questions about the material, because they are connected to reliable databases, and search engines. They may be used by students to engage in goal-oriented learning activities. That shall make the process of learning an enjoyable and fun process for students and make students feel motivated to learn. AI technologies may be used to correct the students' works in an automatic manner and detect the mistakes in their writings, and projects (Aljeraisy, 2023)

AI technologies may be used by instructors to correct student's homework, analyse errors and carry out personalized weakness analysis in an automatic manner on behalf of instructors. That shall reduce the effort and workload of instructors. Furthermore, AI technologies may be used by students for collecting the academic materials and developing learning plans to make learning an organized and systematic process. That shall improve the outcomes of the learning process (Niu et al., 2024).

2.3 The Advantages of Using AI Technologies in the Educational Field:

Using AI technologies in the educational field – including higher education field- offers numerous advantages. For instance, it allows tracking the academic progress of each student accurately and separately. It also allows each student to identify his/her weaknesses and strengths. Furthermore, it also allows each student to engage actively in the learning process. To add more, using AI technologies allows assessing the skills of each student due to offering him/her special adaptive exams (Alhawery and Aljamali, 2021).

Using AI technologies allows students to address the academic problems they suffer from due to the ability of such technologies to diagnose academic problems. That shall contribute to improving the quality of the delivered education. In addition, using AI technologies allowing taking the individual differences between students into consideration in the learning process, because such technologies offer individualized educational programs, exams and materials that are based on the data saved about each student and his/her academic needs (Alhawery and Aljamali, 2021).

To add more, using AI technologies allows setting plans, making decisions, and conducting an analysis effectively by students and instructors. That shall make the teaching and learning process more systematic and consistent with the needs of each student. That's attributed to the ability to set academic plans for each student and analyse the academic data about each student. In addition, using AI technologies offers an objective assessment for students, because using the auto-correction features ensures eliminating the interference of human emotions in the assessment process (Alhawery and Aljamali, 2021).

Using AI technologies reduces the burdens and workload of instructors (Fitria, 2021). In addition, using AI technologies by instructors shall develop them professionally, because such technologies shall offer them much knowledge about the way of writing quizzes, syllabus and exams professionally (Atlas, 2023).

Using AI technologies can improve the students' academic achievement, because such technologies are capable of providing each student with much knowledge and academic references that fit with his/her achievement and needs. In addition, using AI technologies makes the students' feel pleasure while learning, because such technologies can provide access to enjoyable smart games and interactive features. It enables the students to communicate easily with their instructors due to the distinguished communication-based features they offer. Such features include: transferring the hand written messages into typed messages. In addition, using AI technologies allows students to engage in educational activities with their colleagues. It allows instructors to identify their weaknesses and strengths through

analysing the feedback of students in an automatic manner (Aljeraisy, 2023).

Using AI technologies allows students to identify their mistakes and avoid committing them instantly due to the auto-correction features offered by such technologies. That shall enable students to learn more. Using AI technologies allows students to have access to the academic material at any time and place easily. In addition, using AI technologies improves the students' understanding for the material, because they offer numerous exercises and simple illustrations (Aljeraisy, 2023).

Using AI technologies promotes a cooperative learning approach among students, because it offers opportunities to learn in groups. It increases the students' motivation and desire to learn and gain further information because AI technologies offer students enjoyable smart games and adaptive multimedia-based exercises. It provides students with learning opportunities in an ongoing manner, because such technologies shall answer questions instantly and present references about the relevant topic at any time (Aljeraisy, 2023)

3. Previous Studies

The researchers reviewed the following studies:

Alhawery and Aljamali (2021) explored the role of AI in fostering the academic empowerment of primary school students in the Republic of Yemen from the perspective of experts at Sana'a University. They adopted a descriptive approach and surveyed 23 experts working at Sana'a University in Yemen. The designed a survey targeting four areas, which are: (teachers, students, smart content, and smart systems). In terms of students, it was found that using AI technologies enables each student to identify his/her current achievement and the mistakes he/she committed. Using AI technologies provides students with opportunities to hold discussions. In terms of teachers, it allows them to choose the effective teaching methods. It also provides teachers with feedback and enables them to identify each student's achievement level.

Alatal et al. (2021) explored the role of AI technologies in delivering education from the perspective of the students enrolled at the faculty of basic education in the State of Kuwait. Through adopting a descriptive approach, the data were obtained from 229 students through employing a thirty one-item survey. It was found that AI technologies enable students to make effective academic decisions. Such technologies provide students and instructors with reliable feedback. They allow instructors to identify the achievement of each student in a more accurate manner. They motivate students to engage more in the learning process. They reduce the time needed by instructors for covering the curriculum.

Abu Swaireh et al. (2022) explored the effectiveness of teaching a proposed electronic unit on "artificial intelligence" for developing the programming skills of the female ninth graders in the cities in Gaza. The quasi experimental approach was adopted. The sample consists from (31) female ninth graders chosen from Gaza. The latter students were chosen from a school named (Ala'esheyah Basic School for Girls). A pre observational checklist and a post-observational checklist were used. It was found that teaching the proposed unit has a significant positive effect on developing the programming skills of the sample.

Ahmad (2022) aimed to explore the effectiveness of an artificial intelligence-based training program in developing the self-learning skills of chemistry teachers in Egypt. He explored the effectiveness of this program in improving the attitudes of those teachers towards collaborative learning. The experimental approach was adopted. The sample consists from twenty five (25) chemistry teachers in Egypt. A pre-test and post-test were used for assessing the self-learning skills of those teachers. A pre-scale and a post-scale were used for identifying the attitudes of those teachers towards collaborative learning. It was found that the proposed program has a significant positive impact on the self-learning skills of chemistry teachers in Egypt. It was also concluded that the targeted AI-based program has a significant positive impact on the attitudes of those teachers towards collaborative learning.

Hasnawi (2022) aimed to explore the perceptions of female kindergarten teachers towards the use of artificial intelligence (AI) technologies in teaching children in kindergartens in Tebessa, Algeria. She used a survey. She sampled thirty (30) female kindergarten teachers in Tebessa, Algeria. It was found that the teachers have positive attitudes. In addition, using AI improves the ability of kindergarten teachers in diagnosing and addressing children's problems. It improves the cognitive skills of children. It motivates children to learn new things. It also improves the teacher-children relationship. It also enables the teachers to simplify the information.

Daradkah et al. (2023) explored the advantages of using AI applications (AIPs) in universities for delivering education from the perspective of the students enrolled in the higher diploma program of school administration at Ajloun National University in Jordan. They adopted the descriptive analytical approach. They surveyed 81 students

enrolled in the latter program. It was found that respondents have positive attitudes towards using AIPs in universities for delivering education. Using such technologies develops the thinking and research skills of students and motivates students to learn. It increases the instructor-student communication. It promotes cooperation among students. It reduces the students' reliance on curriculum for acquiring knowledge. It provides the students with special needs with effective learning opportunities.

4. Methodology

The researchers adopted an approach called (the descriptive analytical approach). They also adopted a quantitative approach. According to Kaliyadan & Kulkarni (2019), the descriptive analytical approach may be adopted to provide one with general summaries or a description for a single variable or several variables. Such summaries or descriptions are presented through using quantitative measures.

According to Alderbashi and Tawdrous (2023), the descriptive analytical approach is usually adopted in the aim of offering a detailed description for the experiences or views of certain respondents about the topic under investigation. According to Barroga et al. (2023), the quantitative approach is adopted to focus on the numerical, statistical and quantitative aspects of a certain phenomenon

4.1 Population and Sample

The population consists of all the faculty members working at the Emirati higher education institutions during the academic year 2023 / 2024. Through designing a survey on Google Form, the required data were obtained. The researchers shared the survey link on several WhatsApp groups that target faculty members in eight universities in UAE. The survey was filled by (244) faculty members. Thus, the purposive sampling method was used. Data about the respondents are shown below

Table 1. The Distribution of the Sampled Faculty Members in Accordance with Gender, University and Academic Rank

Variable	Category	Frequency	Percentage
Gender	Male	150	61.47541
	Female	94	38.52459
Academic rank	Lecturer	38	15.57377
	Assistant professor	81	33.19672
	Associate professor	95	38.93443
	Professor	30	12.29508
University	University of Sharjah in Sharjah	32	13.11475
	Umm Al Quwain University in Umm Al Quwain	38	15.57377
	The British University in Dubai	30	12.29508
	American University in Dubai	29	11.88525
	Canadian University of Dubai	25	10.2459
	Abu Dhabi University in Abu Dhabi	29	11.88525
	New York University Abu Dhabi	37	15.16393
	Khalifa University in Abu Dhabi	24	9.836066

N=(244) faculty members

4.2 Instrument

The researchers designed a survey which employs the five point Likert scale. This survey includes two main parts. The first part collects data about (gender, name of the university, and academic rank). The second part targets two areas. The first area is the effects of using AI technologies in higher education institutions in UAE on students and the second area is the effects of using AI technologies on faculty members. The second part was designed based on the studies of Alatal et al. (2021), Aljeraisy (2023), Alhawery and Aljamali (2021), Daradkah et al. (2023), Mohammad (2023), Nikitas et al. (2020) and Fitria (2021).

After designing the survey, the researchers shared the survey link on several WhatsApp groups that target faculty members in eight universities in UAE (The names of the universities are shown in table (1). This link was shared during the second semester of the academic year 2023 / 2024

4.3 Validity and Reliability of the Instrument

Validity*:* To check the validity of the instrument, the survey was passed in its initial version –in English language - to three experts who work as faculty members. Those faculty members are specialized in teaching methods and work in an Emirati university. They were requested to make an objective assessment for the survey in accordance with standards connected to clarity, relevancy, format and language. They were requested to offer the researchers their recommendations, and make corrections where needed in the survey. After assessing this survey, they added that the survey is reliable and can be used for meeting the study's goals. They added that the survey is clear and well-written and comply with the rules of English language.

Reliability: To check the reliability of the instrument, the Cronbach alpha value was calculated. That's because the latter value reflects how reliable the survey is. This value is 0.724. It is classified as a high value, because it is higher than 0.70 as it's added by Salehi & Farhang (2019)

4.4 Statistical Analysis

The researchers used a statistical analysis program – called SPSS program- for analysing data. Several statistical means were used. They are listed in the points below. Through the use of the latter program and statistical means, results were reached:

- Means and standard deviations
- Frequencies and percentages
- The value of the reliability coefficient (i.e. Cronbach alpha)

For classifying the means into high, low or moderate means, the criteria displayed below were used (Alderbashi, 2021)

Table 2. The Criteria Used for the Classification of Means into High, Low or Moderate Means

Range	Level	Attitude
2.33 or less	Low	Negative
2.34-3.66	Moderate	Neutral
3.67 or more	High	Positive

*Source: Alderbashi (2021)

The five point Likert scale was used in the study's survey. It consists of five categories for rating the attitude. Those categories are listed in the third table (Al-Derbashi and Moussa, 2022)

Table 3. The Categories and Scores of the Likert Scale Used in This Research

Category	Score
Strongly agree	5
Agree	4
Neutral	3
Disagree	2
Strongly disagree	1

*Source: Al-Derbashi and Moussa (2022)

5. Discussion and Results

5.1 The Study's Areas

Table 4. The Means and Standard Deviations of the Areas

No.	Area	Mean	Std.	Level	Rank
1.	The effects of using AI technologies in higher education institutions in UAE on students	4.41	0.53	High	1
2.	The effects of using AI technologies in higher education institutions in UAE on faculty members	4.38	0.51	High	2
	Overall	4.39	0.52	High	

Based on this table, it was found that using AI technologies in higher education institutions in UAE has positive impacts on students, because the mean is 4.41. This result may be attributed to the fact that using AI technologies offers students unlimited number of learning opportunities. That shall enable them to expand their knowledge, improve their skills and achievement, and identify their academic weaknesses.

It was found that using AI technologies in higher education institutions in UAE has positive impacts on faculty members, because the mean is 4.38. This result may be attributed to the fact that using AI technologies allows instructors to develop their instructional competences and skills and expand their knowledge on instructional strategies. It may be attributed to the fact that using AI technologies allows faculty members to save time and reduce their workload. That shall make faculty members feel satisfied and pleased.

The results in details are presented below about each area separately:

5.2 Results Related to the First Question

Q.1. What are the effects of using AI technologies in higher education institutions in UAE on students?

Means and standard deviations are calculated by the researcher. The researchers displayed those values in the tables below (i.e. the fifth and sixth tables)

Table 5. The Effects of Using AI Technologies in Higher Education Institutions in UAE on Students

No.	Statement	Mean	Std.	Level	Attitude
	Using AI technologies in the university I work at				
	The first area: Students				
1.	provides each student with reliable feedback instantly on assignments.	4.94	0.50	High	Positive
2.	informs each students with accurate knowledge about his/her own strengths and weaknesses.	4.94	0.37	High	Positive
3.	allows students to improve their academic achievement.	4.95	0.82	High	Positive
4.	allows students to learn with taking the individual differences between them into consideration.	4.92	0.56	High	Positive
5.	reduces the students' reliance on curriculum for acquiring knowledge.	4.85	0.29	High	Positive
6.	promotes cooperation among students.	2.05	0.71	Low	Negative
7.	allows students to learn through using a variety of instructional methods.	4.72	0.44	High	Positive
8.	develops the research skills of students.	4.75	0.79	High	Positive
9.	develops the critical thinking skills of students.	4.79	0.33	High	Positive
10.	improves the study skills of students.	4.68	0.68	High	Positive
11.	improves the time management skills of students.	4.70	0.67	High	Positive
12.	provides the students with correct and reliable answers to their questions and inquires.	4.90	0.23	High	Positive
13.	enriches the students' vocabulary.	4.82	0.84	High	Positive
14.	positively affects the student-instructor relationship.	1.86	0.30	Low	Negative
	Overall	4.41	0.53	High	Positive

It was found that using AI technologies provides each student with reliable feedback instantly on his/her assignments, because the mean of item (1) is 4.94. This result is in agreement with the result of Alatal et al. (2021). It's attributed to the analytical features offered by such technologies. It was found that using AI technologies allows students to improve their academic achievement, because the mean of item (3) is 4.95. This result is in agreement with the result of Aljeraisy (2023). It's attributed to the fact that using AI technologies allows students to get summaries for texts and access well-known e-libraries to acquire knowledge from them.

It was found that using AI technologies allows students to learn with taking the individual differences between them into consideration, because the mean of item 4 is (4.92). This result is in agreement with the result of Alhawery and Aljamali (2021). It's attributed to the fact that using AI technologies offers students adaptive quizzes and educational games that fit with the achievement level of each student. It was found that using AI technologies allows students to learn through using a variety of instructional methods because the mean of item 7 is 4.72. This result is in agreement with the result of Alatal et al. (2021). It's attributed to the fact that such technologies are programmed to use a variety of instructional strategy in alignment with the type of the material.

It was found that using AI technologies develops the research skills of students, because the mean of item 8 is 4.75. This result is in agreement with the result of Daradkah et al. (2023). It's attributed to the fact that such technologies teach students how to research, acquire knowledge, and determine which references are deemed reliable. It was found that using AI technologies develops the critical thinking skills of students, because the mean of item 9 is 4.79. This result is in agreement with the result of Daradkah et al. (2023). It's attributed to the fact that using AI technologies allows students to learn how to analyse and interpret the presented data to form knowledge based on such interpretation.

It was found that using AI technologies improves the study skills of students, because the mean of item 10 is 4.68. This result is in agreement with the result of Mohammad (2023). It's attributed to the fact that using AI technologies provides students with knowledge about the way of reading texts critically, taking notes, and memorize and organize information. That shall teach students to study in a systemic professional manner. In addition, it was found that using AI technologies improves the time management skills of students, because the mean of item 11 is 4.70. This result is in agreement with the result of Mohammad (2023). It's attributed to the fact that using AI technologies provides students with training on the way of eliminating distractions, handling multi-tasks, prioritizing academic tasks, and setting academic goals, schedules and plans. That shall improve the ability of students to utilize their time wisely and effectively.

It was found that using AI technologies enriches the students' vocabulary because the mean of item 13 is 4.82. This result is in agreement with the result of Mohammad (2023). It's attributed to the fact that using AI technologies provides students with knowledge about concepts based on electronic dictionaries and studies published on the web.

However, it was found that using AI technologies doesn't promote cooperation among students, because the mean of item 6 is 2.05. This result is not in agreement with the result of Daradkah et al. (2023). It may be attributed to the fact that using AI technologies allows students to learn without having to get knowledge or references from their colleagues. It was found that using AI technologies negatively affects the student-instructor relationship because the mean of item 14 is 1.86. This result is not in agreement with the result of Daradkah et al. (2023). It may be attributed to the fact that using AI technologies reduces the reliance of students on their instructors. That shall lead to reducing the extent to which students communicate with their instructors.

5.3 Results Related to the Second Question

Q.2. What are the effects of using AI technologies in higher education institutions in UAE on faculty members?

It was found that using AI technologies allows faculty members to identify the exact current academic achievement level of each student accurately. That's because the mean of item 15 is 4.93. This result is in agreement with the result of Alhawery and Aljamali (2021). It may be attributed to the fact that such technologies use auto-correction features and assess the open ending questions based on specific rules and algorithms.

It was found that using AI technologies allows faculty members to gain reliable knowledge about the learning needs of each student. That's because the mean of item 16 is 4.94. This result is in agreement with the result of Alhawery and Aljamali (2021). It may be attributed to the fact that such technologies are capable of conducting accurate analysis for needs and weaknesses of each student and making records about such needs.

Table 6. Exploring the Effects of Using AI Technologies in Higher Education Institutions in UAE on Faculty Members

No.	Statement	Mean	Std.	Level	Attitude
	Using AI technologies in the university I work at				
	The second area: Faculty members				
15.	allows me to identify the exact current academic achievement level of each student accurately.	4.93	0.34	High	Positive
16.	allow me to gain reliable knowledge about the learning needs of each student	4.94	0.25	High	Positive
17.	allows me to track the progress of each student accurately.	4.89	0.64	High	Positive
18.	provides me with effective and reliable feedback on my teaching performance.	4.96	0.48	High	Positive
19.	allows me to choose effective instructional strategies.	4.63	0.55	High	Positive
20.	allows me to set effective academic plans.	4.60	0.21	High	Positive
21.	allows me to save my time.	4.88	0.73	High	Positive
22.	reduces my workload.	4.85	0.39	High	Positive
23.	allows editing the students' works automatically and accurately to check their compliance with the language rules.	2.16	0.75	Low	Negative
24.	provides me with reliable academic references.	4.74	0.46	High	Positive
25.	develops me professionally through offering me access to useful online training courses.	4.91	0.80	High	Positive
26.	allows me to ensure covering all the targeted material/curriculum during the semester.	2.17	0.53	Low	Negative
	Overall	4.38	0.51	High	Positive

It was found that using AI technologies provides faculty members with effective and reliable feedback on their teaching performance levels. That's because the mean of item 18 is 4.96. This result is in agreement with the result of Alhawery and Aljamali (2021). It may be attributed to the fact that using AI technologies provides faculty members with analysis for the feedback obtained from students. That shall contribute to improving the performance of faculty members. It was found that using AI technologies allows faculty members to choose effective instructional strategies. That's because the mean of item 19 is 4.63. It may be attributed to the fact that such technologies provide faculty members with knowledge on the instructional strategies deemed effective in accordance with the type of content and course.

It was found that using AI technologies allows faculty members to set effective academic plans. That's because the mean of item 20 is 4.60. This result is in agreement with the result of Nikitas et al. (2020). It may be attributed to the fact that such technologies are capable of developing plans based on the targeted duration and the academic material.

It was found that using AI technologies allows faculty allows faculty members to save time and reduces their workload. That's because the means of item 21 and item 22 are 4.88 and 4.85 respectively. This result is in agreement with the result of Fitria (2021). It may be attributed to the fact that such technologies can carry out tasks automatically on behalf of the faculty members, such as: the correction of homework and exam papers, and making an analysis for students' progress. That shall provide faculty members with more free time to develop themselves professionally.

It was found that using AI technologies provides faculty members with reliable academic references. That's because the mean of item 24 is 4.74. This result is in agreement with the result of Aljeraisy (2023). It may be attributed to the fact that AI technologies are programmed to access reliable databases and well-known electronic libraries. It was found that using AI technologies develops faculty members professionally through offering them access to online training courses. That's because the mean of item 25 is 4.91. This result is in agreement with the result of Atlas (2023).

However, it was found that using AI technologies doesn't allow editing the students' works automatically and accurately to check their compliance with the language rules. That's because the mean of item 23 is 2.16. This result

is in agreement with the result of Aljeraisy (2023). It may be attributed to the fact that such technologies may commit mistakes in the implementation of the rules of grammar and punctuation.

Despite the benefits of AI, it was found that using AI technologies doesn't allow faculty members to ensure covering all the targeted material/curriculum during the semester. That's because the mean of item 26 is 2.17. This result is in agreement with the result of Alatal et al. (2021). It may be attributed to the fact that covering all the targeted material is affected mainly by the abilities of each faculty member to manage his/her time well and explain the information well without having to repeat them again.

6. Conclusion and Recommendations

It was found that the use of AI technologies in higher education institutions in UAE has many benefits and positively affects students and faculty members. In terms of students using AI technologies develops the critical thinking, and research skills of students. That's because such technologies make students rely on themselves in the processes of searching for data, interpreting them and reaching results based on such interpretation.

Using AI technologies provides each student with reliable feedback instantly on assignments and informs each students with accurate knowledge about his/her own strengths and weaknesses. That is because such technologies are capable of diagnosing problems, detecting mistake and carrying out an analysis for such mistakes. It was found that using AI technologies improves students' achievement due to offering them unlimited number of academic references

In terms of faculty members, it was found that the use of AI technologies allows faculty members to identify the exact current academic achievement level of each student accurately. The using AI technologies allows faculty members to gain reliable knowledge about the learning needs of each student. That is because AI technologies have auto-correction features and the ability to carry out a systematic analysis for the students' answers to identify their needs. It was found that the use of AI technologies provides faculty members with effective and reliable feedback on their teaching performance, because AI technologies can analyse the feedback submitted by students. That shall enable faculty members to identify the areas they need to work on to improve their performance.

It was found that the use of AI technologies allows faculty members to choose effective instructional strategies. That's because AI technologies offer faculty members knowledge on the most effective strategies in alignment with the content, course and targeted students. It was found that using AI technologies allows faculty members to set effective academic plans due to the abilities of AI technologies to design plans based on the input data (e.g. data on students' achievement level, duration, content of the material and etc.).

In the light of the aforementioned results, the researchers recommend:

- Providing students and faculty members in UAE with training courses on the use of AI software and programs.

- Designing AI applications to be used by students and faculty members in UAE in the teaching and learning processes.

- Conducting a study that explore the attitudes of university students in UAE towards using ChatGPT for learning.

- Conducting a study about the challenges hindering the use of AI software and applications in lecture halls in Emirati universities.

References

Abu Swaireh, A., Asqool, M., & Aranteesi, M. (2022). The effectiveness of teaching a proposed electronic unit on "artificial intelligence" for developing the programming skills of the female ninth graders in the cities in Gaza. *Journal of the Islamic University for Educational and Psychological Studies, 30*(5). Retrieved from http://search.shamaa.org/FullRecord?ID=304080

Ahmad S., Alam, M., Rahmat, M., Mubarik, M., & Hyder, S. (2022). Academic and Administrative Role of Artificial Intelligence in Education. *Sustainability*, *14*(3). https://doi.org/10.3390/su14031101

Ahmad, E. (2022). A training program based on artificial intelligence to develop the self-learning skills of chemistry teachers and their attitudes towards collaborative learning. *Journal of the faculty of education- Asyoot University, 38*(3), 155-107. Retrieved from http://search.shamaa.org/FullRecord?ID=332829

Alajlan, A. (2022). The Application of Artificial Intelligence in Public Education Schools in the City of Riyadh in the Kingdom of Saudi Arabia: Reality, Requirements, and Challenges. *Journal of the Islamic University for Educational and Social Sciences, 12*, 115-148. Retrieved from https://search.mandumah.com/Record/1340160

Alatal, M., Alanzi, I., & Alajmi, A. (2021). The role of artificial intelligence (AI) in education from the perspective

of the students at the faculty of basic education in the State of Kuwait. *Journal of Studies and Educational Research, 1*(1), 30-64. Retrieved from http://search.shamaa.org/FullRecord?ID=275510

Alderbashi, K. (2021). Attitudes of Primary School Students in UAE towards Using Digital Story-Telling as a Learning Method in Classroom. *Research on Humanities and Social Sciences, 11*(10), 20-28. https://doi.org/10.7176/RHSS/11-10-03

Al-Derbashi, K., & Moussa, M. (2022). Effectiveness of Employing the E-mind Mapping Strategy in Scientific Courses: Adopting the Blended Learning Approach at Emirati Private Preparatory Schools. *Journal of Curriculum and Teaching, 11*(4), 159-170. https://doi.org/10.5430/jct.v11n4p159

Alderbashi, K., & Tawdrous, M. (2023). Effectiveness of Employing the Imaginative Learning Strategy in Scientific Courses in Emirati Private School. *Journal of Curriculum and Teaching, 12*(3), 159-171. https://doi.org/10.5430/jct.v12n3p159

Alhawery, A., & Aljamali, A. (2021). The role of AI in the academic empowerment of primary school students in the Republic of Yemen: An exploratory study targeting the opinions of experts at Sana'a University. *Social studies Journal- University of Science and Technology (Yemen), 7*(4), 98-121. Retrieved from https://www.researchgate.net/publication/378231066_dwr_aldhka_alastnay_fy_altmkyn_aldrasy_ltlbt_almrhlt_alasasyt_baljmhwryt_alymnyt

Aljeraisy, W. (2023). The impact of E-learning support through smart chatbots enhancing academic performance and happiness across educational platforms for secondary school students. *Journal of Curriculum and Teaching Methodology (JCTM), 2*(12), 102-83. Retrieved from https://journalctm.com/2024/03/03/j090723/

Alotaibi, F., Alharbi, M., Albloi, O., & Alqahtani, M. (2021). The Role of Artificial Intelligence in the Development of Critical Thinking and Scientific Trends among Female Students of the Second Year of Secondary School in the Physics Course. *Journal of Educational Sciences and Human Studies, 21*, 141-172. Retrieved from http://search.shamaa.org/FullRecord?ID=306267

Arabee', M. (2023). Artificial intelligence and its applications in education. *Elite Journal for Studies and Research, 2*(1), 15-24. Retrieved from https://ejsr.alno5ba.com/research.php?rid=20

Atlas, S. (2023). ChatGPT for Higher Education and Professional Development: A Guide to Conversational AI. University of Rhode Island. Kingston, RI, USA. Retrieved from https://digitalcommons.uri.edu/cba_facpubs/548

Barroga, E., Matanguihan, G. J., Furuta, A., Arima, M., Tsuchiya, S., Kawahara, C., Takamiya, Y., & Izumi, M. (2023). Conducting and Writing Quantitative and Qualitative Research. *Journal of Korean Medical Science, 38*(37), e291. https://doi.org/10.3346/jkms.2023.38.e291

Daradkah, A., Alqudah, R., Hasan, A., & Daradkah, H. (2023). The Benefits, Challenges, & Proposed Solutions of Using Artificial Intelligence Applications (AIP) in University Education: The Higher School Administration Diploma Students' Perspective at Ajloun National University. *International Journal of Educational Sciences and Arts (IJESA), 2*(5), 10-35

Fitria, T. N. (2021). Artificial Intelligence (AI) In Education: Using AI Tools for Teaching and Learning Process. *Prosiding Seminar Nasional & Call for Paper STIE AAS*- Institut Teknologi Bisnis AAS Indonesia, Indonesia. Retrieved from https://www.researchgate.net/publication/357447234_Artificial_Intelligence_AI_In_Education_Using_AI_Tools_for_Teaching_and_Learning_Process

Hasnawi, R. (2022). Integrating artificial intelligence techniques as a modern manner in the development of education programs in the Kindergarten: Field study in kindergartens from the point of view of the local community teachers, Tebessa. The Proceeding of the second international conference for education in the Arab world- problem and solutions, Saudi Arabic, 4th-6th, March, 2022. Retrieved from http://search.shamaa.org/FullRecord?ID=313626

Hassani, H., Silva, E., Unger, S., TajMazinani, M., & Mac Feely, S. (2020). Artificial Intelligence (AI) or Intelligence Augmentation (IA): What Is the Future? AI. *1*(2), 143-155. https://doi.org/10.3390/ai1020008

Kaliyadan, F., & Kulkarni, V. (2019). Types of Variables, Descriptive Statistics, and Sample Size. *Indian Dermatology Online Journal, 10*(1), 82-86. https://doi.org/10.4103/idoj.IDOJ_468_18

Khadragy, S. (2022). Artificial Intelligence and the future of employment: a systematic review of the state of the art

literature. *International Journal of Mechanical Engineering, 7*(2), 3118-3125.

Mohammad, S. (2023). Using Chat GPT as one of the applications of artificial intelligence in supporting the educational process. *International Journal of Research*, 1-16, https://doi.org/10.5281/zenodo.7768868

Nikitas, A., Michalakopoulou, K., Njoya, E., & Karampatzakis, D. (2020). Artificial Intelligence, Transport and the Smart City: Definitions and Dimensions of a New Mobility Era. *Sustainability*, *12*(7), 2789. https://doi.org/10.3390/su12072789

Niu, W., Zhang, W., Zhang, C., & Chen, X. (2024). The Role of Artificial Intelligence Autonomy in Higher Education: A Uses and Gratification Perspective. *Sustainability*, *16*(3). https://doi.org/10.3390/su16031276

Salehi, M., & Farhang, A. (2019). On the adequacy of the experimental approach to construct validation: the case of advertising literacy. *Heliyon, 5*(5). https://doi.org/10.1016/j.heliyon.2019.e01686

Acknowledgments

Not applicable.

Authors contributions

Not applicable.

Funding

Not applicable.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Sciedu Press.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.