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The Role of Artificial Intelligence Technologies in Improving the Quality of Services Provided to Overseas Students

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*Abstract***:**

This study aimed to reveal the role of artificial intelligence technologies in improving the quality of services provided to foreign students at the Faculty of Education, Assiut University, from their perspective. A descriptive analytical approach was used, and the study sample consisted of 410 male and female students. The results of the study showed that the use of artificial intelligence technologies at Assiut University from the perspective of foreign students came to a good degree, and the quality of services provided to students came to a moderate degree. The results showed that there is a role for artificial intelligence fields in improving the quality of student services at Assiut University**.**

Keywords: Quality of services, artificial intelligence technologies, electronic services.

I. INTRODUCTION

Higher education institutions in the 21st century strive to change and develop their programs and strategies to keep pace with the rapid global changes in all fields, including the scientific and technological Revolution. (Chen, Chen, & Lin, 2020). They have therefore resorted to introducing and investing in artificial intelligence technologies in their activities to achieve the three functions assigned to them, whether they are teaching, research, or community services (Barakina, Popova, Gorokhova, & Voskovskaya, 2021). In general, educational institutions, and universities in particular, strive to provide high-quality educational services to create an attractive learning environment for students (Ilic, Paun, Popovic Ševic, Hadžic, & Jianu, 2021) . They also seek to provide various activities aimed at developing and refining the student's personality. For a university to achieve its

goals in the face of these developments and keep pace with them (Huang, Saleh, & Liu, 2021). it is necessary for it to undergo a development process and introduce artificial intelligence technologies to improve the quality and speed of services (Reis, Amorim, Cohen, & Rodrigues, 2020). Artificial intelligence technologies are considered one of the modern strategic technologies that are concerned with the production of knowledge through its acquisition, storage, processing, interpretation (Komninos, 2006).

and investment in solving problems and providing new services. They seek to achieve greater efficiency and new opportunities to achieve competitive

overcome. Artificial intelligence, thanks to its ability to process large amounts of data and generate useful patterns, is revolutionizing the way geographic studies are conducted.

The different relationships between geographic elements can be clarified, and the impact of geographic changes on the environment, economy, and society can be studied (Ilic, Paun, Popovic Ševic, Hadžic, & Jianu, 2021). Artificial intelligence can also be used to develop satellite, radar, and laser imaging systems that allow for accurate imaging of the Earth and tracking of geographic changes over time (Huang, Saleh, & Liu, 2021). Geographic applications supported by artificial intelligence also help to improve decision-making processes and provide effective solutions to various geographic challenges (Reis, Amorim, Cohen, & Rodrigues, 2020), which helps to improve human life and preserve the world's natural, cultural, and material resources.

Artificial intelligence today creates three-dimensional models as text-to-image algorithms. Therefore, the first stage in training one is to feed it two-dimensional images, which allows the learner to easily visualize things between the past and the present. In light of this, the current paper attempts to shed light on the concept and development of the reality of artificial intelligence within the geographical field through three-dimensional maps and their role in the educational process, and to present some of the application aspects of artificial intelligence within the system of geographic information systems and remote sensing, with a focus on cellular automata (CA) within the GIS environment, and artificial neural networks (ANN) within the remote sensing environment, and investment in solving problems and providing new services. They seek to achieve greater efficiency and new opportunities to achieve competitive Interpretation (Zawacki-Richter, Marín, Bond, & Gouverneur, 2019). Artificial intelligence has been defined as a branch of computer science that can be used to create and design computer programs that mimic the style of human intelligence, enabling the computer to perform some of the tasks that humans perform. (Ocaña-Fernández, Valenzuela-Fernández, & Garro-Aburto, 2019) which require thinking, understanding,

speaking, and moving in a logical way, Integrating an adjusted conversational agent into a mobile-assisted language learning pplication (Troussas, Krouska, & Virvou, 2017). The services provided by universities to their students vary, including academic services, which include educational programs, teaching processes, curriculums, and evaluation (Nagao & Nagao, 2019). As for Assiut University, which is the focus of this study, it has established several units called the Technological Services, which include several departments, including cultural and artistic activities, services, assistance, initiatives, student clubs, electronic payment services, and electronic evaluation (Sarrayrih & Ilyas, 2013).

Universities play a key role in improving the quality of their educational services to achieve student satisfaction, which raises their levels of excellence and competitiveness. This can be done by adopting artificial intelligence technologies that support the improvement of the quality of services provided to students. This motivates researchers to conduct this study and investigate the role of artificial intelligence technologies in improving the quality of services provided to foreign students at Assiut University through postgraduate, bachelor's, and associate degree programs. It is therefore important to highlight the strengths and weaknesses of these services and try to convert them into strengths with artificial intelligence services and technologies to provide the best possible service to students.

The study aimed to answer the following two questions:
- What is the role of artificial intelligence technologies in improving the quality of services provided to foreign students at Assiut University from their perspective?
- Are there statistically significant differences in the improvement of the quality of services provided to students from their perspective due to the variables of gender, study program, and educational qualification?

The study aimed to reveal the role of artificial intelligence technologies in improving the quality of services provided to students at Assiut University from their perspective.

The study also aimed to identify the statistical differences due to the variables of gender, study program, and type of study.

The importance of this study lies in its attempt to reveal the role of artificial intelligence technologies in improving the quality of services provided to foreign students at the Faculty of Education, Assiut University, from their perspective. The importance of the study is evident in the following two aspects:

First, the study is a relatively recent study in the field of artificial intelligence. Therefore, it may contribute to enriching previous and future studies. It may also open broad horizons for researchers to address such a topic from

different angles in order to reach more comprehensive and inclusive studies, which will help to support the theoretical literature in general.

Second, the studies may be useful in revealing the role of artificial intelligence technologies in improving the quality of services provided to foreign students at Assiut University from their perspective.

II. LITERATURE REVIEW

Research has highlighted the uses of artificial intelligence in learning and its importance. These studies include:

- Pedro, F., Subosa, M., Rivas, A., & Valverde, P. (2019). Artificial intelligence in education: Challenges and opportunities for sustainable development.
- Kharbat, F. F., Alshawabkeh, A., & Woolsey, M. L. (2021). Identifying gaps in using artificial intelligence to support students with intellectual disabilities from education and health perspectives. Aslib Journal of Information Management, 73(1), 101-128.
- Okunlaya, R. O., Syed Abdullah, N., & Alias, R. A. (2022). Artificial intelligence (AI) library services innovative conceptual framework for the digital transformation of university education. Library Hi Tech, 40(6), 1869-1892.

Community and Sample of the Study:

The study population consisted of foreign students who studied at Assiut University during the academic year 2021-2022. The sample of the study consisted of 410 male and female students who were randomly selected.

Table 1: Community and Sample of the Study

variable	Category	frequency	%
type	Male	211	51.5
	Female	199	48.5
program	Regular	307	74.5
	Parallel	98	23.9
	international	5	1.2
qualifications	Bachelor's	293	71.5
	Master's	94	22.9
	PhD	23	5.6

Table (2) Mean and Standard Deviation of Artificial Intelligence Technologies

The Field	Mean	Standard Deviation	Rank	Grade
Quality of Curricula and Teaching	3.51	0.817	3	Average
Decision Making	3.50	0.734	4	Average
Distance Learning	3.56	0.795	1	Average
Training	3.54	0.665	2	Average
Artificial Intelligence Technologies	3.53	0.6190	-	

Table (3) Mean of Student Services Quality

The Field	Mean	Standard Deviation	Rank	Grade
Students are trained to prepare research and projects based on community problems using artificial intelligence technologies.	3.64	1.064	5	Average
The university's electronic website meets the needs of students in all areas.	3.71	0.898	3	high
Effectively responding to student complaints and grievances through modern technical means	2.41	1.050	11	Average
A faculty member implements modern teaching strategies based on distance learning	3.34	1.123	12	Average
Effective and continuous communication between students, faculty, and staff through a variety of channels	3.60	1.007	6	Average

question	Political Geography Course		
	Freq.	%	Rank
Data analysis and structuring in three-dimensional maps	12	24	2
Applications of artificial intelligence in three-dimensional maps	16	32	1
Programming artificial intelligence and three-dimensional maps	8	16	4
Physical computing for political geography course	10	20	3
Deep learning and its impact on artificial intelligence	4	8	5
total percentage of question application".	50	100	-------

III. RESULT

The results of the study can be summarized as follows:

- The overall measure of the use of artificial intelligence techniques at Assiut University from the perspective of the expatriate students came in at a moderate level with an average of 3.53. Distance learning came in first place with an average of 3.56 and a moderate level, while training came in second place with an average of 3.54 and a moderate level, followed by the quality of teaching curricula in third place with an average of 3.51 and a moderate level, and decision-making came in last place with an average of 3.50 and a moderate level.

- The overall measure of the quality of student services at Assiut University for expatriate students from the students' perspective came in at a moderate level with an average of 3.38. The quality of teaching and evaluation came in first place with an average of 3.65 and a moderate level, while effective communication came in second place with an average of 3.32, and academic guidance came in last place with an average of 3.21 and a moderate level.

- There were no statistically significant differences between males and females in improving the quality of educational services provided to students.

- There were statistically significant differences in improving the quality of services provided to students between academic qualifications, in favor of those holding a master's and doctoral degree, and to a lesser extent for bachelor's degree students.

IV. RECOMMENDATIONS AND PROPOSALS OF THE STUDY

Recommendations:

Considering the results that were reached, the study recommends the following:

- The need to develop and improve the management of the academic guidance unit available on the university platform in order to provide students with the necessary guidance needs, through the use of appropriate guidance methods and ensuring that they are delivered to the largest number of students.

- The importance of equipping lecture halls and computer laboratories with the latest equipment and devices to keep pace with modern technological developments.

- Making more efforts to respond to student complaints and grievances quickly and effectively through the means of modern technology.

- Conducting more field and survey studies of university students in order to identify the shortcomings in the services provided by the university and to move quickly to address them, as well as to identify the new trends in student services that students aspire to meet and provide.

V. REFERENCES

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