

## A Proposed Vision for Developing the Administrative System in Higher Education in the light of Artificial Intelligence Applications

### Scientific Research

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#### Abstract

This research aimed to plant a proposed conception for developing the administrative system in light of artificial intelligence applications in higher education in Yemen. The researcher explained the problem, objectives, and importance of the research, and referred to some relevant Arabic and foreign studies. The research tool also consisted of a questionnaire that was applied electronically, with a sample consisted of 137 individuals from higher education institutions in Yemen. The results demonstrated a high relative importance of using artificial intelligence in the administrative system. The research also mentioned the foundations of the proposed conception, the most important of which were: predicting the possibilities and imagining the desired future, taking into account that this future is variable due to artificial intelligence applications. Realism is achieved by monitoring the current reality and basing the goals that it seeks to achieve on available resources. Specific and prioritized goals are set based on statistics, data, and accurate information obtained through analysis of the internal and external environment. Flexibility and continuity are crucial, ensuring that the conception is an interconnected series of overlapping processes. Continuous follow-up and evaluation are necessary to track the success of the conception and assess the current situation, identifying its strengths and weaknesses. Several recommendations have been made, including: the development of higher education in light of artificial intelligence applications focuses on improving the technical infrastructure to enhance administrative performance efforts and to improve funding, spending, and work opportunities. The researcher also suggested providing highly qualified specialists to support the technical aspects by fixing network damage.

**key words:** *institutional trends, proposed vision, administrative system, higher education, artificial intelligence applications.*



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## 1. Introduction

The world is currently experiencing a prosperous era of science and technology, and achieving distinctive levels of scientific and technical progress in a significant way that includes various aspects of life. Technology has become one of the necessities of the time, the basic driver for any human progress, and one of the most important factors in the development of human society. Today, the world is confronted with numerous challenges that have triggered a profound transformation in humanity. The outcome of this transformation will largely depend on how we address risks and seize opportunities. This has made the world as an electronic village. (Ali, 2020, Al-Ghobesi, 2025)

Scientific developments and their advanced and renewable applications have created an administrative, educational, and technical reality different from what it was in previous decades. Artificial intelligence is considered one of the most important outcomes of the Fourth Industrial Revolution due to its multiple uses. It is expected to open the door to limitless innovations, and this will lead to more industrial revolutions. This radical change in human life positions artificial intelligence as the driving force behind progress, growth, and prosperity during the next few years. The resulting innovations will establish a new world that may now have seemed unimaginable until now. Many smart technologies based on artificial intelligence have emerged, surpassing limits in production capabilities and effectiveness of use. Human minds have begun to work hard and study them to develop them in service of educational institutions, benefiting them and improving the quality of their performance (Deesing, 2017, Omer, 2024).

The trends of most institutions have shifted from traditional administrations to modern administrations characterized by the use of technology and employing and benefiting from artificial intelligence techniques, which in turn work to increase the efficiency of the performance of public institutions and private universities (Luo, 2018, Alasmari, 2023).

Hence, higher education institutions in Yemen must try to develop their administrative and technical systems, and we must interact with global changes and the modern requirements, conditions, and necessities of the new reality and possess the flexibility necessary to advance towards the future because they are obligated to adapt to the reality imposed by the era as, today, globalization and transformations are using modern technologies to be the best source of information.

## 2. The Problem of the Research

In the present, the most universities develop their countries which have turned to improving and developing their management systems. In this era, there is no other alternative options for these universities

but to turn to electronic management by employing artificial intelligence in their management (Al-Khataybah, 2015). The Fourth Industrial Revolution also brought a set of challenges, the most important of which are outlined by (Al-Arabi and Al-Qashlan, 2009-509, Mleiki, 2025):

- I. **Electronic Challenges:** They are represented by the dangers of the Internet, which requires the state to work to protect cyberspace.
- II. **Artificial Intelligence Challenges:** They are represented in the software system that will enable machines to think and decide their actions without human intervention.
- III. **Geopolitical Challenges:** They are represented by conflicts and divisions that will harm the global development process.
- IV. **Economic Challenges:** They are represented by the disparity in the distribution of wealth and income levels between social groups and occupy second place in the list of risks mentioned in the report (2018). This requires the world to make highly efficient technologies available to all countries.

In light of what has been mentioned above, it is clear that there is a large gap between scientific development and technological development. Given the disability of higher education institutions in Yemen to respond to these developments, the administrative system in higher education lacks clear-cut strategies that are characterized by a bureaucratic nature, which makes it difficult for higher education institutions to face challenges. The Fourth Industrial Revolution began with traditional methods of management.

**In light of what has been mentioned above, the research problem is determined by answering the following questions:**

- 1- What is the proposed scenario for the development of the administrative system in higher education in light of artificial intelligence applications in Yemen?
- 2- What are the obstacles to the proposed conception for developing the administrative system in higher education in light of artificial intelligence applications?
- 3- Is there an influential relationship between artificial intelligence applications and the development of the administrative system in higher education in Yemen?
- 4- What are the most important recommendations and suggestions for developing the administrative system in higher education in light of artificial intelligence applications in Yemen?

### 3. Objectives:

1- To review the proposed conception for the development of the administrative system in higher education in light of artificial intelligence applications in Yemen.

2- To address the obstacles hindering the implementation of the proposed conception for developing the higher education administrative system in light of artificial intelligence applications in Yemen.

3- To explain the relationship between artificial intelligence applications and the development of the administrative system in higher education in Yemen.

4- To provide recommendations and suggestions to develop the administrative system in higher education in light of artificial intelligence applications in Yemen.

### 4. The Importance of Research:

#### 1- The theoretical significance:

This research addresses a modern and universal topic in the Arab, regional and global countries. The research aims to contribute to the development of a proposed conception for developing the educational administrative system in Yemen in light of the applications of artificial intelligence. This aspect of the research emphasizes the significance of artificial intelligence.

#### 2- The applied importance:

The applied importance highlights the practical significance of this research, as it aims to draw the attention of professionals in the field of higher education to the importance of employing artificial intelligence in the administrative systems of both public and private universities in Yemen. It is also expected that this research will benefit all decision-makers in higher education by providing them with a proposed conception to develop the administrative system in light of artificial intelligence applications. Furthermore, it can serve as a valuable resource for planners providing them with the necessary information to effectively plan for the future. Additionally, it may also benefit those in charge of higher- education institutions in order to advance education in light of artificial intelligence.

### 5. Theoretical framework:

The proposed conception for developing the administrative system in higher education in light of artificial intelligence applications in Yemen provides better educational opportunities for administrators. It is used to

create interactive learning environments under the supervision of efficient administrative system professionals, thereby improving their time management and efficiency. The state's efforts to develop the administrative system in higher education, to keep pace with the changes in the light of artificial intelligence applications, involve the following strategies (Abu Al-Nour, 2023, Ahmed, 2025):

- 1- Setting clear and relevant goals that meet the needs of education and its divisions.
2. Prioritizing the achievement of objectives with material capabilities.
3. Employing a technical approach to analysis the future prospects.
4. Recognizing that the future is constantly changing due to technical development and artificial intelligence applications.
5. Emphasizing realism by monitoring the current reality and building upon it.
6. Possibilities: The conception of different activities in the educational process.
7. Flexibility: The perception of the greatest degree of freedom to face unrealistic changes.
8. Implementing continuous follow-up and evaluation to ensure ongoing improvement.

#### **The requirements for developing the higher education system:**

1. Developing administrative systems based on the Internet and the applications of artificial intelligence.
2. Creating functions related to the management of higher education institutions based on artificial intelligence applications.
3. Improving administrative performance using artificial intelligence applications.
4. Holding workshops for administrative leaders to adopt the culture of artificial intelligence with education.

#### **Mechanisms to activate the requirements for the employment of artificial intelligence applications**

- 1- To improve the administrative systems by relying on the Internet and artificial intelligence.
- 2- Management of higher education institutions according to artificial intelligence applications.
- 3- Building an administrative system to regulate the management of digital content by the applications of artificial intelligence.
- 4- Training leaders to spread the culture of artificial intelligence applications in the development of education.

### Obstacles of applying the proposed conception:

- 1- The weakness of the national economy that limits the applications of artificial intelligence in the higher education systems in Yemen.
- 2- The widening gap between contemporary real needs and the traditional system of higher education policies.
- 3- Some officials make decisions alone and do not allow the other opinion or criticism.
- 4- There are not the legislations obligating which is the supporting existence, such as the ministries, organizations and institutions to develop the structure system in higher education.

### Ways to overcome the obstacles of applying the proposed conception:

- 1- To activate more projects, seminars and conferences on artificial intelligence applications in education.
- 2- Opening channels of communication between local education institutions and external education to gain experiences.
- 3- Enact legislation obligating the state ministries to support the development of the administrative system of higher education in light of artificial intelligence applications.
- 4- Motivating leaders to look up and practice the applications of artificial intelligence in higher education.

### 6. Related works:

- 1- Alia Al-Hwaiti (2022): It aimed to examine the degree of acceptance of faculty members in Jordanian universities to use the applications of artificial intelligence in light of the unified theory of acceptance and use of technology, UTAUT, and the study sample consisted of 250 faculty members, and the study tools consisted of a questionnaire that was applied electronically.
- 2- Majed Al Habib (2022): Employing artificial intelligence applications in training faculty members in Saudi universities, from the point of view of education experts, and the obstacles that limit their employment. The results showed that the sample members agreed to a medium degree on the fact that these applications related to artificial intelligence were employed in the training of faculty members, and they agreed that there were obstacles that limit their application in the training of the faculty members, and then presented a proposed conception to overcome them.

- 3- The study (Zhao, Chen, Liu, Zhang & Copland, 2019) in China: It aimed to reveal the impact of the use of online AI-based teaching systems. In order to analyze the studies that used the Internet AI- based teaching systems. The results indicated that the use of Internet AI- based teaching systems positively affected the degree of academic achievement of students.
- 4- Hudasi & Ady study (2020), conducted in Hungary, aimed at discovering data management methods in smart city systems by using artificial intelligence. To achieve the goal of the study, a specific methodology based on data generation was used, and the result of the study indicated that smart cities adopt artificial intelligence systems that are characterized by their high sensitivity.

#### 7. Research tools:

To achieve the objectives of the research and to collect field data from the vocabulary of the random sample and to answer its questions, the data was processed through the use of many statistical methods and procedures by the Social Program Statistical Sciences Analysis (SPSS). The research included higher education institutions in the Republic of Yemen, and the research sample was a random sample, and it targeted the 137 members of the administrations. This indicates that the percentage of the 11 to 15-year-old category is suitable for enhancing confidence. The validity of the answers obtained from the respondents.

Table (2) shows the mean and standard deviation

	PHRASES	NOT TOTALLY AGREE	NOT AGREE		AGREE	TOTALLY AGREE	THE MEAN	STANDARD DEVIATION
		Number	number	number	number	number		
		Percentage	percentage	percentage	percentage	percentage		
1	Adding a new subject to increase sensory comprehension and technical skills in the administrative system	9	17	34	38	39	3.5912	1.2099
		6.6	12.4	24.8	27.7	28.5		
2	Artificial intelligence application drawing contributes to the development of the administrative system	6	13	31	56	31	3.6788	1.0637
		4.4	9.5	22.6	40.9	22.6		
3	Providing the modern proposed visualization training programs to expand the use of artificial intelligence applications for system development	6	11	34	58	28	3.6493	1.0848
		4.4	8.0	24.8	42.3	20.4		
4	To show the proposed conception of presenting creative ideas and solutions in the administrative system at higher education	10	14	30	46	37	3.6277	1.1944
		7.3	10.2	21.9	33.6	27.0		

PHRASES	NOT TOTALLY AGREE	NOT AGREE		AGREE	TOTALLY AGREE	THE MEAN	STANDARD DEVIATION
	Number	number	number	number	number		
	Percentage	percentage	percentage	percentage	percentage		
5 The proposed conception is based on artificial intelligence systems that are characterized by their precise sensitivity to rapid development of the administrative system	9	11	36	52	29	3.5912	1.1085
	6.6	8.0	26.3	38.0	21.2		
6 The proposed conception of management leadership develops its expertise by working efficiently and effectively.	15	25	31	45	22	3.5474	3.6941
	10.9	17.5	22.6	32.8	16.1		
7 The proposed conception is used to improve the outputs of higher education	8	8	36	56	29	3.6569	1.0602
	5.8	5.8	26.3	40.9	21.2		
8 The holding of training workshops helps the administrative leadership to develop the ideas of the administrative system	6	11	35	58	27	3.6642	1.0329
	4.4	8.0	25.5	42.3	19.7		
The result	76	125	296	464	274	3.6355	1.3978
	6.17	9.96	24	37.62	22.23		

Source/ prepared by the researcher according to the results of the statistical analysis using SPSS.

## 8. The results

- 1- The results of the analysis are noted in the table, as the arithmetic mean of the answers of the sample members reached (3.6355), which is greater than the hypothetical average of (3), and this indicates that the total score is for answers to the sample members on aggregate.
- 2- According to the results shown in the above table, we note that there are statistically significant differences and a statistically significant relationship between the applications of artificial intelligence and the development of the administrative system of higher education in Yemen.
- 3- Highlighting the proposed conception of artificial intelligence applications on the development of the administrative system in higher education, and thus the main question was answered.
- 4- The results of this research agreed with some studies as (Zhao, Chen, Liu, Zhang & Copland, 2019) study to reveal an impact. The use of online AI-based teaching systems, and the results indicated that the use of Internet AI- based teaching systems positively affected the degree of academic achievement of students.

## 9. Recommendations and Suggestions:

### Recommendations

- 1- The practice of the fourth and fifth generation techniques of artificial intelligence and its applications can be used in developing the administrative system in higher education to produce correct decisions that support keeping pace with contemporary and modern education in the era of contemporary technology.
- 2- To highlight that artificial intelligence application is a major form of scientific and technological progress, so it is necessary to take the advantages and avoid its disadvantages.
- 3- To activate the artificial intelligence applications in education, which aim to enhance human capabilities through cooperation between humans and machines in education, learning and work.
- 4- The development of higher education in light of artificial intelligence applications focuses on improving the technical structure to enhance management performance and improve funding and spending opportunities.

### Suggestions:

- 1- Training administrative leaders and designing an electron-learning environment that is motivating through artificial intelligence applications
- 2- Spreading the culture of artificial intelligence among management personnel, developing awareness of its importance in the administrative system, and encouraging researchers and thinkers to do research.
- 3- Organizing continuous meetings with external countries using electronic platforms. And adapting to contemporary updates.
- 4- Providing highly qualified professionals with technical support to address network malfunctions before the application of artificial intelligence.

## 10. Conclusion

In the present, more people are talking about artificial intelligence, so this topic is anxiety-provoking, and its information is renewed in the world every second time, but it is not beneficial unless the foundations and proposed plans are developed that transform the dream into a reality in which it is applied to the development of the high-knowledge in light of the applications of artificial intelligence. So, everyone should

be careful and be careful not to suddenly become in another world, modern word. We must Provide highly qualified professionals with technical support to address their subjects by the application of artificial intelligence to make subjects more attractive and enjoyable exchange in traditional subjects, which is the stagnation in the institutes after that has it in the country

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