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# Challenges of Employing Artificial Intelligence in Libyan Higher Education

**Hasan Abdulsalam Ali Emran[1], Fathia M. Elhony[2]**

[1]Fezzan University
Corresponding Author Email: *has.omran[at]fezzanu.edu.ly*

[2]Fezzan University

**Abstract:** ***This study examines the challenges associated with employing artificial intelligence AI in Libyan higher education. The research identifies significant obstacles, including weak educational policies, inadequate digital infrastructure, and high implementation costs. The study surveyed 314 faculty members from various Libyan universities, revealing that these challenges impede the effective use of AI in education. The findings suggest that addressing these issues is crucial for leveraging AIs potential in improving educational outcomes. The study concluded that the most prominent challenges in employing artificial intelligence in higher education are the high financial costs of implementing AI programs in these institutions The study concludes with recommendations for enhancing digital infrastructure and training human resources to overcome these challenges.***

**Keywords:** intelligence, artificial intelligence, challenges, education, higher education

## 1. Introduction

The use of artificial intelligence (AI) in higher education (HE) has risen quickly, with a concomitant proliferation of new AI tools available. Scholars report on the affordances of AI to both instructors and students in HE. These benefits include the use of AI in HE to adapt instruction to the needs of different types of learners in providing customized prompt feedback, in developing assessments, and predict academic success (Crompton and Burke, 2023). Such a AI could have real impact upon labour markets and thus higher education. Therefore, AI is not just a matter for technological innovation but also represents a fundamental change in the relationship between higher education and broader socioeconomic interests.( Bearman et al , 2023 ) Most reputable high education institutions have understood that AI and ML represent the present and future in both education and the world's progressive development.( Milena Ilić et al, 2021), It is believed that AI implementation can trigger competitive advantage as it enhances productivity through a degree of innovation. Despite the growing popularity of AI, only few studies have analyzed AI in context to PMS. Also, very few studies have tried to show how usage and inhibiting factors enable the implementation of AI for interorganizational competitive advantage and value creation

But, the implementing challenges in context to PMS still need to be examined. (Sharma, et al 2021). However, little attention has been paid to AI-based education from the perspective of teachers. Moreover, teachers' skills in the pedagogical use of AI and the roles of teachers in the development of AI have been somehow ignored. To address these research gaps, this study explores challenges of AI in teaching practice that have been surfaced. As the field of AI based instruction is still developing, this study contributes to the development of comprehensive AI based instructional systems, allowing teachers to participate in the design process.

## 2. Purpose of the Study

As information technology continues to be applied or used, it is bound to have an impact on education in various ways. This study seeks to identify the most important challenges facing the use of artificial intelligence, in its various forms, in higher education. This study will benefit various stakeholders in the higher education sector. It will contribute to the growing study and development of knowledge, theory and findings that identify and discuss the most important challenges facing the application of artificial intelligence in higher education. It will benefit scholars, professionals and policy makers, such as administrators, management and leadership in educational institutions and the education sector, by promoting evidence-based decision-making and management and leadership practices in this sector. The results will also enhance the findings of other studies and provide information to government policies and procedures aimed at promoting the effective use of information technology.

## 3. Importance of the Study

The significance of this study lies in its potential to inform policymakers, educators, and administrators about the critical challenges in adopting AI in higher education, thus guiding future strategies and investments to enhance educational outcomes in Libya.

### Artificial Intelligence in education

AI holds promise as a catalyst to accelerate progress and to leapfrog traditional hurdles such as poor infrastructure and bureaucracy. In nearly every sector—finance, healthcare, law enforcement, transportation, agriculture, environmental conservation—one finds applications in which AI can be effective (Kalyanakrishnan et al, 2018).

Artificial intelligence (AI), generally expressed by the general public as the ability of machines or computers to

think and act as humans do, represents the efforts towards computerized systems to imitate the human mind and actions. In this respect, the basic definition of artificial intelligence can be expressed as the skillful imitation of human behaviour or mind by tools or programs. (Gocen, Aydemirb, 2020).

Artificial Intelligence is said to be "that activity devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment. However, this definition is still ambiguous, as machines develop at an incredibly rapid pace and their current functioning comprises far more than it did a few years ago. Generally, AI is concerned with the development of computers able to engage in human-like thought processes such as learning, reasoning, and self-correction and tries to imitate intelligent behavior by means of computer programs; that is, thinking and acting like humans, as well as thinking and acting rationally. (STANUSCH and AMANN, 2018).

Broadly speaking, there are three reasons why it is so difficult to define AI. Firstly, it is already difficult to define what human intelligence is and, hence, applying this fuzzy concept to machines is a complicated endeavor. Secondly, once we grow used to a machine performing a complex task, we stop considering the ability to do this task a sign of intelligence. This is generally referred to as the AI effect. The AI effect makes the definition of AI a moving target in the sense that AI always seems to be out of reach. Third, AI has different evolutionary stages from narrow to general to super intelligence and can be classified into analytical, human-inspired, and humanized AI depending on its cognitive, emotional, and social competences. (Kaplan and Haenlein , 2020 )

## 4. Discussion

The use of artificial intelligence in education and learning is of great importance, as it provides the teaching and learning method with new techniques and procedures. The study concluded that there are many challenges facing the employment of artificial intelligence applications in higher education institutions. This is what a number of studies have concluded (Matjaž et al, 2018) in the presence of social and legal challenges. The results of the study also agreed with the study (David J. Gunkel, 2012), which showed that the digital infrastructure poses a major challenge in artificial intelligence applications. The results of the study also agreed with the study (Celik, 2022) in that human challenges remain an existing challenge to the employment of artificial intelligence. Therefore, attention must be paid to training human resources on these modern technologies. Here, the challenges facing the employment of artificial intelligence remain present in all organizations, and successful management can overcome them through good planning and preparation. The results of the study also agreed with the study (Emran, Elhony, 2023) application of digitization in organizations requires attention to refining the skills of human resources and increasing their knowledge to achieve organizational goals efficiently.

## 5. Conclusions

The implementation and adoption of artificial intelligence is inevitable in the education sector. Artificial intelligence technologies are not limited to smart learning, teaching systems, and social robots; there are many other smart technologies, such as virtual facilitators, online learning environments, learning management systems, and learning analytics, which also contribute significantly to this sector . Artificial intelligence is an inevitable strategic technology that works to obtain greater efficiency, new revenue opportunities, and enhance customer loyalty. It is also rapidly becoming a competitive advantage for many organizations. With artificial intelligence, organizations can accomplish more tasks in less time, create personalized and engaging customer experiences, and predict business outcomes to increase profitability. But artificial intelligence is still a new and complex technology. To get the most out of it, you need expertise in how to create and manage artificial intelligence solutions at scale. An artificial intelligence project requires more than just hiring a data scientist. Organizations must implement tools, processes, and management strategies to ensure the success of artificial intelligence technology.

## 6. Recommendations and Suggestions

The researchers recommend taking the following steps:

1) Raising awareness of the importance of applying artificial intelligence.
2) Paying attention to the challenges facing the employment of artificial intelligence.
3) Conducting many studies regarding artificial intelligence applications.

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