Passerelle PP. 337-358
Vol. 14 No. 01 ISSN : 1112-6337 EISSN : 2716-8328

The Preparedness of Algerian University for Integrating Artificial Intelligence into the Educational Process: A Case Study of the University Center of Maghnia.

La préparation de l'université algérienne à l'intégration de l'intelligence artificielle dans le processus éducatif : étude de cas du Centre Universitaire de Maghnia.

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Received: 7/4/2025, **Accepted:** 4/10/2025, **Published:** 12/12/2025

Abstract:

This study focuses on evaluating the readiness of the University Center of Maghnia to integrate artificial intelligence technologies into the educational process, as perceived by its faculty members. To achieve this objective, it relies on a descriptive-analytical approach, given its relevance to both qualitative and quantitative dimensions of the research. The study also draws on previous literature and adopts a case study method, analyzing data collected through a questionnaire distributed to faculty members at the University Center of Maghnia. The findings reveal that the center demonstrates a moderate level of readiness to adopt artificial intelligence technologies in its educational activities, while several challenges and obstacles continue to hinder their full implementation.

Keywords: Artificial Intelligence; Educational Process; Faculty Members; Readiness Level; University Institutions.

Résumé :

Cette étude vise à évaluer le degré de préparation du Centre Universitaire de Maghnia à intégrer les technologies de l'intelligence artificielle dans le processus éducatif, tel que perçu par ses enseignants-chercheurs. Pour atteindre cet objectif, elle s'appuie sur une approche descriptive et analytique, pertinente pour traiter à la fois les dimensions qualitatives et quantitatives de la recherche. L'étude mobilise une revue de la littérature antérieure ainsi que la méthode de l'étude de cas, en

analysant les données recueillies à l'aide d'un questionnaire distribué aux enseignants du Centre Universitaire de Maghnia. Les résultats montrent que le centre présente un niveau de préparation modéré pour l'adoption des technologies de l'intelligence artificielle dans ses activités pédagogiques, tandis que plusieurs défis et obstacles continuent de freiner leur mise en œuvre complète.
Mots-clés : Intelligence artificielle ; Processus éducatif ; Enseignants-chercheurs ; Niveau de préparation ; Institutions universitaires.

Introduction

The rapid and accelerating integration of artificial intelligence (AI) applications in education has garnered significant attention, as the future of education is closely tied to advancements in emerging smart technologies. The educational community faces the challenge of continuous development in these technologies, which are expected to introduce creativity and flexibility into the educational system.

All types of artificial intelligence (AI), such as machine learning, generative AI, and computer vision are quickly becoming prevalent in all areas of higher education today. They are being used to help improve teaching and learning, create enhanced educational experiences, streamline processes, and accelerate academic research. Determining the right technology needed to support these new and exciting AI-based projects across campus can be challenging for IT teams.

In Algeria, the current state of AI is marked by strong commitment from government bodies and academic institutions. This commitment is evident in the integration of AI technologies within their activities, supported by initiatives from the Ministry of Higher Education and Scientific Research. These initiatives include establishing a scientific council dedicated to AI, which serves as an advisory body proposing strategies for AI development, and creating specialized institutions such as the National School of Artificial Intelligence. Additionally, the increase in AI-focused research labs within universities and research centers reflects Algeria's recognition of AI's strategic importance in enhancing the quality of higher education and scientific research.

For this progress to materialize, university institutions must be prepared to adapt to and adopt AI technologies within their educational activities. Based on this premise, the current study seeks to address the readiness of Algerian university institutions through a case study of the University Center of Maghnia. The central research question is posed as follows: Is the University Center of Maghnia prepared to integrate artificial intelligence technologies into its educational process?

The main question is followed by a set of sub-questions as follows:

• Does the educational system at the University Center of Maghnia align with AI technologies?

• Do the individual and technological resources at the University Center of Maghnia enable the adoption of AI technologies in educational activities?

• Are there challenges limiting the adoption of AI technologies at the University Center of Maghnia?

The study hypothesizes a main assumption that the University Center of Maghnia is fully prepared and highly ready to adopt artificial intelligence technologies in its educational process.

The research paper aims to assess the actual readiness of the University Center of Maghnia to integrate AI technologies into its educational system as a tool for enhancing the quality of higher education. It highlight the key requirements for adopting AI and identify potential challenges that might hinder this process. The study derives its significance from both the academic and practical relevance of the topic, as well as the benefits that smart education can offer to the national university system

Literature Review

The current study is based on previous scientific background, from which we summarize the following:

Valentin Kuleto (2021) explored in his research paper the opportunities and challenges of AI in higher education, focusing on the potential applications of AI in enhancing student skills, fostering collaborative learning, and providing high-quality research environments. Conducted through a literature review and a survey of 103 university students in Serbia, the study employed descriptive and inferential statistical analysis. The results emphasized the role of AI and machine learning as core technologies improving educational outcomes. (Kuleto & Milena , 2021) Meanwhile, Rocsana Bucea-Manea-Tonis (2022) explored the integration of AI technologies in higher education systems, focusing on their adoption by faculty members. The study was conducted through a case study involving 139 professors from the IT Faculty in Belgrade and Spiru Haret University in Romania. It identified the opportunities and challenges related to AI adoption and emphasized the need for creative and flexible skills to adapt to future educational changes. (Rocsana Bucea & Simona , 2022) Within the same context adopted by Valentin Kuleto (2021) in his study, Nayef Shaie Alotaibi (2023) analyzed the successes and obstacles related to AI-based learning outcomes in higher education institutions in Saudi Arabia. Using descriptive analysis, the study revealed that AI is still in its early stages and emphasized the necessity for students to acquire technical skills to interact with AI. The findings also highlighted the transformative potential of AI in teaching and learning methodologies and the

importance of equipping faculty members with technological competencies for effective AI utilization. (Nayef Shaie & Awad Hajran , 2023)

On the other hand, Zouhaier Slimi (2023) addressed the impact of artificial intelligence on higher education in an empirical study, where he analyzed the effect of applying AI technologies in higher education institutions, including its impact on teaching and learning, assessment, required skills, and future careers. The study employs a qualitative methodology based on a survey of the higher education audience.

The results showed that AI plays a crucial role in the future of higher education, as it helps equip graduates with new skills and improves the effectiveness of education by personalizing teaching methods and providing rapid feedback. The study also emphasized the importance of considering the ethical implications of AI. The main recommendation is the need to integrate AI more extensively into curricula to prepare graduates for the future workforce, while also considering the ethical dimensions when developing and implementing educational programs. (Slimi, 2023, p. 17)

In 2024, Khurram Shahzad and others presented a research paper titled "Identifying University Librarians' Readiness to Adopt Artificial Intelligence (AI) for Innovative Learning Experiences and Smart Library Services: An Empirical Investigation." This study aimed to assess university librarians' readiness to adopt AI to provide innovative learning experiences and smart library services. A quantitative research design followed by a survey method was used, with data collected from 174 professional librarians from 58 university libraries in Punjab province, Pakistan. The study's findings revealed that adopting AI enhances innovative learning. The results also showed that AI adoption helps librarians provide smart library services to end-users. Based on these findings, the study offered practical recommendations based on evidence to ensure effective adoption and sustainability of AI applications in university libraries.

This study contributes to expanding the current knowledge base by providing valuable theoretical and managerial insights with societal impact. It also presented a practical framework based on empirical findings for effectively adopting AI tools in academic settings, contributing to improving learning experiences and providing sustainable smart library services. (Khurram & Shakeel , 2024)

This study aligns with previous research by focusing on university faculty members and exploring the feasibility of adopting artificial intelligence (AI) in educational processes. In other words, it shares a similar interest with other studies in examining how AI can be integrated into education.

What makes this study unique is that it adopts a quantitative approach (relying on the collection and analysis of numerical data rather than merely

descriptive or qualitative analysis) to assess universities' readiness to adopt AI. The study covers several essential dimensions:

- Compatibility: The extent to which AI aligns with the current educational system.
- Feasibility: The practical ability to implement AI technologies in educational institutions.
- Technological and individual readiness: Assessing the readiness of technological infrastructure and individuals' ability to handle AI.
- Challenges: Identifying obstacles and difficulties that may hinder the integration of AI into the educational system.

1. Theoretical background

This section aims to review the theoretical framework related to the research topic by addressing the role of artificial intelligence as a strategic tool for the development of educational and professional domains. It also highlights the main advantages it provides in supporting educational and research processes as well as enhancing institutional efficiency, in addition to the challenges that hinder its optimal adoption. Finally, the section discusses the readiness of individuals and institutions to embrace this technology, considering it a key requirement for ensuring successful integration and maximizing its benefits.

1.1. The most prominent artificial intelligence systems in higher education

In the highly competitive higher education market, universities must provide an exceptional student experience. According to the *Nous Group* report on student experience, university leaders view technology, including AI tools, as a fundamental element in achieving and transforming ambitions for enhancing the student experience into tangible outcomes. AI systems can enrich the student experience in three primary ways (Darren & Julie , 2024, p. 01)

AI contributes to higher education in several ways. First, it enables personalization by facilitating a tailored approach to student engagement. Through adaptive educational content, it addresses different learning styles, identifies early warning signs when a student requires additional support, and even recommends extracurricular activities aligned with the student’s interests. In addition, AI enhances time efficiency by automating time-consuming routine tasks, which allows both academic and administrative staff to dedicate more attention to higher-value activities. Finally, it improves accessibility by reducing costs and

providing educational solutions adapted to diverse local contexts, thereby enabling universities to reach non-traditional students and expand into emerging markets. (Darren & Julie , 2024, p. 01)

In the same context, artificial intelligence significantly reshapes higher education across several domains .It optimizes attraction and admission by improving targeting strategies, expediting application processes, and reducing dropout rates. It also personalizes guidance and integration through immersive VR and AR technologies. In teaching and research, AI advances adaptive learning platforms and supports academics with predictive analytics. Furthermore, it expands student support by providing career, financial, and health counseling, while also addressing the needs of non-traditional learners. Finally, AI strengthens belonging and engagement by enhancing student–alumni interactions, particularly within virtual environments. (Darren & Julie, 2024, p. 02).

1.2. Benefits of AI in Higher Education

Artificial intelligence has become one of the most significant technological transformations of the modern era, extending its impact to higher education by offering opportunities to rethink teaching methods and research practices. This is what we highlight in the following discussion of its benefits in this sector.

- **Personalized Learning:** AI-driven platforms enable personalized educational experiences by analyzing individual student data, including learning preferences and challenges. This customization helps optimize engagement and comprehension, leading to improved retention rates (Shuaib , 2024, p. 01).
- **Administrative Efficiency:** AI automates various administrative tasks, reducing workloads for faculty and staff. This includes functions such as grading, scheduling, and managing student records, allowing educators to focus more on teaching and mentoring students. (Abdulrahman & Talal , 2024, p. 03) For instance, predictive analytics systems can identify at-risk students early by monitoring multiple risk factors, enabling timely interventions. (Shuaib , 2024, p. 02)
- **Enhanced Student Support:** Institutions like Deakin University have implemented AI-powered digital assistants that offer 24/7 support to students. These tools provide personalized advice on course selection and study habits, significantly enhancing student satisfaction and engagement. (Jenay , 2024)
- **Research and Innovation:** AI facilitates advanced research capabilities by enabling data analysis and pattern recognition at unprecedented speeds. This capability supports both faculty research initiatives and student projects, fostering an environment of innovation. (Jack, 2024)

1.3. Ethical Issues and Practical Challenges in AI Adoption

The ethical dimension represents a fundamental aspect in dealing with modern technologies, particularly artificial intelligence, which raises numerous questions regarding data use, privacy protection, and ensuring fairness and transparency. At the same time, individuals and institutions face several challenges in putting these ethical considerations into practice, making the topic a subject of extensive debate in both academic and professional circles. This will be clarified in the following.

1.3.1. Data Privacy and Security: The use of AI in higher education raises significant concerns about data privacy and security. (Ronal & Lestari, 2024, p. 87) The collection and use of student data must be transparent and comply with relevant regulations. (Nimbalagundi, Bagawan, & Katageri , 2024, p. 2792) Students have a right to know what data is being collected about them, how it is being used, and who has access to it. Institutions must establish robust data governance policies, (Sharon , 2024, p. 13) and invest in secure data infrastructure to mitigate the risks associated with data breaches. This includes implementing strong security measures to protect student data from unauthorized access and misuse. It also involves developing clear policies that govern the collection, use, and storage of student data. The ethical implications of data collection and use must be carefully considered, ensuring that student privacy is protected and that data is used responsibly. Transparency and accountability are essential to build trust with students and ensure that data is used ethically. (Patel & Ragolane, 2024, p. 55)

1.3.2. Algorithmic Bias and Fairness: AI algorithms can inherit and amplify existing biases present in the data they are trained on, leading to unfair or discriminatory outcomes. This is particularly concerning in areas such as admissions, grading, and student support services. For example, an AI algorithm used for admissions might inadvertently discriminate against students from certain demographic groups if the training data reflects existing biases in the admissions process. Similarly, an AI algorithm used for grading might unfairly penalize students from certain backgrounds if the training data reflects biases in the grading process. Institutions must take steps to mitigate algorithmic bias. (Slimi & Villarejo Carballido, 2023, p. 591)

1.3.3. Academic Integrity and Plagiarism: The increasing availability of AI-powered writing tools. (Porter & Fitzgerald, 2025, p. 05) raises concerns about

academic integrity and plagiarism. Students might use these tools to generate essays, research papers, or other assignments without proper attribution, compromising the principles of academic honesty. Institutions must develop clear policies and guidelines. (Zhou & Joanne , 2024, p. 03) on the acceptable use of AI tools in academic work. These policies should clearly define what constitutes plagiarism in the context of AI-generated content and outline the consequences of violating these policies. Students should be educated on the ethical implications of using AI tools and provided with guidance on how to use these tools responsibly. Furthermore, institutions may need to adapt assessment strategies, (Batista, 2024, p. 02) to better assess student learning in an AI-rich environment. This might involve shifting the focus from rote memorization to higher-order thinking skills, such as critical analysis, problem-solving, and creative thinking. It also requires developing new assessment methods that are resistant to AI-generated content.

1.4. AI Literacy and Workforce Readiness

AI literacy has become one of the essential skills in the digital era. It is no longer limited to technology specialists but has become a necessary requirement for individuals and institutions across various fields. Familiarity with AI contributes to improving workforce efficiency and enhancing adaptability to rapid changes in the labor market, making workforce and institutional readiness a critical factor for leveraging this technological revolution. This will be clarified in the following.

1.4.1 Developing AI Literacy: The successful integration of AI in higher education requires developing AI literacy (Daiga, Dita , & S. Baranova, 2024) among both students and faculty. AI literacy encompasses understanding the capabilities and limitations of AI, the ethical implications of its use, and the potential impacts on various aspects of life. Institutions must incorporate AI literacy into their curricula, providing students with the skills and knowledge to effectively use AI tools and navigate the challenges of an AI-driven world. This includes developing critical thinking skills to evaluate the output of AI systems and understand their potential biases. It also involves understanding the ethical implications of AI and developing responsible AI usage practices. Furthermore, faculty need to be equipped with the skills and knowledge to effectively integrate AI into their teaching practices. This requires professional development opportunities and access to resources that support the effective use of AI in education. AI literacy is not just about technical skills; it also involves understanding the broader societal implications of AI and developing the capacity to engage in informed discussions about its use. (Jan, Joana, & Sabine , 2024, p. 02)

1.4.2 Preparing Students for Future Jobs: AI is rapidly transforming the job market, and higher education institutions have a responsibility to prepare students for the demands of an AI-driven workforce. (Gulyamov & Eyton , 2024, p. 03) This requires not only developing AI literacy but also fostering critical thinking, creativity, and problem-solving skills, (Kalniņa , Nimante, & Sanita, 2024, p. 04) skills that are not easily replicated by AI. Institutions must also ensure that their curricula remain relevant and adaptable to the changing needs of the job market, incorporating AI-related skills and knowledge into various disciplines. This involves updating curricula to reflect the latest advancements in AI and incorporating AI-related skills into various courses. It also requires developing new courses and programs that focus specifically on AI-related topics. Furthermore, institutions need to develop partnerships with industry to ensure that their curricula meet the needs of employers. This could involve internships, apprenticeships, and collaborative research projects. Preparing students for the future workforce requires a holistic approach, encompassing AI literacy, critical thinking skills, and industry partnerships.

2. Methodology

Based on the nature of the topic, we employed the descriptive approach, which involves studying the phenomenon as it exists in reality, providing an accurate description. This approach incorporates both qualitative methods, through reviewing previous studies, and quantitative methods, using descriptive statistics.

For the case study, we utilized a well-structured questionnaire validated by specialized entities. The data was analyzed using the Statistical Package for the Social Sciences (SPSS), a software specifically designed for quantitative data analysis.

The study's scope was geographically limited to the University Center of Maghnia in the Tlemcen Province (Algeria). Temporally, the research was conducted between June 1, 2024, and July 25, 2024, accounting for the distribution, retrieval, and analysis of the questionnaires. Thematically, the study focused on a population consisting of the professors of the University Center of Maghnia. Out of 102 electronically distributed questionnaires, 60 were retrieved and analyzed, representing an acceptable response rate of approximately 60%.

The data obtained from the questionnaire were transcribed and analyzed using descriptive statistical methods to measure and determine the following:

1. **Reliability of the study tool.**
2. **Frequencies and percentages** to analyze the responses of the study sample.
3. **Mean (average):** To determine the direction of agreement among the sample members for each statement of the questionnaire.
4. **Standard deviation:** To understand the degree of variation, concentration, and dispersion of the study participants' responses.

3. Results

To address the research problem and validate the hypothesis, opinions were gathered from professors at the University Center of Maghnia through a questionnaire divided into five sections related to the requirements for adopting artificial intelligence. These sections included: **compatibility index, trialability, technological readiness, individual readiness, and adoption difficulties**.

The study utilized the **three-point Likert scale** to measure the responses of the participants. This scale indicates the positive or negative inclination of the respondents toward each statement within the second axis of the questionnaire, using a three-point system as outlined in Table (1):

Table 1: Three-Point Likert Scale

Degree	Agreement Level
3	Agree
2	Neutral
1	Disagree

This scale is used to measure the direction of responses for each statement in the questionnaire, where 3 indicates agreement, 2 indicates neutrality, and 1 indicates disagreement.

3.1. Reliability of the Study Tool:

The reliability of the questionnaire is measured to ensure that the answers would not significantly change if the questionnaire were applied again to the same individuals. To do this, the Cronbach's alpha reliability coefficient is calculated for the sample obtained (60 individuals) to determine the reliability of the results.

Table 2: Reliability Coefficient of the Study Questionnaire

Questionnaire Section	Reliability Coefficient (%)
Compatibility Index	70.4
Trialability	70.0
Technological Readiness	80.6
Individual Readiness	74.7
Adoption Difficulties	69.8
All Sections	73.1

Source : SPSS 23 outputs

The overall reliability and consistency score, according to this measure, is **73.1%**, which is considered appropriate for the results of this study, given that the reliability of each section of the questionnaire exceeds the general acceptance threshold (60%). This indicates that most of the responses were accurate and objective.

3.2. Analysis of the Responses of the Study Sample:

The goal of this section is to identify the level of readiness and adoption of artificial intelligence in educational applications at the University Center of Maghnia. To achieve this, we analyze the responses of the sample members to the statements in the questionnaire using measures of central tendency (mean) and measures of dispersion (standard deviation) for each section individually.

Table 3: Individuals' Responses Regarding the Compatibility Index Axis

Statements	Scale	Degree of Agreement			M	SD
		DI	N	A		
he current educational system is compatible with AI technology.	F	31	17	12	1.683	0.791
	%	51.7	28.3	20.0		

Learning methods and teaching styles are compatible with AI technology.	F	37	12	11	1.566	0.789
	%	61.7	20.0	8.3		
Using AI in education contradicts current educational models.	F	24	14	22	1.966	0.882
	%	40.4	23.3	36.7		
AI provides more educational job opportunities.	F	13	20	37	2.400	0.827
	%	21.7	16.7	61.7		

For the majority of the study sample at the Maghnia University Center, the current educational system, including teaching methods and learning styles, does not align with advanced AI technologies. However, the use of AI does not conflict with existing education models, and it provides more educational job opportunities according to high agreement ratings. The high standard deviation rates indicate variability in individual responses, which can be attributed to the limited technical capabilities that hinder the compatibility between AI requirements in academic institutions and the current educational system.

Table 4: Responses of Individuals on the Feasibility of Experimentation

Statements	**Scale**	**Degree of Agreement**			**M**	**SD**
		DI	**N**	**A**		
your university supports the use of AI technologies in distance education	F	10	14	36	2.433	0.767
	%	16.7	23.3	60.0		
Educational applications are possible thanks to AI technology	F	12	8	40	2.466	0.812
	%	20.	13.	66.		

		0	3	7		
Educational activities can be evaluated with the help of AI technology	F	12	8	40	2.466	0.812
	%	20.0	13.3	66.7		
Using AI technologies in e-learning applications increases the demand for distance.	F	11	08	41	2.500	0.791
	%	18.3	13.3	68.3		

According to the results in the table above, the responses of the study participants lean toward a positive direction, with a generally favorable stance on the university's readiness to experiment with AI technologies in education. This includes the possibility of evaluating educational activities and increasing the demand for e-learning or distance education based on the requirements of digital education programs in higher education.

Table 5: Individuals' Responses Regarding the Experimentation Readiness Index

Statements	Scale	Degree of Agreement			M	SD
		DI	N	A		
Your university supports the use of AI technologies in distance education	F	17	15	28	2.183	0.853
	%	28.3	25.0	46.7		
Educational applications are possible thanks to AI technology.	F	10	14	36	2.433	0.767
	%	16.7	23.3	60.0		
Educational activities can be evaluated with the help of AI technology.	F	12	8	40	2.466	0.812
	%	20.0	13.3	66.7		
Using AI technologies in e-learning applications increases the demand for distance education.	F	11	8	41	2.500	0.791
	%	18.3	13.3	68.3		

Based on the results from the table above, the responses from the sample lean towards agreement with similar mean values, regarding the readiness of the university center to experiment with AI technologies in the educational process. This includes the possibility of evaluating educational activities and increasing interest in e-learning or distance education, as it meets the requirements of digital programs for higher education

Table 6: Responses of Individuals Regarding the Technological Readiness Dimension

Statements	Scale	Degree of Agreement			M	SD
		DI	N	A		
The current university infrastructure is suitable for implementing e-learning.	F	39	15	6	1.450	0.674
	%	65.0	25.0	10.0		
The university's electronic operating systems align with artificial intelligence technologies	F	39	18	03	1.400	0.588
	%	65.0	30.0	5.0		
The institution has security and prevention systems in place, along with encryption protocols.	F	36	18	6	1.500	0.675
	%	60.0	30.0	10.0		
Flexibility of the institution's systems and resources with the new technological orientation.	F	26	23	11	1.750	0.750
	%	43.3	38.3	18.3		

The responses predominantly indicate disagreement regarding the technological readiness of the studied university institution. This is linked to the inadequacy of the existing infrastructure for artificial intelligence technologies, as well as limitations in the operating systems, security measures, and prevention protocols. Furthermore, the rigidity of the technological systems used adds to the lack of readiness to adapt to modern technological trends.

Table 7: Individuals' Responses Regarding Individual Readiness

Statements	Scale	Degree of Agreement			M	SD
		DI	N	A		

You are familiar with AI applications in e-learning.	**F**	14	18	28	2.230	0.810
	%	23.3	30.0	46.7		
You have prior experience with AI applications in distance education	**F**	28	10	21	1.900	0.915
	%	46.7	16.7	36.7		
You encourage partial replacement of teaching staff with AI applications.	**F**	33	9	18	1.750	0.894
	%	55.0	15.0	30.0		
You support the integration of intelligent applications into the process of evaluation and academic supervision of students.	**F**	17	7	36	2.316	0.892
	%	28.3	11.7	60.0		

The above results indicate that approximately 47% of the sample are familiar with AI applications in e-learning. However, the same percentage has no prior experience using AI applications in distance education. Additionally, a higher percentage (60%) of participants support the idea of integrating intelligent applications into the evaluation and academic supervision of students. On the other hand, the majority of surveyed instructors (55%) do not support the partial replacement of teaching staff with AI applications, as they consider AI a complement to the educational process rather than a substitute for human learning.

Table 8: Individuals' Responses Regarding Adoption Challenges

Statements	**Scale**	**Degree of Agreement**			**M**	**SD**
		DI	**N**	**A**		
The cost of implementing AI applications is extremely high.	**F**	7	15	38	2.561	0.700

	%	11.7	25.0	63.3		
Faculty's technological background is a barrier to using AI applications in distance education.	**F**	5	6	49	2.733	0.606
	%	8.3	10.0	81.7		
Students' technological background is a barrier to using AI applications in distance education**.**	**F**	6	5	49	2.716	0.640
	%	10.0	8.3	81.7		
The limited number of skilled programmers and technicians capable of developing AI programs at the university.	**F**	3	8	49	2.766	0.532
	%	5.0	13.3	81.7		

All participants' responses strongly lean towards agreement, indicating the presence of significant challenges that hinder the adoption of AI at the studied university. These challenges primarily include a lack of adequate academic and practical readiness and the high financial costs associated with implementing AI technologies in the educational process.

3.3. Hypothesis Testing

The study hypothesis requires the measurement of readiness levels (low, medium, high) across each dimension or axis of the questionnaire. This procedure serves to determine the overall level of readiness for integrating artificial intelligence (AI) into education at the studied university. The total score for each axis is calculated, and each score is classified into its corresponding category.

Table 9 : Overall Means

Axes	Alignment Index	Trialability	Technological Readiness	Individual Readiness	Adoption Challenges
Overall Mean	7.615	9.582	6.10	8.196	10.776

Source: Based on SPSSv23 outputs.

3.4. Category Ranges

The next step involves determining the category ranges for each axis, based on the number of items and the Likert scale used in this study. This classification enables the assessment of readiness levels for integrating AI into the educational process.

Table 10 : Category Ranges

Category Range	Level
[4–6]	Low
[7–9]	Medium
[10–12]	High

Source: Prepared by the author.

Based on the above, we use the overall means obtained to determine their placement within the category ranges shown above. The results are as follows:

Table 11 : Levels of Questionnaire Variables

Variable	Mean	Category Range	Level
Compatibility Index	7.615	[7-9]	Medium
Experimentation Feasibility	10.00	[10-12]	High
Technological Readiness	6.10	[4-6]	Low
Individual Readiness	8.196	[7-9]	Medium
Adoption Barriers	10.776	[10-12]	High
Overall Average	8.537	[7-9]	Medium

Source: Prepared by the author.

Based on the results presented in the table above, the higher education system at the University Center of Maghnia demonstrates only a moderate level of compatibility with artificial intelligence (AI) technologies. While the participants indicate a medium degree of readiness to engage with AIsupported by the presence of favorable conditions for implementation this level of preparedness remains insufficient to meet the demands of a rapidly evolving digital landscape. The findings further highlight that structural and technological barriers, particularly the institution's relatively low level of technological readiness, pose significant obstacles to effective adoption. This suggests that although there is potential for integrating AI into teaching and learning practices, such as

personalized content delivery, automated assessment, and student supervision, the institution is at risk of falling behind unless strategic interventions are introduced. Consequently, the moderate readiness identified should not be viewed as a stable position but rather as a transitional stage that requires targeted investments in infrastructure, training, and change management to ensure sustainable progress.

4. Discussion

The results show that the current educational system at the Maghnia University Center is partially compatible with artificial intelligence (AI) technology, with an average compatibility score of 7.615, classified as medium. Despite some alignment between current teaching methods and AI technologies, there is a clear need to enhance this compatibility by developing teaching approaches that integrate seamlessly with modern technologies. The axis of experimentation feasibility records a high level (10.00), indicating that participants perceive significant potential for experimenting with AI technologies in education. This readiness is evident in the university's support for distance learning and the evaluation of educational activities using AI. However, achieving these aspirations requires improvements in the infrastructure to align with these goals. Technological readiness emerges as one of the most significant challenges, with a low score of 6.10. The responses highlight inadequacies in technological infrastructure, including operational systems, security measures, and system flexibility to adapt to new technological trends. This underscores the primary challenge of modernizing infrastructure, which requires substantial investments to improve technological readiness. The results also indicate that participants demonstrate a medium level (8.196) of individual readiness. While there is awareness and knowledge of AI applications, practical experience remains limited. Notably, most participants support integrating intelligent applications into academic supervision and student evaluation, although they oppose the partial replacement of teaching staff. The challenges and barriers axis record a high level (10.776), reflecting significant obstacles to adopting AI technologies. The primary challenges include the high cost of implementation, weak technological backgrounds among faculty and students, and a shortage of specialized technical expertise. Overall, the institution's readiness to adopt AI technologies in education is classified as medium (8.537). While this medium-level readiness represents a positive indicator, it also highlights the need for tangible improvements in infrastructure, training, and resource allocation to support this transition effectively.

5. Conclusion

The integration of artificial intelligence (AI) into the educational system represents a transformative tool for enhancing and complementing learning processes. AI plays a pivotal role in elevating the quality and standards of higher education while enriching educational experiences. By enabling personalized

learning pathways, AI caters to individual capabilities and needs. Moreover, instructors leverage expert systems to assist with tasks such as analyzing and classifying student progress, allowing them to focus on more interactive and impactful aspects of teaching. Additionally, AI-powered data analysis helps identify and address gaps in the educational system, including the integration of relevant modern skills into curricula. However, realizing these benefits requires essential prerequisites, such as the compatibility of the educational system with AI technologies, technological readiness, and addressing barriers to adoption through strategic solutions.

With the rapid advancements in artificial intelligence, higher education institutions embrace these technologies to enhance the student experience and improve the quality of education. AI systems play a crucial role in personalizing learning, increasing administrative efficiency, and expanding access to education, thereby creating a more adaptable academic environment. However, these benefits come with ethical and technical challenges that require clear policies to ensure responsible data usage, mitigate algorithmic biases, and uphold academic integrity.

Moreover, universities prepare students for the future job market by fostering critical thinking and creativity while developing flexible curricula that integrate AI-related concepts across various disciplines. Collaboration between academic institutions and industry is essential to align acquired skills with evolving labor market demands. Ultimately, AI presents a unique opportunity to reshape higher education, but its success depends on adopting comprehensive strategies that balance technological advancements with academic and humanistic values.

A study conducted at the University Center of Maghnia reveals a moderate level of readiness, contradicting the hypothesis of full preparedness for AI integration. The results show an acceptable, albeit insufficient, level of compatibility between educational programs and smart learning technologies, highlighting the need for greater efforts to enhance this alignment. This finding resonates with the Algerian Ministry of Higher Education's commitment to advancing national university institutions through development projects.

The study also shows a strong willingness among individuals to adopt AI in education, particularly in utilizing AI tools for distance learning, which sees increasing demand. Faculty members display a reasonable level of individual

readiness, supported by their growing understanding of AI applications in e-learning and their endorsement of AI integration in academic assessments and student supervision. However, individual readiness is hindered by low technological preparedness, stemming from inadequate infrastructure, outdated operating systems, weak security measures, and limited compatibility with AI systems.

Other challenges include the high costs of implementing AI technologies, the low level of technological expertise among faculty and students, and the shortage of qualified programmers and technicians to develop AI tools within the university.

While Algerian universities make notable strides to improve their readiness for AI integration, their efforts remain constrained by technological and cognitive limitations. To address these challenges, the following recommendations are proposed:

- Transform educational practices to align with modern requirements.
- Develop and maintain digital and intelligent systems, ensuring continuous technical and operational support for optimal resource utilization.
- Provide practical training and capacity-building programs for all stakeholders.
- Adopt AI as a complementary tool to traditional teaching methods, fostering innovation rather than resistance.
- Conduct ongoing evaluations and monitoring to identify and address challenges, enabling the development of effective strategic solutions.

By implementing these measures, universities improve their readiness and fully harness the potential of AI to revolutionize education.

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