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L'intelligence artificielle et la performance éducative : Étude à l'Université d'Alger2?

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Introduction

Today, we witness astonishing technological advancements across various fields, collectively known as the "smart revolution." This term refers to the radical transformation in the use of technology and data to achieve development and improvements in numerous aspects, whether economic, social, or environmental.

The smart revolution is an exceptional development that significantly impacts people's lives, opening new horizons for innovation and progress in various fields, thereby enhancing sustainability, efficiency, and well-being for communities in the modern era (Russell & Norvig, 2016, p. 35).

Artificial intelligence (AI) is a branch of computer science and information technology focused on creating systems and programs that exhibit intelligence similar to human intelligence (Popenici, 2017, pp. 12-22). This is achieved through complex algorithms and mathematical models, as well as advanced techniques such as machine learning and artificial neural networks. AI is used to represent and model human cognitive and mental capabilities in machines (Ammar & Haris, 2006), enabling them to perform tasks that require thinking, analysis, and decision-making. The applications of AI span various fields such as education, medicine, finance, marketing, robotics, and others. Du Boulay (2016) notes that some intelligent teaching systems have demonstrated significant effectiveness compared to traditional classroom teaching. This effectiveness may be attributed more to the novelty of many AI tools than to their intrinsic value.

AI in education refers to the use of technology and intelligent systems to enhance learning and teaching processes. Its aim is to develop tools and techniques that assist in customizing and improving the learning experience for each individual based on their needs and learning styles. The significance of AI is evident in the personalization of education, providing tailored learning experiences for each student based on their

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level and needs to improve learning effectiveness. It also helps teachers and educators understand student performance, effectively identify strengths and weaknesses, and provide immediate feedback that enhances engagement and participation. This contributes to a richer learning experience through diverse educational materials on interactive e-learning platforms, motivating students and making learning more enjoyable and effective (Mustafa, 2016).

China, the United Arab Emirates, and the United States are among the first countries to adopt AI in educational processes, and they are considered pioneers in applying AI in this field. Their use of smart technologies has surpassed traditional limits of effectiveness and productivity, significantly contributing to the improvement of educational processes and enhancing the learning experience for both students and teachers (Moqatel & Hosni, 2021).

These countries address the integration of AI in education through independent, integrated, or thematic curricula. In 2017, China launched the New Generation Artificial Intelligence Development Plan, which includes the concept of 'smart education'. The plan specifically involves using AI to (1) develop a new educational system involving the reform of educational practices and offering interactive and intelligent learning ; (2) implement smart campus constructions and enhance AI in teaching, administration, and resource building ; (3) develop a comprehensive three-dimensional teaching methodology and an intelligent online educational platform based on big data ; (4) create AI assistants and establish a comprehensive educational analysis system ; and (5) create a learner-centered educational environment to achieve personalized education for each learner. As for the United Arab Emirates, in 2017, it launched the UAE Artificial Intelligence Strategy, targeting nine key sectors, including education. The strategy emphasizes AI's ability to reduce costs and enhance learning (UNESCO, 2021).

In conclusion, the use of AI in these countries has shown tangible results in enhancing the quality of education, improving student understanding and interaction, and boosting the performance of teachers and schools overall. This makes it an example of progress and innovation in the field of education through advanced technologies such as artificial intelligence.

1. Framework and Scope of the Study

1.1. Study Problem

Technology and artificial intelligence are among the most significant developments witnessed across various fields over the past few decades. They have had a substantial impact on different aspects of our lives, including education. With the rapid and ongoing advancements in technology, the

educational sector is increasingly integrating modern technologies and artificial intelligence to enhance educational performance and achieve better student outcomes. These advancements benefit several areas, such as educational management, teacher support, evaluation of teaching and learning processes, fostering essential skills for life and work in the era of artificial intelligence, and providing equitable learning opportunities for all.

Algeria is one of the countries experiencing growing applications of technology and artificial intelligence in the educational field. However, this development raises numerous questions and challenges that must be addressed seriously and effectively. Based on previous studies related to this topic, there is a notable diversity between Arab and foreign studies that have explored artificial intelligence and its importance in providing high-quality curricula and educational strategies to enhance thinking skills, potentially improving student performance. For instance, Ammar (2006) examined the effectiveness of using self-directed learning based on computer expert systems in teaching geography, focusing on cognitive achievement, the development of critical thinking skills, and the promotion of economic values among first-year secondary students. The results showed statistically significant differences at the 0.05 level between the mean scores of students in the pre-test and post-test, favoring the post-test in terms of cognitive achievement and critical thinking skills (Ammar & Haris, 2006).

Kamel (2010) aimed to verify the development of cognitive achievement levels in designing educational scenarios among students of educational technology in Egypt. The study revealed statistically significant differences at the 0.05 level between the average post-test scores of two experimental groups, with the group utilizing artificial intelligence as a design variable in cooperative e-learning showing superior performance (Kamel, 2010). Al-Rashidi's (2014) study aimed to measure the effectiveness of self-directed learning based on computer expert systems in teaching geography, particularly focusing on cognitive achievement, critical thinking, and economic values among female secondary school students in Saudi Arabia. Using a quasi-experimental design, the results indicated statistically significant differences at the 0.05 level, with higher cognitive achievement scores observed in the post-test (Al-Rashidi, 2014).

The study by Al-Saeedi, Ibrahim, and Al-Sharhan (2015) examined the impact of designing an educational expert system on developing cognitive and performance skills related to electronic curriculum production among postgraduate students at King Saud University's College of Education in

Saudi Arabia. The research utilized descriptive, analytical, and quasi-experimental methodologies. The findings indicated statistically significant differences at the 0.05 level between the pre-test and post-test scores of the experimental group, favoring the post-test in both cognitive and performance aspects (Al-Saeedi, Ibrahim, & Al-Sharhan, 2015).

Culey (2016) highlighted the shortcomings of traditional English language teaching methods in middle schools, which have faced extensive criticism. The Ministry of Education subsequently introduced new standards for the English language curriculum. Despite initial challenges, the integration of information technology into English language courses facilitated improvements. Artificial intelligence applications in middle school English language instruction enhanced the teaching process, created new opportunities, and established an individualized learning environment. This effort aimed to develop a program for enhancing English teachers' capabilities by leveraging artificial intelligence, expert systems, and information technology to recognize natural language. Implementing this system in English language classes has improved teaching quality and students' learning abilities (Culey, 2016).

In summary, several prior studies align with the current research objectives, such as those by Woods (2004), Culey (2016), Al-Saeedi, Ibrahim, and Al-Sharhan (2015), and Al-Rashidi (2014). However, they differ in their scientific methodologies and study populations. The literature review helped evaluate artificial intelligence's effectiveness in enhancing educational performance.

From this perspective, this research aims to explore and analyze the impact of artificial intelligence applications in education on student learning and achievement. It will also examine these technologies' challenges and opportunities and identify the factors influencing their successful implementation. Understanding these elements can inform the development of strategies and guidelines for effective technology integration, thereby improving educational performance and student outcomes in Algeria. The research question is formulated as follows : How does the use of artificial intelligence technologies affect the improvement of students' educational performance from the perspective of professors at the University of Algeria2 ?

1.2. Research Questions

The following research questions are designed to explore the impact of artificial intelligence techniques on students' educational performance from the perspective of professors at the University of Algiers 2. These questions aim to investigate whether AI tools improve academic outcomes, whether there are significant differences in performance between groups that use

AI and those that do not, and whether students interacting with AI-based educational systems experience higher levels of benefit and satisfaction.

1. Does the use of artificial intelligence techniques improve students' educational performance according to the perspective of professors at the University of Algiers 2?
2. Are there statistically significant differences in student performance between groups that utilize artificial intelligence techniques and those that do not, as perceived by professors at the University of Algiers 2?
3. Do students engaging with educational systems based on artificial intelligence show higher levels of benefit and satisfaction compared to those using traditional systems, as perceived by professors at the University of Algiers 2?

1.3. Research Hypotheses

The integration of artificial intelligence (AI) into education has increasingly captured the attention of researchers and practitioners. This study aims to examine the perspectives of professors at the University of Algiers 2 on the impact of AI techniques on students' academic performance. Specifically, it seeks to determine whether AI tools enhance educational outcomes, compare the performance of students utilizing AI with those relying on traditional methods, and evaluate the levels of benefit and satisfaction reported by students interacting with AI-based educational systems. To address these objectives, the following research questions were formulated :

1. Does the use of artificial intelligence techniques in the educational process contribute to improving students' academic performance, as perceived by professors at the University of Algiers 2 ?
2. Are there statistically significant differences in student performance between groups that use artificial intelligence techniques and those that do not, according to the perspectives of professors at the University of Algiers 2 ?
3. Do students engaging with educational systems based on artificial intelligence exhibit higher levels of benefit and satisfaction compared to those using traditional systems, as perceived by professors at the University of Algiers 2 ?

1.4. Research Objectives

The application of artificial intelligence (AI) in higher education has emerged as a promising avenue for enhancing teaching and learning processes. This study focuses on exploring the role of AI in Algerian universities, with

particular attention to its impact on improving the educational experience at the University of Algiers 2. The research aims to analyze the current state of AI implementation, assess its contributions, and identify both the benefits and challenges associated with its use. To achieve these objectives, the study is guided by the following goals :

- To analyze the current use of artificial intelligence applications in higher education institutions in Algeria.
- To identify the actual contribution of artificial intelligence to enhancing the educational process at the University of Algiers 2.
- To determine the benefits of using technology and artificial intelligence to enhance higher education in Algeria.
- To reveal the challenges and obstacles faced by artificial intelligence applications in Algerian university institutions.

2. Foundations of the Study

2.1. Theoretical Framework

The application of artificial intelligence (AI) in education is a rapidly growing field. AI in education includes a variety of tools such as intelligent tutoring systems, automated grading, personalized learning, and data analytics that provide insights into student performance. **Examples include platforms like Coursera and Khan Academy**, which utilize AI algorithms to personalize learning experiences. These tools adapt the content based on individual progress and learning style, aiming to improve educational outcomes and student satisfaction.

Studies have shown that AI-based interventions, like adaptive learning software, can significantly impact student performance. For example, a study by Li and Huang (2020) demonstrated that AI-powered tutoring systems in Chinese universities increased student retention rates and exam scores by personalizing feedback. Another study by Baker and Smith (2021) found that AI in education can help identify at-risk students early, allowing for timely interventions.

However, the implementation of AI in educational settings is not without challenges. Factors such as limited technological infrastructure, lack of training among faculty, and concerns over data privacy can hinder the effective integration of AI tools. Sánchez and Bravo (2019) highlighted these challenges in their research on Latin American universities, which could provide comparative insights for Algerian contexts.

2.1.1. Definition of Key Terms

1. Artificial Intelligence (AI) : Artificial intelligence refers to the ability of a machine to mimic human cognitive processes such as understanding, learning, reasoning, and problem-solving. According to the *Merriam-Webster Dictionary*, AI is defined as a set of technologies that enable systems to understand, learn, act, and respond similarly to humans UAE Ministry of State for Artificial Intelligence, 2022). It focuses on developing algorithms and software that allow machines to perform tasks that require human intelligence, such as natural language processing, image recognition, and decision-making.
2. Performance Improvement : Performance improvement in education is defined as the observable and measurable progress in students' abilities and skills. It involves assessing students' responses to various educational stimuli, such as classroom activities or technology-based interventions. For instance, Al-Atab (2021describes it as the behavior exhibited by students and teachers that can be measured using standardized observation tools. This study focuses on how the use of AI can influence these observable aspects of student performance.

2.1.2. Variables of the Study

In studying the impact of artificial intelligence (AI) on education, it is crucial to define the key variables that shape the research framework. These include the independent variable, which represents the implementation of AI techniques in the educational process, the dependent variable, which captures the improvement in students' educational performance, and the control variables, which account for contextual factors that may influence the outcomes.

1. Independent Variable : The implementation of artificial intelligence techniques in the educational process (e.g., intelligent tutoring systems, automated feedback tools).
2. Dependent Variable : The improvement in students' educational performance (e.g., exam scores, retention rates, level of engagement).
3. Control Variables : Factors such as the professors' experience with technology, the availability of infrastructure, and students' initial academic performance.

2.2. Methodological Considerations

To test the hypotheses, a **mixed-method approach** will be employed, combining quantitative data (e.g., exam scores, survey results) and qualitative data (e.g., interviews with professors, focus groups with students). A **quasi-experimental design** will be used to compare student performance between a group exposed to AI-based educational tools and a control group using traditional methods.

2.2.1. Potential Challenges

The integration of AI in higher education may face several obstacles :

1. Technological Limitations : Limited access to necessary infrastructure and digital tools in some Algerian universities.
2. Training Gaps : Professors may require additional training to effectively use AI tools in their teaching.
3. Data Privacy Concerns : The use of student data for AI applications raises ethical and privacy issues that need to be addressed.

By addressing these challenges, this study aims to provide actionable recommendations for enhancing the use of AI in Algerian higher education, ultimately contributing to improved student outcomes and satisfaction.

2.2.2. Sample Characteristics :

Table 01 and Figure 01 represent the distribution of study participants according to the gender vari



Gender	Frequency Percentage	Percentage %
Male	44	36.06 %
Female	78	63,93 %
Total	122	100 %

Figure1SampleDistribution by Gende Source : Directed by the researcher able

2.3. Survey Design and Implementation

2.3.1. Methodology and Data Collection

This section outlines the methodology used to gather data for this study on the effectiveness of artificial intelligence techniques in higher education. The survey was conducted at the University of Algiers 2, with a sample of professors across various disciplines. The following details the survey study, the sample selected, and the tool used to assess the impact of AI on educational performance.

1. Survey Study : The survey was conducted in November 2023 at the University of Algiers 2, Abou El Kacem Saadallah, to apply the survey tool to a sample of higher education professors from various disciplines.
2. Survey Sample : The survey sample consisted of 65 professors from the University of Algiers 2.
3. Survey Tool : The tool used was a scale developed by researcher Anja to assess the effectiveness of artificial intelligence techniques in educational performance, given the scarcity of studies in this field. The scale comprises 27 items, each with five response options (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree), with scores ranging from 1 to 5. The total score from each questionnaire ranges from 27 to 135, with a theoretical average of 75.

2.3.2. Psychometric Properties of the Scale

2.3.2.1. Firstly : Scale Validity

Validity refers to the degree to which a test accurately measures the intended characteristic (Abdul Khaleq, 2007, p. 28). The validity of the scale was statistically ensured through various methods, including :

1. Internal Consistency Reliability : The internal consistency of the scale was assessed using a sample of 65 participants. Pearson correlation coefficients were calculated between each item's score and the total score of its respective dimension, as well as between the total score of the dimension and the total score of the scale. In our study, most items showed significant correlations at the 0.01 or 0.05 significance level. However, items 24, 4, and 3 showed non-significant correlations and were excluded from further analysis. This indicates good internal consistency, making the scale reliable for applied research.

2. Discriminant Validity (Concurrent Validity) : This method assesses the scale's validity by evaluating its ability to differentiate between extremes, i.e., the lower and upper groups. Construct validity and content validity were calculated by arranging the sample scores in ascending order and taking the top 27% (30 * 27/100). Differences were then analyzed using a t-test between the means of these two groups, as shown in Table 2.

Table 2 illustrates the discriminant validity of the AI techniques effectiveness scale in educational performance

Indicator	Number	F	Probability Value (Sig)	Mean	Standard Deviation	Degrees of Freedom	t-test	Significance Level
Evaluation of AI Effectiveness in Educational Performance	Upper 8	3.95	0.067	83.37	8.58	14	11.18	
Lower 8	-	-	-	43.37	5.34	-	-	

Source : Researcher's analysis

The t-test value of 11.18, with a significance level of $\alpha = 0.000$, is lower than the $\alpha = 0.05$ threshold, indicating that the scale effectively differentiates between the upper and lower extremes, confirming its validity.

2.3.2.2. Secondly : Scale Reliability

To assess the scale's reliability, the following method was used : Cronbach's Alpha Coefficient

Cronbach's alpha was calculated using SPSS, as shown in Table 3.

Cronbach's Alpha	Number of Items	Variable
0.88	27	AI Effectiveness

Source : Researcher's analysis

A Cronbach's alpha of 0.88 indicates a high level of reliability, supporting the use of this scale in the main study.

2.3.3. Primary Study

This section provides an overview of the primary study, including the methodology, limitations, population and sample, as well as the statistical methods used for data analysis. The study aimed to evaluate the effectiveness of artificial intelligence techniques in enhancing educational performance, with a focus on professors applying these techniques in their teaching. The

study was conducted within defined spatial and temporal boundaries, and data analysis was performed using a variety of statistical methods to ensure the accuracy and reliability of the findings.

1. Study Methodology : A descriptive approach was used to evaluate the effectiveness of artificial intelligence techniques in enhancing educational performance. The study examined hypotheses related to the impact of AI on students and classroom learning processes. The descriptive methodology is suitable for exploring the phenomenon by collecting detailed data.
2. Study Limitations :
3. Spatial Boundaries : Faculty of Social Sciences and Humanities at the University of Algiers 2, Abou El Kacem Saadallah.
4. Temporal Boundaries : November 2023.
5. Study Population and Sample : This study targets professors who apply modern AI techniques in their teaching. The main sample consisted of 122 professors.
6. Statistical Methods Used : Data were analyzed using SPSS with the following methods :

- Mean
- Standard Deviation
- Pearson Correlation Coefficient
- Cronbach's Alpha Coefficient
- t-test

3. Results and Findings

3.1.Presentation of the Results of the First Hypothesis

Hypothesis : The use of artificial intelligence techniques in education enhances the efficiency of improving students' academic performance. Pearson correlation coefficient was used for statistical analysis.

Table 04 : Correlation Between AI Use and Student Performance Improvement

Variable	Mean	Standard Deviation	Pearson Correlation Coefficient	SIG (Significance)	Statistical Significance
Effectiveness of AI Techniques	63.17	10.30	0.52**	0.000	Statistically Significant
Improvement in Performance	42.30	10.231			

Source : Prepared by the researcher

The table above shows that the Pearson correlation coefficient between the variable "Effectiveness of AI Techniques" and "Improvement in Performance" is 0.52, with a significance level (SIG) of 0.000. This result is statistically significant at the 0.01 level, indicating a moderately positive (direct) relationship between the variables. This finding supports the first hypothesis of the study, which asserts that the use of artificial intelligence techniques in the educational process enhances the efficiency of improving student performance.

3.2. Presentation of the Results of the Second Hypothesis

The hypothesis reminder is that there are no statistically significant differences in student performance between the use and non-use of artificial intelligence techniques. To verify this, the hypothesis was tested using the independent samples t-test, which allowed for a comparison between the two groups in terms of their academic outcomes. The results of this statistical test provide insight into whether the use of AI techniques in education has a measurable impact on student performance.

Table 05 : t-Test Differences Between AI Users and Non-users

Group	Frequency	Mean	Standard Deviation	T-test Value	SIG (Significance)	Statistical Significance
Users of Artificial Intelligence Tools	76	83.85	7.49	-9.14	0.00	Statistically Significant
Non-users of Artificial Intelligence Technologies	46	105.92	6.34			

Source : Prepared by the researcher

The table (05) clearly demonstrates statistically significant differences in the average scores between users and non-users of artificial intelligence techniques in evaluating the effectiveness of AI usage in improving educational performance. This is evidenced by the t-test value of -9.14, with a significance level (SIG) of 0.00, indicating statistical significance at the 0.01 level. This result implies that differences exist between users and non-users

of artificial intelligence techniques. Consequently, the null hypothesis can be rejected in favor of the alternative hypothesis, which suggests significant differences favoring users of these techniques.

3.3.Presentation of Hypothesis 3 Results

The hypothesis reminder is that the level of proficiency in using artificial intelligence techniques among students is high. To verify this, the Analysis of Variance (ANOVA) test was employed, allowing for an evaluation of whether there are significant differences in proficiency levels across different groups of students. The results of this test provide insight into the extent of students' competence in utilizing AI techniques.

Table 06 : Faculty's Proficiency in AI Techniques

Statistical significance	Chi-Square Test	Total	High Level	Medium Level	Low Level
0.000	66.36	122	28	61	33
t - Observation		100 %	22.95 %	50 %	27.05 %

Source : Conducted by the researcher

The table illustrates statistically significant differences in students' interaction levels with artificial intelligence (AI), categorized as low, medium, and high. The Chi-Square test value of 66.36 at a significance level of 0.000 confirms these differences. As a result, the hypothesis estimating students' interaction with AI as high is accepted, and the null hypothesis is rejected.

4. Discussion of Hypotheses

4.1. Hypothesis 1 Discussion

The hypothesis is that the use of artificial intelligence (AI) techniques in educational processes enhances students' academic performance. As shown in Table (1), the Pearson correlation coefficient between AI effectiveness and performance improvement is 0.52, with a significance level of 0.00 (statistically significant at the 0.01 level). This indicates a moderately positive correlation, confirming the hypothesis that AI use enhances students' academic performance. The findings align with Al-Manshaawi and Al-Rashidi (2022) and Akon and Green Show (2022), which highlight the benefits of integrating AI in education, particularly for smart learning and distance education. This is consistent with studies by Shihata (2005) and Ammar (2006), which emphasize the importance of incorporating AI in educational processes.

4.2. Hypothesis 2 Discussion

The hypothesis is that there are statistically significant differences in performance between students who use AI technologies and those who do not. The analysis in Table (06) shows significant differences in average scores between AI users and non-users, with a t-test value of -9.14 and a significance level of 0.00. The null hypothesis is thus rejected in favor of the alternative hypothesis, indicating that AI users demonstrate better performance. The findings align with Kamel (2010), Ibrahim (2015), and Al-Owaidi & Husona (2017), who found that AI use enhances problem-solving skills and decision-making capabilities. Additionally, Al-Rashidi (2014) and Al-Faqi (2012) noted significant improvements in cognitive achievement and positive attitudes towards AI-assisted learning.

4.3.Hypothesis 3 Discussion

The hypothesis is that the level of student proficiency in using AI techniques is high. Table (06) shows variability in teacher assessments, with 33 % rating students' proficiency as low, 61 % as medium, and 27 % as high. The Chi-square test value of 66.36 at a significance level of 0.01 confirms statistical significance, indicating that most teachers perceive student interaction with AI technologies as moderate. These findings are consistent with Al-Awadi & Hussuna (2017) and Woods (2004), who demonstrated the higher effectiveness of virtual media in education compared to traditional models.---

Conclusion

The use of artificial intelligence in enhancing educational performance is becoming crucial amid rapid technological advancements. Evidence from Algeria 2 University shows that AI technologies significantly contribute to improved learning experiences, curriculum enhancements, and personalized education. These technologies also aid in better management of educational processes like strategic planning and resource management. The findings suggest that AI plays a vital role in boosting educational outcomes, making it essential to implement AI applications across different educational settings.

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Abstract

This study aims to assess the effectiveness of using artificial intelligence technologies in enhancing educational performance. It explores several hypotheses regarding the impact of artificial intelligence on students and the learning processes in classrooms. A questionnaire consisting of 27 questions was used to gather teachers' opinions about their experiences and perspectives on the application of smart technologies in education. The key hypotheses include the effects of smart technologies on : 1. Educational Effectiveness : The use of smart technologies improves students' understanding of challenging academic subjects. 2. Effectiveness of Use : The application of artificial intelligence enhances student engagement and effectiveness in classrooms. The results show that the use of smart technologies fosters better student interaction with educational content. These technologies also facilitate a more effective understanding of difficult subjects. Furthermore, smart technologies positively influence student motivation and increase classroom participation.

Keywords

Evaluation, intelligence, artificial intelligence, performance, educational performance

مستخلص

تهدف هذه الدراسة إلى تقييم فعالية استخدام تقنيات الذكاء الاصطناعي في تحسين الأداء التعليمي والتعلمي. وتتطرق الدراسة إلى عدة فرضيات تتعلق بتأثير استخدام الذكاء الاصطناعي على الطلاب وعمليات التعلم في الفصول الدراسية. تعتمد الدراسة على استبانة تحتوي على 27 سؤالًا لتقييم آراء الأساتذة حول تجربتهم ووجهات نظرهم في استخدام التقنيات الذكية في التعليم. تشمل الفرضيات الرئيسية تأثير استخدام التقنيات الذكية على :

1. الفاعلية التعليمية : يؤدي استخدام التقنيات الذكية إلى تحسين فهم الطلاب للمواد الدراسية الصعبة.
2. فعالية الاستخدام : يسهم استخدام الذكاء الاصطناعي في زيادة مشاركة الطلاب وفعاليتهم في الفصول الدراسية.

توصلت الدراسة إلى أن استخدام التقنيات الذكية يعزز من تفاعل الطلاب مع المحتوى التعليمي. كما تساعد هذه التقنيات في تحسين فهم الطلاب للمواد المعقدة بطرق أكثر فعالية. بالإضافة إلى ذلك، تؤثر التقنيات الذكية على تحفيز الطلاب وتزيد من مشاركتهم في الفصول الدراسية.

لمات مفتاحيّة

التقييم، الذكاء، الذكاء الاصطناعي، الأداء، الأداء التعليمي

Résumé

Cette étude vise à évaluer l'efficacité de l'utilisation des technologies d'intelligence artificielle dans l'amélioration des performances éducatives. Elle s'intéresse à plusieurs hypothèses concernant l'impact de l'intelligence artificielle sur les étudiants et les processus d'apprentissage en classe. Un questionnaire de 27 questions a été utilisé pour recueillir les avis des enseignants sur leurs expériences et perspectives concernant l'utilisation des technologies intelligentes dans l'éducation. Les principales hypothèses portent sur les effets des technologies intelligentes sur :
1. Efficacité éducative : L'utilisation des technologies intelligentes améliore la compréhension des matières académiques difficiles par les étudiants.
2. Efficacité d'utilisation : L'application de l'intelligence artificielle contribue à une augmentation de l'engagement et de l'efficacité des étudiants en classe.
Les résultats montrent que l'utilisation des technologies intelligentes améliore l'interaction des étudiants avec le contenu éducatif. Ces technologies facilitent également une compréhension plus efficace des matières complexes. De plus, elles ont un impact positif sur la motivation des étudiants et augmentent leur participation en classe.

Mots-clés

Evaluation, intelligence, intelligence artificielle, performance, performance éducative