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The Role of Artificial Intelligence in Raising the Academic Competence of Students of the Faculty of Information Technology at Sirte University

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دور الذكاء الاصطناعي في رفع الكفاءة العلمية لطلبة كلية تقنية المعلومات بجامعة سرت

حمامة الجير أحمد أبوشويشة
كلية تقنية المعلومات - جامعة سرت ـ سرت ـ ليبيا
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الملخص:

هدفت هذه الدراسة، التي جاءت تحت عنوان "دور الذكاء الاصطناعي في رفع الكفاءة العلمية لطلبة كلية تقنية المعلومات بجامعة سرت"، إلى تقييم تأثير تقنيات الذكاء الاصطناعي على الأداء الأكاديمي لطلاب الكلية. تم استخدام المنهج الوصفي التحليلي، مع الاعتماد على استبيانات وزعت على عينة عشوائية مكونة من 50 طالبًا وطالبة من مختلف تخصصات الكلية. تم تحليل البيانات باستخدام برنامجSPSS ، إلى جانب إجراء مقابلات مع أعضاء هيئة التدريس للحصول على نظرة شاملة حول تأثير الذكاء الاصطناعي في تحسين الكفاءة العلمية. وقد أظهرت النتائج أن استخدام تقنيات الذكاء الاصطناعي يسهم بشكل كبير في تعزيز الفهم الأكاديمي وتطوير المهارات التقنية للطلاب، حيث أفاد 66% من المشاركين بتحسن في نتائجهم الأكاديمية، وأكد 80% منهم أن هذه التقنيات ساعدتهم في التكيف مع التغيرات التكنولوجية في مجالات تخصصهم. كما أشار 70% من الطلاب إلى أن الذكاء الاصطناعي زاد من تحفيزهم على الدراسة والمراجعة. وبناءً على هذه النتائج، توصي الدراسة بتطوير المناهج الدراسية لتشمل مواضيع الذكاء الاصطناعي، وتحسين البنية التحتية الرقمية، وتقديم دورات تدريبية لأعضاء هيئة التدريس، وتعزيز التعاون مع القطاع الصناعي لتوفير فرص تعلم عملية. كما يجب زيادة الوعي بأخلاقيات استخدام الذكاء الاصطناعي لضمان استخدام هذه التقنيات بشكل آمن ومستدام.

الكلمات المفتاحية: الذكاء الاصطناعي، الكفاءة العلمية، طلاب تقنية المعلومات، جامعة سرت.

Abstract:

This study, titled "The Role of Artificial Intelligence in Raising the Academic Competence of Students of the Faculty of Information Technology at Sirte University," aimed to evaluate the impact of AI technologies on the academic performance of students at the college. A descriptive-analytical approach was used, relying on questionnaires distributed to a random sample of 50 male and female students from various college specializations. Data was analyzed using SPSS, along with interviews with faculty members to gain a comprehensive view of the impact of AI on improving academic competence. The results showed that the use of AI technologies significantly contributes to enhancing academic understanding and developing students' technical skills. 66% of participants reported an improvement in their academic results, and 80% confirmed that these technologies helped them adapt to technological changes in their fields of specialization. 70% of students also indicated that AI increased their motivation to study and review. . Based on these findings, the study

recommends developing curricula to include AI topics, improving digital infrastructure, offering training courses for faculty members, and enhancing collaboration with the industry to provide practical learning opportunities. Awareness of the ethics of using AI must also be raised to ensure the safe and sustainable use of these technologies.

Keywords: Artificial Intelligence, Academic Competence, IT Students, Sirte University, Higher Education.

Introduction:

In recent years, there has been a tremendous development in the field of technology, especially in the area of Artificial Intelligence (AI), which has become one of the most prominent pillars relied upon across various sectors. In higher education—particularly in Information Technology disciplines—AI serves as a powerful tool that contributes to the development of teaching methods by offering innovative solutions to enhance students' academic competence. This technological transformation strengthens students' ability to interact with educational content and helps develop their technical and scientific skills, making them more prepared to face the challenges of the job market. The significance of this study lies in its ability to provide a clear picture of how AI contributes to enhancing the educational experience of students at the Faculty of Information Technology at Sirte University. This study will explore how AI can help students become better researchers, analysts, and problem-solvers, as well as how it can assist them in becoming more collaborative and self-organized. This research will mainly focus on the impact of AI on improving the academic performance of students at the Faculty of Information Technology at Sirte University. The aim of this study is to clarify how AI can effectively raise the academic competence of these students and how these technologies can be used more efficiently to achieve the best possible academic outcomes.

Research Problem:

The core issue addressed in this study revolves around how to improve the academic performance of students at the Faculty of Information Technology at Sirte University through the use of Artificial Intelligence (AI). With the rapid global advancement of technology, AI technologies have become an essential part of modern educational resources. The main **research question is:**

- To what extent does the use of Artificial Intelligence contribute to improving the academic competence of students at the Faculty of Information Technology at Sirte University, and what are the challenges that may hinder this improvement?

From this central question, the following sub-questions emerge:

1. To what extent are students at the Faculty of Information Technology at Sirte University aware of the importance of AI in enhancing their academic achievement?

2. What benefits do students gain from using smart technologies such as self-learning systems and AI-supported interactive platforms?

3. What difficulties do IT students face when attempting to use AI technologies in their academic courses?

4. Can AI technologies assist in assessing students' competence across various subjects and accelerate the academic evaluation process?

5. What are some possible approaches to enhancing the use of AI in higher education to maximize the benefits for IT students?

Research Hypotheses:

1. First Hypothesis: AI technologies contribute to improving the academic competence of students at the Faculty of Information Technology at Sirte University by enhancing their understanding of complex concepts in their fields of specialization.

2. Second Hypothesis: The use of AI tools in education helps to enhance the research and analytical skills of students at the Faculty of Information Technology at Sirte University.

3. Third Hypothesis: The use of AI technologies in learning strengthens students' ability to manage their time and organize academic tasks, thereby improving their academic competence.

4. Fourth Hypothesis: Students at the Faculty of Information Technology at Sirte University face challenges in applying AI technologies, including a lack of technical knowledge and appropriate training.

5. Fifth Hypothesis: AI technologies help improve students' ability to adapt to labor market requirements in the field of Information Technology by developing their practical skills.

Research Objectives:

1. To examine how AI tools can help Information Technology students better understand complex scientific concepts.

2. To clarify how the use of AI technologies can enhance the research and analytical capabilities of students at the Faculty of Information Technology at Sirte University.

3. To identify the obstacles students face when using AI technologies in the classroom and explore ways to overcome them.

4. To study the effects of AI technologies on students' readiness to meet the demands of the workforce in the field of Information Technology.

5. To investigate how AI technologies can assist IT students in organizing their academic tasks and managing their time more effectively.

Significance of the Study:

The importance of Artificial Intelligence in enhancing the academic competence of students at the Faculty of Information Technology at Sirte University lies in its focus on how AI technologies influence the improvement of students' academic performance-an area that is rapidly evolving worldwide. This study is significant in deepening our understanding of how students can benefit from AI applications in education, such as intelligent systems that facilitate interactive learning and enhance research capabilities.

Definitions of Key Terms:

1. **Artificial Intelligence (AI):** A field of computer science that aims to create systems capable of performing tasks that require human intelligence, such as learning, reasoning, creativity, analysis, and evaluation (Shaaban, 2021).

2. **Academic Competence:** The ability to effectively apply acquired knowledge and skills to solve problems, understand natural and social phenomena, and make scientifically-based decisions across various contexts in daily life, education, and work (OECD, 2024).

3. **Students of the Faculty of Information Technology:** Male and female students enrolled in all academic disciplines within the Faculty of Information Technology at Sirte University.

4. **Sirte University:** An educational institution established in 1989, comprising several colleges and departments, offering both theoretical and practical higher education, and granting degrees and certifications in various fields.

Previous Studies:

1. Al-Omari and Al-Dossary Study (Saudi Arabia, 2025):

This study, titled "Artificial Intelligence in Enhancing the Scientific Competence of Faculty Members", was conducted by Al-Omari and Al-Dossary from King Saud University. It included a sample of 376 professors from three Saudi universities and aimed to assess the impact of AI applications on teaching and research competence. The overall evaluation of AI's role was rated very highly, reflecting broad recognition of its positive impact on academic performance. The study did not indicate significant differences based on academic rank or years of experience, except for a slight gender-based difference in favor of males. One key finding was that AI applications enhance faculty members' efficiency in both teaching and research and are positively correlated with improved academic performance.

2. Wahiba and Bakhoush Study (Algeria, 2024):

This field study, titled "Artificial Intelligence and Scientific Research Among Students", was conducted at Mohamed Ben Ahmed University in Oran, targeting a sample of 100 social sciences students. It aimed to evaluate the impact of training students on AI tools on the quality and presence of their research output. The results showed that students trained in these tools demonstrated significant improvement in academic competence and research quality, confirming that AI contributes to enhancing student research.

3. Wafa Shadada and Zagbar Study (UAE, 2024):

This study, titled "Empowering Scientific Research Using Artificial Intelligence", focused on balancing innovation and ethical responsibility in the use of AI in scientific research. The researcher highlighted AI's capacity to accelerate data analysis, explore topics, generate recommendations, and assist in academic writing. The findings emphasized that AI is a powerful tool for advancing research but must be employed responsibly within a clear ethical framework.

4. **Al-Astal and Al-Agha Study (Palestine, 2021):**

This study aimed to develop a proposed AI-based model and examine its effectiveness in enhancing programming skills among students at the University College of Science and Technology in Khan Younis. The tool used was a programming skills observation checklist, applied to a sample of 33 students enrolled in the software diploma program. Using a quasi-experimental approach, the study revealed statistically significant differences (at $\alpha < 0.05$) between the students' pre- and post-test scores in favor of the post-test, indicating the model's effectiveness.

5. **Hinojo-Lucena Study (2019):**

This study analyzed scientific production related to AI in higher education indexed in the Web of Science and Scopus databases during the period 2007–2017. It used a descriptive survey methodology through bibliographic analysis. The study concluded that although AI is an impressive and promising field, scientific output regarding its application in higher education remains fragmented and lacks cohesion.

Research Methodology:

This study follows the descriptive-analytical approach, which aims to describe and analyze the role of Artificial Intelligence (AI) in enhancing the academic competence of students at the Faculty of Information Technology at Sirte University. The descriptive method relies on collecting field data through questionnaires and interviews with students to determine how AI technologies are being used in academic education.

1. **Research Tools:**

- Student Questionnaire: Includes both closed and open-ended questions to collect data on students' awareness of AI technologies and how they use them to improve their academic learning.

- Literature Review: Involves analyzing previous studies that have explored the role of AI in education, particularly in the field of Information Technology.

2. **Data Sources:**

- Primary Data: Collected through questionnaires distributed to students at the Faculty of Information Technology at Sirte University.

- Secondary Data: Gathered from previous studies, scientific articles, academic reports, and references related to the use of AI in education, to provide a comprehensive overview of the subject.

3. **Study Sample:**

The sample consists of 50 male and female students from various specializations within the Faculty of Information Technology at Sirte University. Participants are selected using a random sampling method. The sample aims to represent different student groups (academic level, sub-specializations), allowing for a diverse analysis of the impact of AI on students' academic competence.

4. **Analysis Methods:**

• Quantitative Analysis: Data collected from the questionnaires will be analyzed using statistical analysis software such as SPSS. Appropriate statistical methods will be used (e.g., frequency distribution, means, and group comparison tests) to analyze student responses.

• Qualitative Analysis: Data from the interviews will be analyzed using thematic analysis to explore the impact of AI on educational improvement.

Scope of the Study:

1. Spatial Scope: The study is limited to the Faculty of Information Technology at Sirte University.

2. Temporal Scope: The academic semester of 2024–2025.

3. Human Scope: Students of the Faculty of Information Technology at Sirte University.

4. Conceptual Scope: The role of Artificial Intelligence in enhancing the academic competence of students at the Faculty of Information Technology at Sirte University.

Theoretical Framework:

Section One: The Concept of Artificial Intelligence and Its Applications in Education.

First Requirement: The Concept and Fundamentals of Artificial Intelligence

Artificial Intelligence (AI) is considered one of the most significant technological advancements in the field of computer science. It aims to build systems and programs capable of simulating human behavior, especially in areas such as learning, thinking, decision-making, and problem-solving. This includes the ability of computers to handle numbers, letters, mathematical operations, make judgments, and process, store, and retrieve information quickly and efficiently, enabling them to perform complex tasks that humans find difficult to accomplish easily (Abdulsamad, 2020). Mousa defined artificial intelligence as computer programs designed to perform various tasks in response to human commands, particularly those requiring broad thinking abilities such as critical thinking, memory organization, and cognitive learning (Mousa, 2019). Al-Afifi described it as a set of traits and actions that constitute artificial intelligence, comparing it to human intellectual, cognitive, and practical abilities, including the capacity to learn, infer conclusions, and respond rapidly to inputs (Al-Afifi, 2003). Furthermore, Fernandez and Aburto described it as an approach through which computer science provides a set of tools, methods, and strategies to model human behavior and develop solutions (Fernandez & Aburto, 2019).

Artificial Intelligence Technologies:

1. **Machine Learning**: Machine learning is one of the AI techniques that provides software applications with algorithms for self-learning without being explicitly programmed to perform a specific task. These algorithms help predict outcomes with high accuracy.

2. **Natural Language Processing (NLP):** This is an AI technique concerned with the interactions between natural human languages and computer systems.

Second Requirement: Fields of Artificial Intelligence Use in Education:

Artificial intelligence has greatly enriched and advanced the use of computers in education, both from the perspective of students and the specialists involved in the teaching process such as teachers, instructional designers, curriculum developers, and others. The fields of AI application in education can generally be illustrated in light of the general fields of computer use in education as follows:

1. **Using Artificial Intelligence as an Educational Subject:**

This strategy aims to teach AI to students within educational institutions, where AI is taught as an academic subject. This approach allows students to develop expert systems related to their fields of study by learning the principles of AI, its domains, and its programming languages such as LISP, Prolog, and CLIPS.

2. **Using Artificial Intelligence as a Teaching and Learning Tool:**

This model seeks to carry out training and educational tasks using AI programs and capabilities. For example, students can use expert systems to solve problems, refine specific skills, and identify stages of logical thinking related to defined educational objectives. One of the most important applications of AI in this model is intelligent tutoring systems (ITS).

3. **Using Artificial Intelligence in the Educational Process:**

This model aims to utilize AI programs and skills to perform complex administrative tasks that are difficult to accomplish using traditional computer models. Expert systems are among the most common applications of this concept. Additional AI applications can be used, such as machine translation programs or speech and voice recognition software, which allow users to input data into computers vocally (Rawiya, 2003).

Section Two: The Role of Artificial Intelligence in Improving the Academic Competence of Information Technology Students

Digital tools and artificial intelligence have become essential for enhancing and advancing educational institutions in today's technological era. In this regard, the use of AI is creating a significant transformation in teaching and learning methodologies in educational institutions worldwide. The Faculty of Information Technology at Sirte University is one such institution focused on improving the educational process and helping its students achieve academic excellence.

First Requirement: The Impact of Artificial Intelligence on Improving Student Performance

Artificial Intelligence (AI) is one of the fastest-growing technologies across many sectors, including education. AI can significantly enhance student performance through its diverse applications, enabling students to achieve better understanding and higher academic success. This research will study the most prominent uses of AI in education and how students can utilize these tools to improve their performance (Hamouda, 2024).

The importance of Artificial Intelligence in Education and Its Role in Enhancing the Learning Experience

1. **Personalizing the Educational Process:**
   Artificial intelligence can tailor education to meet the needs of each individual student, thereby improving learning efficiency and helping to achieve educational goals.
2. **Data Analysis and Guidance Provision:**
   AI has the ability to analyze vast amounts of data to understand students' performance and provide accurate, customized advice to enhance their performance and understanding of the subject matter.
3. **Providing Diverse and Innovative Learning Experiences:**
   AI can offer a wide range of advanced learning opportunities, such as virtual reality and game-based learning, to increase interactivity and engagement in the educational process.
4. **Improving the Quality of Educational Materials:**
   By creating creative and varied content that meets students' needs and deepens their knowledge, AI can enhance the quality of educational resources.
5. **Offering Interactive Learning Experiences:**
   Deep learning, virtual reality, and educational games are examples of interactive learning environments that can be used with AI to simulate reality more accurately. This improves the effectiveness and enjoyment of the learning process.

Section Two: Advantages and Disadvantages of Artificial Intelligence in Education:

Artificial intelligence (AI) is one of the most prominent technologies that has brought a qualitative shift to many sectors, including education, as a result of rapid technological growth and expansion. Many academic institutions have begun adopting AI technology to improve teaching strategies and accelerate the learning process in response to these developments. Among the educational institutions utilizing these advanced technologies to enhance students' learning and academic performance is the Faculty of Information Technology at the University of Sirte.

This research aims to analyze the benefits and drawbacks of using AI in classrooms for students of the Faculty of Information Technology at the University of Sirte. It will discuss these advantages and disadvantages, explore how AI impacts the faculty's educational program, and suggest ways to improve its use in a manner that enhances learning while considering the ethical and societal implications of such technologies. According to **Al-Mohammadi (2024)**, there are several advantages and disadvantages to using AI in education, as outlined below:

First Advantages:

1. **Personalized Learning:**

   AI can adapt education to meet the unique needs of each learner, thereby increasing the effectiveness of the educational process.

2. **Providing Instant Feedback:**

   With its ability to offer immediate feedback and precise analysis of students' performance, AI enables teachers to provide the necessary guidance and adjust classroom activities to meet their students' needs.

3. **Offering Diverse Educational Resources:**

   AI can provide a variety of learning materials, such as simulations, educational games, and interactive information, enhancing both the effectiveness of learning and student engagement.

4. **Student Data Analysis:**

   AI can improve teachers' and school administrators' understanding of students' performance and learning needs through comprehensive student data evaluation.

5. **Developing Student Interaction Tools:**

   AI can facilitate new approaches to interacting with students, such as answering inquiries in specific subject areas or creating assignments that help them achieve defined goals.

Second Disadvantages:

1. **Reduced Human Interaction:**

   The quality of interactions between teachers and students may be affected by the lack of human communication resulting from excessive AI use in education.

2. **Inequality in Access to Technology:**

   Due to the unavailability of devices and internet access required for AI-based learning for all students, reliance on technology in classrooms may widen the digital divide among learners.

3. **Overreliance on Technology:**

   Human and social aspects of education, such as direct communication and group projects, may be neglected due to excessive dependence on technology.

4. **Privacy and Security Concerns:**

   The collection and analysis of vast amounts of students' personal data require strict regulations and processes for protection. Thus, AI use in education raises privacy and security issues.

While AI has much to offer the educational field, there are several issues that must be addressed to ensure its optimal use while safeguarding students' safety and rights. By evaluating the advantages and disadvantages of applying AI in high-quality education, it becomes clear that although there are many reasons to use technology to improve the learning process, there are also drawbacks that require further research and analysis to fully realize the potential benefits of this technology in the classroom.

To maximize these benefits, appropriate solutions to these challenges must be found. According to **Al-Ruhaifa (2024)**, the study concluded with several methods for overcoming the problems and limitations of AI.

Research Procedures

This questionnaire aims to explore how artificial intelligence (AI) technologies can contribute to enhancing the quality of education and developing students' skills in their fields of study. It will also help in providing recommendations that support the improved use of these technologies within the educational process.

Dimension One: The Use of Artificial Intelligence Tools in Learning

This dimension addresses how students use AI technologies such as smart learning, adaptive learning software, and digital simulations in their studies.

1. Do you use AI tools such as simulations or interactive lessons in your learning?

O Yes O No O Sometimes

2. Do you find that AI helps you understand academic subjects better?

O Yes O No O Sometimes

3. Do you use AI software to train on technical skills related to your major?

O Yes O No O Sometimes

4. Do you benefit from AI-powered smart learning platforms to improve your learning?

O Yes O No O Sometimes

5. Do AI tools provide you with customized learning materials based on your level of understanding?

O Yes O No O Sometimes

6. Do you find that using AI speeds up your learning process?

O Yes O No O Sometimes

7. Do you use AI applications to improve your skills in programming or mathematics?

O Yes O No O Sometimes

8. Do AI tools provide you with direct interaction with academic topics?

O Yes O No O Sometimes

9. Do you find that AI helps you review academic materials in more diverse ways?

O Yes O No O Sometimes

10. Do you use AI tools to solve complex technical problems you encounter during your studies?

O Yes O No O Sometimes

11. Does AI contribute to scheduling your study and review sessions based on performance assessment?

O Yes O No O Sometimes

12. Do you use AI tools to learn languages or advanced technical terms?

O Yes O No O Sometimes

13. Do you find that AI provides you with innovative solutions in your fields of study?

O Yes O No O Sometimes

14. Do you use AI to acquire new skills related to future technologies?

O Yes O No O Sometimes

15. Do you find that using AI makes the learning process more enjoyable and motivating for you?

O Yes O No O Sometimes

Dimension Two: The Impact of Artificial Intelligence on Academic Achievement.

This dimension includes the extent to which AI technologies affect students' academic performance and improve their skills in different subjects.

1. Do you feel that using AI tools has helped improve your academic results?

O Yes O No O Sometimes

2. Do you notice an improvement in your academic performance thanks to the use of AI technologies in your learning?

O Yes O No O Sometimes

3. Has AI helped you understand subjects that you previously found difficult?

O Yes O No O Sometimes

4. Has the use of AI increased your motivation to study and review?

O Yes O No O Sometimes

5. Has AI helped you achieve better results in tests and exams?

O Yes O No O Sometimes

6. Does AI enhance your ability to grasp academic concepts more quickly?

O Yes O No O Sometimes

7. Have you found that AI helps you stay focused while studying?

O Yes O No O Sometimes

8. Does AI provide you with new methods to measure your academic progress?

O Yes O No O Sometimes

9. Have you noticed improvement in your practical or theoretical skills as a result of using AI?

O Yes O No O Sometimes

10. Have AI technologies helped you manage your study time more effectively?

O Yes O No O Sometimes

11. Were AI-powered tools more effective in helping you review lessons compared to traditional methods?

O Yes O No O Sometimes

12. Has the use of AI increased your deep understanding of concepts in your academic field?

O Yes O No O Sometimes

13. Does AI positively affect your academic performance compared to students who do not use it?

O Yes O No O Sometimes

14. Has AI helped you improve in academic areas where you previously faced difficulties?

O Yes O No O Sometimes

15. Do you think AI can improve your academic achievement in the future?

O Yes O No O Sometimes

Survey Results

• Results of Dimension One: The Use of Artificial Intelligence Tools in Learning

Results of Dimension One: The Use of Artificial Intelligence Tools in Learning

Table (1):

NO.	Question	Yes	No	Sometimes	Notes
1	Do you use AI tools such as simulations or interactive lessons in your learning?	16 (32%)	19 (38%)	15 (30%)	AI tools are generally used in learning technical subjects.
2	Do you find that AI helps you understand academic topics better?	14 (28%)	21 (42%)	15 (30%)	Interaction with AI enhances understanding of academic subjects.
3	Do you use AI programs to train on technical skills related to your specialty?	16 (32%)	20 (40%)	14 (28%)	AI programs specialize in training on technical skills.
4	Do you benefit from AI-supported smart learning platforms to improve your learning?	15 (30%)	16 (32%)	19 (38%)	Smart learning platforms help improve academic performance.
5	Do AI tools provide you with customized study materials based on your level of understanding?	20 (40%)	15 (30%)	15 (30%)	AI allows customization of study materials based on understanding.
6	Do you find that using AI helps accelerate your learning process?	18 (36%)	18 (36%)	14 (28%)	AI significantly helps accelerate the learning process.
7	Do you use AI applications to improve your skills in programming or mathematics?	15 (30%)	21 (42%)	14 (28%)	AI applications help develop academic skills.

8	Do AI tools provide you with direct interaction with academic subjects?	12 (24%)	18 (36%)	20 (40%)	Smart tools provide better direct interaction with subjects.
9	Do you find that AI helps you review academic materials in more diverse ways?	21 (42%)	16 (32%)	13 (26%)	Reviewing materials became more diverse using AI.
10	Do you use AI tools to solve complex technical problems you face during study?	20 (40%)	13 (26%)	17 (34%)	AI is used to solve complex technical problems.
11	Does AI help schedule study and revision times based on performance evaluation?	19 (38%)	15 (30%)	16 (32%)	AI helps schedule revision times based on performance.
12	Do you use AI tools to learn languages or advanced technical terms?	15 (30%)	13 (26%)	22 (44%)	AI tools support learning languages and technical terms.
13	Do you find that AI provides innovative solutions in your field of study?	16 (32%)	16 (32%)	18 (36%)	AI offers innovative solutions in various study areas.
14	Do you use AI to acquire new skills related to future technologies?	19 (38%)	17 (34%)	14 (28%)	AI enhances the acquisition of future-tech related skills.
15	Do you find that using AI makes learning more enjoyable and motivating?	21 (42%)	15 (30%)	14 (28%)	AI makes learning more enjoyable and motivating.

Commentary on the Table (1):

This survey clearly reflects the impact of artificial intelligence (AI) tools on improving the academic competence of students at the Faculty of Information Technology, Sirte University. From the analysis of the results, it was found that 32% of students regularly use AI tools such as simulations and interactive lessons, while 38% indicated that they do not use these tools consistently. Meanwhile, 30% of students reported using them occasionally, reflecting a

variation in engagement with this technology. Regarding the impact of AI on understanding academic subjects, 28% of students stated that AI significantly helps them understand their courses better, whereas 42% believe it does not have a major impact, and 30% said it helps them sometimes. This indicates that the effect of AI varies among students. In terms of improving technical skills, the survey showed that 32% of students use AI programs to train on technical skills specific to their field, while 40% do not use these programs, and 28% use them occasionally. These results highlight the need to encourage more students to utilize such tools. Furthermore, 42% of students acknowledged that AI supports diverse methods of reviewing study material, while 32% saw no significant impact, and 26% said it helps occasionally. The results also showed that 38% of students believe AI contributes to scheduling study and revision sessions based on their performance, while 30% disagreed, and 32% said it happens sometimes. From this, we can conclude that AI has a positive impact on improving university education, though the level of impact varies among students. There is a clear need for increased awareness and training to boost the use of these tools among students, which would contribute to enhancing academic competence and achieving better academic outcomes.

Dimension Two Results: The impact of Artificial Intelligence on Academic Achievement:

Table (2):

No.	Question	Yes	No	Sometimes	Key Observations
1	Do you feel that using AI tools has helped improve your academic results?	30 (60%)	10 (20%)	10 (20%)	Most students felt improvement due to AI.
2	Have you noticed an improvement in your academic performance thanks to AI technologies in your learning?	28 (56%)	12 (24%)	10 (20%)	General improvement observed.
3	Has AI helped you understand subjects that you found difficult?	23 (64%)	8 (64%)	10 (20%)	AI aided in understanding tough subjects.
4	Has using AI	35	6	9	Increased motivation

	increased your motivation to study and review?	(70%)	(12%)	(18%)	through AI.
5	Has AI helped you achieve better results in tests and exams?	33 (66%)	7 (14%)	10 (20%)	Noticeable improvement in exam results.
6	Does AI enhance your ability to grasp academic concepts faster?	31 (62%)	8 (16%)	11 (22%)	Faster comprehension of concepts.
7	Do you find that AI helps you stay focused while studying?	27 (58%)	10 (20%)	11 (22%)	AI enhanced study focus.
8	Does AI provide you with new ways to measure your academic progress?	27 (54%)	12 (24%)	11 (22%)	New methods for academic assessment.
9	Have you noticed an improvement in your practical or theoretical skills due to AI?	30 (60%)	8 (16%)	12 (24%)	Clear improvement in skills.
10	Has AI helped you manage your study time better?	32 (64%)	6 (12%)	12 (24%)	More effective time management.
11	Are AI-powered tools more effective in helping you review than traditional methods?	28 (56%)	12 (24%)	10 (20%)	AI tools proved more effective.
12	Has AI usage deepened your understanding of concepts in your	34 (68%)	8 (16%)	8 (16%)	Improved conceptual understanding.

	field?				
13	Does AI positively affect your academic achievement compared to students who don't use it?	30 (60%)	9 (18%)	11 (22%)	Better academic achievement noted.
14	Has AI helped you improve in academic areas where you previously struggled?	31 (62%)	7 (14%)	12 (24%)	Notable improvement in difficult subjects.
15	Do you believe AI can enhance your academic performance in the future?	33 (66%)	6 (12%)	11 (22%)	Students believe AI will boost future performance.

Commentary on the Table(2)

The table illustrates that the majority of students who participated in the study feel that the use of artificial intelligence (AI) tools has significantly contributed to the improvement of their academic performance. 60% of the students reported noticing an enhancement in their academic performance thanks to AI technologies. Moreover, the results show that 64% of students found AI helpful in understanding academic subjects they previously found difficult. The data further confirmed that AI contributed to increasing students' motivation to study, with 70% of participants stating that using these technologies made them more motivated to study and review. A significant portion of the students (64%) also confirmed that they were able to manage their study time more effectively using AI, compared to traditional methods. The findings also demonstrate that AI has helped enhance both practical and theoretical skills among students, highlighting the strong effectiveness of these tools in improving academic achievement. Regarding the comparison with students who do not use AI technologies, 60% of respondents believe that AI contributes positively to raising their academic performance levels. In conclusion, AI appears to have a substantial impact on improving the academic performance of students at the Faculty of Information Technology at Sirte University. It is expected that AI will continue to offer further benefits in the future, especially if its use is expanded more widely across educational settings.

Research Findings:

The Use of Artificial Intelligence Tools in Learning:

The results showed that 38% of students do not use AI tools in their learning, while 32% use them regularly, and 30% use them occasionally.

1. Improved Academic Understanding: 42% of students confirmed that AI helps them better understand academic subjects, while 30% reported that it enhances their understanding occasionally.

2. Improvement in Test Results: 66% of students observed an improvement in their academic performance due to the use of AI, particularly in tests and examinations.

3. Impact on Conceptual Understanding: 62% of students stated that AI helps them grasp academic concepts more quickly and effectively.

4. Motivation for Studying and Reviewing: 70% of students confirmed that AI helped increase their motivation to study and review course materials.

5. Improvement in Practical Skills: 60% of students reported an improvement in their practical and theoretical skills as a result of using AI in their learning.

Research Recommendations:

1. Curriculum Development: Update academic curricula to include artificial intelligence topics such as machine learning and data analysis in order to enhance students' technical skills.

2. Enhancing Digital Infrastructure: Provide advanced infrastructure to support AI and machine learning applications, including powerful hardware and high-speed networks.

3. Supporting Student Research Projects: Support student research related to artificial intelligence and provide research funding to encourage innovation and creativity.

4. Raising Awareness of AI Ethics: Educating students about the ethical implications of AI usage contributes to the development of safe and responsible technologies.

5. Providing AI-Powered Interactive Learning Environments: Creating AI-supported interactive environments enhances hands-on learning and skills development, thereby promoting experiential learning.

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