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The Learning Gap between Classroom Education and Artificial Intelligence-Based Education in Curriculum Design among Students of the College of Physical Education and Sports Sciences from the Students' Perspective

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Abstract

The present study aimed to identify the learning gap between classroom-based education and artificial intelligence (AI)-based education among students of Colleges of Physical Education and Sports Sciences. It also sought to determine the effectiveness of classroom education and AI-based education in reducing the learning gap among these students. The research problem addressed the following questions: Are there statistically significant differences in the learning gap between students who learn through traditional classroom education and those who learn through AI-based education in Colleges of Physical Education and Sports Sciences? What is the nature of the learning gap between classroom education and AI-based education among these students? Which educational approach is more effective in reducing the learning gap? The results of the study indicated that there is a learning gap between classroom education and AI-based education among students of Colleges of Physical Education and Sports Sciences. The findings also revealed that the use of artificial intelligence technologies contributes to improving the quality of the educational process and enhancing the design of educational curricula. Furthermore, AI helps address individual differences among students by providing learning content that aligns with their needs and learning abilities. Based on these findings, the researcher recommends enhancing the integration of artificial intelligence in the educational process. AI technologies can provide advanced analytical tools that assist teachers in monitoring students' progress and diagnosing learning difficulties more accurately. In addition, several challenges still hinder the effective implementation of AI in education, which requires further efforts to overcome these obstacles and promote the successful integration of AI technologies in educational environments.

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Keywords: AI, education, educational curricula

Introduction

The educational process plays a major role in the development of countries because it constitutes the essential infrastructure for their progress. Recent advancements in information technology, particularly in the field of artificial intelligence (AI), have further contributed to this development.AIIt was a major challenge to the educational process, as it integrated many technologies and applications into one gap, which is artificial intelligence, thus highlighting many electronic educational platforms and creating electronic educational classroom commands.Despite the numerous contributions of artificial intelligence (AI) to the development of the educational process, its application in curriculum design still faces a clear disparity between available capabilities and the level of actual implementation within educational institutions. This disparity is particularly evident in faculties of physical education and sports science, where teachers' and students' experience with AI technologies varies, leading to a learning gap characterized by the inadequate integration of these technologies in curriculum design to align with student needs and modern learning requirements.. Educational systems have undergone fundamental transformations in recent decades as a result of the rapid development of information and communication technologies. This has directly impacted teaching methods and learning approaches, with traditional classroom-based rote learning no longer the dominant model. Instead, modern educational models have emerged that rely on interaction, personalization, and self-directed learning, most notably AI-based education. Artificial intelligence is considered one of the most important outcomes of the Fourth Industrial Revolution, given its ability to analyze educational data, adapt content to learners' characteristics, and provide immediate feedback that contributes to improving learning outcomes. (Luckin, 2016).In this context, the concept of the learning gap has become one of the contemporary educational concepts that attracts the attention of researchers, as it refers to the differences between what learners are expected to achieve in terms of learning outcomes and what is actually achieved in the educational reality, as a result of differences in educational environments, teaching methods, or the technological tools used. ((OECD, 2020).This gap becomes even more apparent when comparing traditional classroom education, which relies heavily on direct instruction and classroom control, with AI-based education, which provides flexible, interactive, and learner-centered learning environments.. Artificial intelligence contributesAI is reshaping physical education by offering innovative teaching methods, personalized training programs, and immersive learning environments. Artificial intelligence technologies enable the design of individualized training programs tailored to each student's needs, enhancing learning outcomes and physical performance. AI also provides real-time feedback, dynamic adjustments to training plans, and monitoring of students' overall

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health. (Cao & Yu, 2025; Zhou et al., 2024) .. The integration of virtual reality (VR) technologies with artificial intelligence enhances the learning experience in physical education through interactive training environments, allowing the practice of complex athletic skills in controlled realistic conditions. Artificial intelligence tools also help to accurately assess athletic performance, contributing to the design of more effective training plans (Zhang, 2021; Deng et al., 2025).This issue is of particular importance in faculties of physical education and sports science, given the nature of their programs which combine theoretical, skill-based, and motor aspects, and require modern teaching methods capable of taking into account the individual differences between students, improving skill performance, and enhancing cognitive understanding of sports movements and skills..A study emerged(Zawacki-Richter, O., Marín, VI, Bond, M., & Gou, 2019) The use of artificial intelligence technologies in sports education contributes to improving motor learning, developing basic skills, and raising the level of motivation towards learning compared to traditional classroom education..Despite these capabilities, classroom-based teaching remains the dominant model in many physical education and sports science faculties, while artificial intelligence is used in a limited or unstructured manner. This raises questions about the extent of the learning gap between the two models and which is more effective in achieving the desired learning outcomes. Furthermore, comparative studies in this field, particularly within the Arab context, remain limited. This necessitates further scientific research to highlight this gap and provide indicators that can be used to develop educational programs. Based on the above, this study comes as a scientific attempt to compare the learning gap between classroom education and AI-based education among students of physical education and sports science colleges, contributing to enriching educational literature and providing results that can support educational decision-makers in adopting more effective educational models..The research problem, however, sought to answer the following questions: 1.Are there statistically significant differences in the learning gap between students who learn through classroom instruction and students who learn through AI-based instruction in faculties of physical education and sports science? 2.What is the nature of the learning gap between classroom education and AI-based education among students of physical education and sports science colleges? 3. WhichWhich of the two educational models is more effective in reducing the learning gap among students in faculties of physical education and sports science? The research objectives were: 1. Identifying the learning gap between classroom education and AI-based education among students of physical education and sports science colleges.2. IdentifyingThe effectiveness of classroom teaching and AI-based education in reducing the learning gap among students of physical education and sports science colleges.

Learning gap: The concept of the learning gapLearning Gap is one of the modern educational concepts thatRecently appearedWith developmentsystemsEducation and the differences in learning environments. This refers to the difference between the expected level of

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learning.Achievement of its realizationLearners have different learning objectives and levels of understanding.real or actualWhat the learner achieves in the educational reality as a result of differences in educational conditions, teaching methods, or technological capabilities used in education.. The organization has defined ((OECD, 2020) The learning gap:The difference between expected learning outcomes for learners and the actual level of achievement they attain is a result of differences in educational environments or available learning opportunities.As it indicates(Luckin, 2016)However, the learning gap may arise as a result of differences in teaching methods or the use of educational technology, as diverse learning environments lead to disparities in the acquisition of knowledge and skills among learners..

In light of What the definitions or concepts of the learning gap have brought forth ifThe learning gap in this study can be defined as:

Disparities in levels Learning outcomes between learners result The difference in The teaching style used, whether He was Traditional classroom education or AI-based education.

Previous studies:

- study(Sheri-Lynn Skwarchuk, Heather Douglas, 2025) The researchers used the descriptive method in the research procedures, and the sample size used in the research was 471 students. The research results wereSuch as the improved questionnaire in This study is essential to assess how generative artificial intelligence impacts higher education and how it can be used within it..maybe The use of these tools should contribute to promoting positive practices in the application of generative artificial intelligence. And raised Level of educational standards.
- study**(Chan & Zhou, 2023)**The researchers usedA quantitative investigative approach (questionnaire design) was used to develop an instrument that measures the variables of knowledge, value, and cost associated with its use.AIAs for the research sample, whereParticipate in the study405 university students from higher education institutions.Statistical methods usedFor confirmatory factor analysis(Confirmatory Factor Analysis) With correlation coefficientsPearson's correlation between variablesSearch resultsThere is a strong positive correlation between the perceived value ofGenAI and intent of use.

There is a weak negative correlation between perceived cost and intent to useGenAIandThe results indicate that students who see greater value in artificial intelligence are more likely to use it in learning, while some believe that the associated costs reduce their intention. The results indicate that students who see greater value in artificial intelligence are more likely to use it in learning, while some believe that the associated costs reduce their intention..

- study**(Ahmed AlAnzi et al, 2026)**The researcher adopted the descriptive method to achieve the study's objectives. The research sample consisted of male and female teachers and students from Hal School, totaling 384 individuals. The research results were as follows: Results Artificial intelligence contributes to facilitating the monitoring of students' progress and improving performance.Key challenges include weak technological infrastructure and limited resources. Recommendations include

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teacher training and developing educational infrastructure..

- **(Kashive, N., Powale, L., & Kashive, K., 2021)** A study confirmed thatUnderstanding users' perceptions of the role of artificial intelligence in enhancing personalized learning, including the personal learning profile and learning network. Personality, and studying its impact on ease of use, effectiveness, and satisfaction with e-learning.,The study also relied on structural equation modeling to collect data from students and professionals. The results revealed the effectiveness of artificial intelligence applications and their suitability for information exchange among learners, and confirmed that AI-supported e-learning contributes to developing curriculum content and creating new teaching methods that enhance the effectiveness of the educational process.
- **study (Sanusi, IT, Olaleye, SA, Agbo, FJ, 2022)** To explore the competencies necessary for high school students to masterUsemArtificial intelligence, with data analysis 605 Nigerian secondary school students, as the study emphasized, stressed the importance of collaboration and teamwork among students to promote artificial intelligence literacy and keep pace with technological developments. The study concluded that educational competence is not limited to cognitive aspects, but extends to include skills and personal attributes that are appropriate to the nature of the course and the development of suitable educational content..
- **study(Jaawani, Afaf, and Al-Kaabi, Sulaiman, 2024)**I confirmed to AThe conference will review artificial intelligence applications in education and analyze their educational impact, while identifying the challenges facing their implementation in the educational process.The results showed that artificial intelligence applications, despite their great potential, face obstacles that limit their effectiveness, and The most prominent of them Weak internet networks and a lack of experience among some teachers in using artificial intelligence technologies, Some applications conflict with values community.

Similarities and differences between previous studies and how to benefit from them:

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Similarities between previous studies

1. Studies agree on the importance of employing artificial intelligence in education. As most studies, such as the study, have confirmedChan & Zhou (2023) and Kashive et al. (2021) Artificial intelligence contributes to the development of the educational process and the improvement of the learning experience..
2. Using descriptive or quantitative methods in studies Most previous studies have relied on the descriptive or survey method to analyze students' and teachers' opinions on the use of artificial intelligence in education..
3. Focus on the role of artificial intelligence in developing educational curricula Studies have shown that artificial intelligence helps in designing flexible educational content that is compatible with learners' needs..
4. Studies confirm the importance of training teachers in modern technologies.

Studies have shown that the success of implementing artificial intelligence in education depends largely on the training of teachers and the development of their digital skills..

5. Focusing on the role of technology in improving learning outcomes Most studies have indicated that the use of modern technologies contributes to improving academic achievement and enhancing interaction within the educational environment..

Differences between previous studies

1. Differences in study objectives Some studies have focused on students' attitudes towards the use of artificial intelligence, such as the studyChan & Zhou (2023), while other studies have focused on the impact of artificial intelligence on the development of the educational process, such as the study by Kashive et al. (2021).
2. ADifferences in research samples The study samples varied betweenUniversity students-High school students teachers,While the current study focused on students of faculties of physical education and sports science.
3. Differences in educational environments for studies Some studies have been conducted in different educational settings such as:

Higher education-school education-e-learning While the current study focuses on the university environment in physical education colleges.

4. Differences in data collection tools

The studies used a variety of tools such as: questionnaire-Structural equation modeling-Educational data analysis The current study used a learning gap scale with a five-point Likert scale..

Benefit from previous studies

1. Building the theoretical framework of the study

Previous studies have helped to clarify the concept of artificial intelligence in education and the learning gap..

2. Defining the research problem and its objectives

The results of previous studies contributed to identifying the research problem related to the gap between classroom education and AI-based education..

3.Choosing the right study method

The researcher adopted the descriptive approach based on numerous previous studies that used this method in studying educational phenomena..

4.Developing the measurement tool used in the study

5.Some of the measures used in previous studies were utilized when constructing the learning gap scale..

6.Interpretation of the results of the current study

Previous studies helped in interpreting the results and comparing them with the results of other research in the field of artificial intelligence and education..

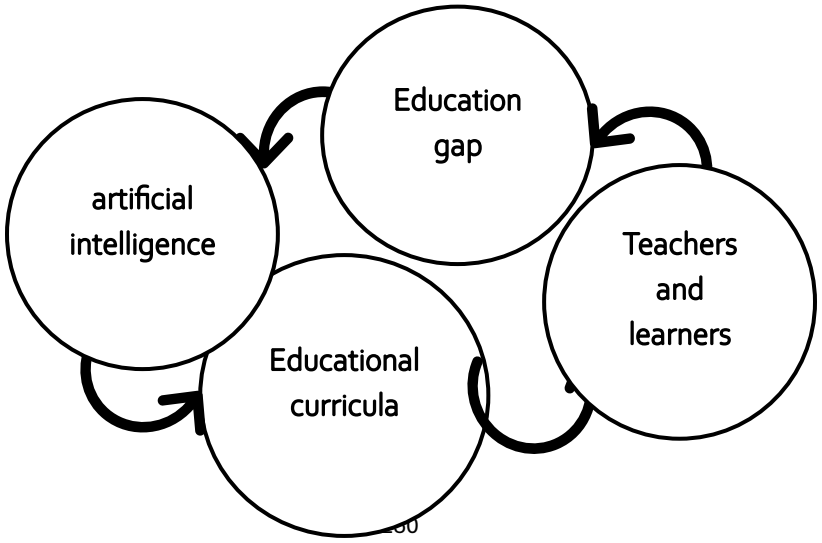

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Figure 1. *The diagram illustrates the interactive relationship between artificial intelligence, curriculum design, and the roles of teachers and learners in shaping the learning gap*

Search procedures

Firstly:-Research Methodology:I dependResearcher inthe studyTo useThe descriptive approach; because it suits the nature ofResearch objectives

Research community: Students of the Faculty of Physical Education and Sports Sciences for the academic year 2025-2026

Third: Research sample: The researcher selected the research sample using the methodSimple Random ,The research sample consisted of'studentsAll:Physical Education and Sports ScienceAt the University of BaghdadFor the academic year2025-2026Because they were suitable for the nature and objectives of the study. The total sample size was [missing information].For the community (400) student The basic sample (200) students asA pilot sample consisting of (50) students, used for the purpose of verifyingPhrases andclarityAnd he understoodTool paragraphs and property calculationPsychometric:she has,As shown in the table below.

Table 1. *shows the research population, the pilot study, and the research sample*

Research community	Exploratory experiment	Percentage	Research sample	Percentage
400	50	12.5%	200	50%

Statistical methods

The researcher usedfrom Statistical Portfolio CommandsSuitable for natureSearchIts objectives for analysisaccuracyData, usingThis is amazingStatistical portfolio(SPSS), and these methods were represented by the following:

arithmetic mean (Mean).-standard deviation(Standard Deviation).-standard error(Standard Error). Frequencies and percentages. Cronbach's alpha stability coefficient(Cronbach Alpha). Pearson correlation coefficient(Pearson Correlation). K-Square Test(Chi-Square).

Exploratory experiment

The researcher distributed the scale form, consisting of 15 items, to a sample from outside the research. The total number is 50, representing 12.5%, along with the support team (Appendix 4) to determine the following:

1. The ease or difficulty of the paragraphs.
2. Time taken to answer the paragraphs.
3. The appropriate tools for filling out the form.

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4. The mechanism for distributing the form.

The scientific basis of the scale

that scaleThe AI-led learning gap in curriculum design among teachers and studentsThe researchers used the following methods: (a form to determine the validity of paragraphs from Arabic and foreign sources, a data entry form, and statistical methods specific to the study). DeterminedgaugeThe AI-led learning gap in curriculum design among teachers and students By conducting a survey of previous studiesStudy(Ahmed Ghanem, 2026)If the scale consists of (15 paragraph) The two axes are: the first axis (10 paragraphs) and the second axis (5 paragraphs).

1- The experts agree

The scale was presented to teachers and specialists to determine its validity and suitability for the study, and the scale was adopted, as shown in argument number 2.

Table 2. *shows the validity of the scale items according to the experts*

The AI-led learning gap in curriculum design among teachers and students							
Paragraphs	It is suitable	%	Not suitable	%	chi value Calculated	tabulated value of ka	Significance
1	11	100%	0	0%	11		
2	11	100%	0	0%	11		
3	11	100%	0	0%	11		
4	11	100%	0	0%	11		
5	11	100%	0	0%	11		
6	10	90.90%	1	9.1%	7.36	3.84	Moral
7	10	90.90	1	9.1%	7.36		
8	9	81.80%	2	18.2%	4.45		
9	10	100%	1	9.1%	7.36		
10	11	100%	0	0%	11		
11	11	100%	0	0%	11		
12	2	18.2%	9	81.80%	7.36		Immaterial

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13	4	36.36%	7	63%	7.36
14	1	9.1%	10	90%	7.36
15	5	45.45%	6	54.54%	5.45

2 – **Scale Likert Scale The quintet**

The researcher used a five-point scale Likert Scale To determine the response of the study sample's estimates, the overall scale scores and their range were appropriately defined, and the arithmetic means were calculated for the five categories according to the scale.Likert ScaleAs shown in Table 3, the scale scores.

Response Options.	Very large	large	Medium	few	Very few
alternatives					
the weight	5	4	3	2	1

3 - **the validity of internal consistency**

To ensure the validity of the research instrument items, the researcher calculated the correlation coefficient between each score and one of the three questionnaire axes, and the total questionnaire score, using a pilot sample of 50 students from the overall study population. This is shown in Table (3).

Table 3. *shows the internal consistency validity of the scale*

Axes	**scale**	**Number of phrases**	**Stability level**
the first	The role of integrating artificial intelligence	10	0.84
the second	The most prominent challenges and obstacles facing teachers when integrating artificial intelligence	5	0.87
overall scale score			0.85

It showsFrom Table (3), the values of the reliability coefficient(Cronbach's Alpha)ForAxesThe three For the scaleIt came in at a high level, ranging between (0.84-0.87),All of them are statistically significant at a significance level of 0.05, as they reachedThe overall reliability coefficient of the scale (0.85These are values that exceed the scientifically acceptable limit (0.70)

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according to the standardNunnally (1978),It becomes clear thatscaleEnjoyWith a high degree of internal consistency and suitability for field application..

Results

Table 4. *The arithmetic mean and standard deviation are shown. The AI-led learning gap in curriculum design among teachers and students*

Paragraph	arithmetic mean	standard deviation	standard error
1	4.135	0.959	0.067
2	4,240	0.857	0.060
3	4.010	0.961	0.067
4	3.990	0.997	0.070
5	3.815	0.977	0.069
6	3.840	1.004	0.071
7	3.875	1.002	0.0706
8	3.770	1.030	0.072
9	3.820	1.083	0.076
10	3.845	1.070	0.075
11	3.840	1.004	0.071
12	3.875	1.002	0.070
13	3.770	1.030	0.072
14	3.820	1.083	0.076
15	4.010	0.961	0.067

Table 5. *shows the results of the arithmetic means, percentages, and frequencies for each item on the first axis scale. The role of artificial intelligence (sample = 200)*

T	Paragraphs	Very large	large	Medium	few	Very few	arithmetic mean	standard deviation	Ranks
1	Sample	94	47	40	14	5	4.135	0.959	2

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	Integrating artificial intelligence into curriculum design contributes to improving the quality of the educational process.	200 %	47%	23.5%	20%	7%	2.5%			
2	Artificial intelligence helps develop educational content that is more relevant to students' needs.	Sample 200 %	95 47.5%	69 34.5%	26 13%	9 4.5%	1 0.5%	4,240	0.857	1
3	The use of artificial intelligence contributes to enhancing interaction between teacher and student within the classroom.	Sample 200 %	78 39%	61 30.5%	42 21%	16 8%	3 1.5%	4.010	0.961	3
4	. Artificial intelligence can support the development of	Sample 200 %	81 40.5%	56 28%	44 44%	18 9%	1 0.5%	3.990	0.997	4
5	Integrating artificial intelligence contributes to raising the	Sample 200 %	62 31%	58 29%	57 28.5%	19 9.5%	4 2%	3.815	0.977	9
6	Artificial intelligence makes it easier	Sample	67	56	53	21	3	3.840	1.004	8

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	to accurately monitor students' progress.	200 %	33.5%	28%	26.5%	10.5%	1.5%			
7	Artificial intelligence enables the design of more diverse and flexible learning activities.	Sample 200 %	70 35%	51 25.5%	50 25%	19 9.5%	10 5%	3.875	1.002	5
8	Artificial intelligence helps to take into account the individual differences	Sample 200 %	63 31.5%	57 28.5%	45 22.5%	25 12.5%	10 5%	3.770	1.030	10
9	Artificial intelligence contributes to reducing the teaching load on the teacher.	Sample 200 %	71 35%	53 26.5%	36 18%	29 14.5%	11 5.5%	3.820	1.083	7
10	Artificial intelligence provides analytical tools that help in	Sample 200 %	73 36.5%	51 25.5%	41 20.5%	21 10.5%	14 7%	3.845	1.070	6
Predicted average		3.934								
Standard deviation		0.736								
standard error		0.052								

Table No. (5) of the AI-based Learning Gap Scale in Curriculum Design for Teachers and Students. We note that the arithmetic means of the scale items All the items have high-quality means and standard deviations. The weighted mean for the entire scale is 3.934, and the standard

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deviation is 0.736, indicating that all items on the scale have very good values. The items are ranked from highest to lowest based on their means.

Second paragraph:- Artificial intelligence helps develop educational content that is more relevant to students' needs. If it comes in first place I obtained the highest arithmetic mean if it reached 4.240 and its standard deviation reached 0.857.The researcher attributes this to the fact that AI-assisted education fulfills learners' desires in terms of developing their educational process and enhances students' achievement of educational goals, as it aligns with the study.(Luckin, 2016) Artificial intelligence can contribute to personalizing and adapting educational content based on each learner's needs, thus enhancing learning effectiveness and increasing the achievement of educational goals. The Organisation for Economic Co-operation and Development (OECD) has also confirmed this.He also mentioned((OECD, 2020) The use of artificial intelligence in education enables the analysis of educational data and the delivery of personalized learning experiences, which enhances learner satisfaction and contributes to improving learning outcomes.From these studies and the arithmetic means of the paragraph, we interpret that the educational process supported by artificial intelligence provides educational environments capable of balancing individual differences among learners and achieving their educational goals more efficiently compared to other methods of teaching.**ParagraphFirst: Integrating artificial intelligence into curriculum design contributes to improving the quality of the educational process.**

It obtained a mean of 4.135 and a standard deviation of 0.959, ranking second, indicatingThis is based on existencedealamarkedaAmong the members of the research sample regardingThe importance and roles of intelligenceArtificial intelligence in improving curricula and teaching methodsHe confirms The researcher indicated that designing educational curricula with the help of artificial intelligence improves teachers' methods in the educational process, as this technology facilitates the creation of a learning environment for teachers that meets the needs of learners.(Holmes, W., Bialik, M., & Fadel, C., 2019)He emphasized that employing artificial intelligence in curriculum design allows for the customization of educational content according to students' needs, thus contributing to enhancing the quality of the educational process.(Chen, L., Xie, H., Zou, D., & Xie, H., 2020) The integration of artificial intelligence in education is not limited to interaction alone, but extends to improving curriculum design and keeping pace with individual differences..It also promotes (Luckin, 2016)and(Woolf, BP, 2020)Regarding the ability of artificial intelligence to support teachers in developing more flexible curricula that are responsive to learners' needs.. Third paragraph The use of artificial intelligence contributes to enhancing interaction between teacher and student within the classroom. It obtained a mean score of 4.010 and a standard deviation of 0.961, ranking third.The researcher believes that the success

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of the educational process primarily depends on communication between the teacher and the learner and their achievement of the objectives. This depends on the teacher's role in developing curricula, methods, and approaches, and the learner's role in creating a suitable learning environment.(Zawacki-Richter, O., Marín, VI, Bond, M., & Gou, 2019) The application of artificial intelligence in higher education leads to improved interaction and academic communication, which positively impacts the achievement of educational goals..He mentioned(Luckin, 2016) Artificial intelligence does not aim to replace the role of the teacher, but rather to enhance it by providing tools that help them understand the needs of learners and stimulate positive interaction within the educational environment.. ParagraphFourth: Artificial intelligence can support the development of innovative teaching strategies..I obtained a mean of 3.990 and a standard deviation of 0.997. This indicates a good degree of agreement among the research sample regarding the role of artificial intelligence in renewing teaching methods and strategies.,The researcher attributes this result to artificial intelligence.He presentsTeachers have analytical and predictive tools that help them develop strategies.theteachingtheData-based,Which works on ConsiderationIndividual differences betweenstudentsActive learning styles, such as adaptive learning, problem-based learning, and blended learning, are supported. Artificial intelligence also contributes to enhancing capabilities.teacherChoosing appropriate teaching methods and techniques, in line with curriculum objectives.The educational processModern, male(Karsenti, 2019) It affirms that artificial intelligence contributes to the development of innovative teaching strategies based on interaction and personalization, and enhances the teacher's role as a learning designer.And he mentioned(Feng & Law, 2021)The study found that artificial intelligence applications are bringing about a qualitative shift in teaching strategies, contributing to improving the quality of the educational process. In paragraph five, the seventh rank was indicated by the statement that artificial intelligence enables the design of more diverse and flexible educational activities, achieving a mean score.(3.785) and a standard deviation of (1.002), indicatingThis topresence of a degreefromAgreement of moderate to high levels by individualsSamplearoundAdwarArtificial intelligence is diversifying educational activities and blending them according to the needs of learners.The researcher attributes this result to the fact that artificial intelligence applications contribute to providing diverse educational activities (interactive, digital, individual, and group), offering teachers greater flexibility in creating activities that cater to individual learners' differences. They also allow learners to choose activities that align with their abilities and interests, thus enhancing learning capacity and increasing motivation. This finding is consistent with Holmes et al. (2019), who indicated that artificial intelligence supports the design of flexible and adaptive learning activities that improve learner engagement within the classroom environment. Luckin (2018) also confirmed that artificial intelligence helps build learning environments rich in diverse activities that consider different

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learning styles. A study by Feng & Law (2021) indicated that employing artificial intelligence in education enables the development of adaptive learning activities that contribute to enhancing learner interaction and independence. Paragraph ten ranked sixth.Artificial intelligence provides analytical tools that aid in making better educational decisions. The study achieved a mean of 3.845 and a standard deviation of 1.070. The researcher attributes this result to the fact that AI applications provide teachers and educational administrators with the ability to analyze student performance data (grades, academic excellence, student participation), track their academic progress, and predict learning difficulties. This helps in making data-driven educational decisions, whether in modifying curricula or teaching methods, to positively impact and improve the educational process. Paragraph nine: It came in seventh placeArtificial intelligence contributes to reducing the teaching load on the teacher.The researcher obtained a mean of 3.820 and a standard deviation of 1.083. The researcher confirms that modern technologies, including artificial intelligence, have positive roles in the educational process by automating some teaching tasks such as preparing activities, correcting assignments, and analyzing student results. This allows teachers to dedicate more time and effort to the educational and interactive aspects of the classroom.Paragraph six: It came in eighth placeArtificial intelligence makes it easier to accurately monitor students' progress.If you obtained a mean of 3.840 and a standard deviation of 1.004, the fifth item ranked ninth.Integrating artificial intelligence contributes to raising the efficiency and professionalism of teachers.The arithmetic mean was 3.815 and the standard deviation was 0.977. Paragraph eight ranked tenth.Artificial intelligence helps to take into account the individual differences between learners. I obtained a mean score of 3.770 and a standard deviation of 1.030. The researcher attributes this result to the fact that artificial intelligence software relies on analyzing data about learners and their learning patterns. This highlights the provision of educational content, activities, methods, and teaching approaches that align with learners' abilities, aptitudes, and interests, and is consistent with the principle of considering individual differences, which is one of the modern educational foundations in designing any educational curriculum. This result is consistent with what he indicated. Luckin et al. (2016) demonstrated that artificial intelligence (AI) is an effective tool for personalizing learning according to each learner's characteristics, thus contributing to improved learning outcomes. Holmes et al. (2019) also confirmed that intelligent learning systems help support individual differences within the classroom by providing flexible and adaptive learning pathways. Furthermore, Zawacki-Richter et al. (2019) indicated that AI applications in higher education contribute to enhancing personalized learning, taking into account the individual differences among students.

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Table 6. *shows the main challenges and obstacles facing teachers when integrating artificial intelligence. Sample: 200*

T	Paragraphs		Very large	large	Medium	few	Very few	arithmetic mean	standard deviation	Ranks
1	**Strengthening partnerships between schools, universities, and research centers to develop innovative educational applications.**	**Sample** 200	**94**	**47**	**40**	**14**	**5**	4.115	0.959	2
		%	**47%**	**23.5 %**	**20%**	**7%**	**2.5%**			
2	**The need to provide specialized training programs for teachers on artificial intelligence**	**Sample** 200	**95**	**69**	**26**	**9**	**1**	4.132	0.857	1
		%	**47.5%**	**34.5 %**	**13%**	**4.5 %**	**0.5%**			
3	**Developing digital curricula that take into account the practical integration of artificial intelligence tools.**	**Sample** 200	**78**	**61**	**42**	**16**	**3**	4.011	0.961	3
		%	**39%**	**30.5 %**	**21%**	**8%**	**1.5%**			
4	**Organizing regular workshops and seminars to spread the culture of artificial intelligence among**	**Sample** 200	**81**	**56**	**44**	**18**	**1**	3.990	0.997	4
		%	**40.5%**	**28%**	**44%**	**9%**	**0.5%**			
5	**Allocating a separate budget to support the application of artificial intelligence in educational curricula**	**Sample**	62	**58**	**57**	**19**	**4**	3.815	0.977	5
Predicted average		3.4022								
standard deviation		0.9502								
standard error		0.115								

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From Table No. (6) For measuring the learning gap based on artificial intelligence in curriculum design for teachers and studentsThe focus is on the most prominent challenges and obstacles that teachers face when integrating artificial intelligence.

The arithmetic means of the scale items They all have high quality in terms of arithmetic means and standard deviation, if the weighted arithmetic mean of the scale as a whole reaches 3.4022The standard deviation for the scale as a whole was 09502This indicates that all items on the scale have very good values. The items were ranked according to their mean scores, from highest to lowest.

The second paragraph came in the first order:The need to provide specialized training programs for teachers on artificial intelligence received the highest average rating.4.With a score of 132 and a standard deviation of 0.857, providing training programs, workshops, and academic lectures on artificial intelligence technologies equips learners with the experience and knowledge necessary for their development, facilitates their effective use of these programs, and presents them to learners in the best possible way. The second-ranked program came in first place.Strengthening partnerships between schools, universities, and research centers to develop innovative educational applications, which received a mean of 4.115 and a standard deviation of 0.959, indicates that...High agreement among members of the research sample regardingimportancecooperationInstitutionsIn support of employmentTechnologies AI in the educational process,The researcher attributes this result to the fact thatcooperationEducationaland scientificAmong educational and research institutions, it contributes todevelopment (Experiences and knowledge)and providingenvironmentExperimental development of educational applications based onAI, which is reflectedWith positive development towardsImproving the quality of educational curriculaAnd showingModern teaching methods and techniquesIt contributes to meetingLearner requirements. AlsoThis collaboration allows forLinking theory with practical application, and enhancingthought andEducational development based on scientific research,This result is consistent with what he indicated. OECD (2021)Collaboration between educational institutions, universities, and research centers is a key factor in developing educational innovation based on smart technologies. UNESCO reports (2019) also confirmed that research partnerships contribute to accelerating the development of innovative educational applications and enhancing the effectiveness of using artificial intelligence in education. Holmes et al. (2019) indicated that innovation in AI-based education depends largely on collaboration between educational practitioners, researchers, and policymakers. The third point, ranked third, is: Developing digital curricula that practically integrate AI tools. The study obtained a mean of 4.011 and a standard deviation of 0.961, indicating a relatively high level of agreement among the research sample.,The researcher attributes this result to the digital curricula that employ Tools AI that It contributes to updating educational content and linking it.These technologies with applicationsThe process, and

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providingan environment withInteractive learning that is compatible withneedsModern education, which isIt aims atThe educational process, and this result is consistent with what he indicated.Holmes et al. (2019)Integrating artificial intelligence into digital curricula is a cornerstone of educational development, providing opportunities for adaptive and interactive learning. UNESCO (2019) also affirmed that developing AI-based digital curricula is a pivotal step towards improving the quality of education and keeping pace with digital transformations. The fourth item ranked fourth: organizing periodic workshops and seminars to spread the culture of artificial intelligence among teachers and students. The arithmetic mean for the item was 3.990 and the standard deviation was 0.997, indicating a good consensus on the importance of building cognitive and professional awareness of AI culture..This is explained by the successThese applications and technologies AI in education is not shortens Only on availability These requirements Rather, it requires Continuous and intensive development for teachers and learners, This knowledge provides themUnderstanding the mechanisms for employing them in a correct educational manner, and this result is supported by what the reports have confirmed.OECD (2021)Developing digital skills and disseminating an AI culture through continuous training is a prerequisite for ensuring the effective use of modern technologies in education. Karsenti (2019) also indicated that preparing and training teachers in AI technologies contributes to improving their teaching practices and enhancing their receptiveness to educational innovation. The fifth point, ranked fifth, was: allocating a separate budget to support the application of AI in educational curricula. Its arithmetic mean was 3.815 and its standard deviation was 0.997, reflecting a high degree of agreement.Average and somewhat trending upwardsThe researcher attributes this result to the fact that learners It may not They see The financial and administrative aspects directly impacted the process, despite their significant importance in supporting sustainability.AI in Education,This result is consistent with what he indicated.OECD (2020)While providing the necessary funding and technological infrastructure is crucial for the success of AI initiatives in education, its impact is often indirect from the learners' perspective. UNESCO (2021) also emphasized that the lack of sustained financial support can be a major obstacle to the mainstreaming of AI applications in educational curricula.

Conclusions

The study reached a number of conclusions and it:

thereA learning gap exists between classroom education and AI-based education among students in faculties of physical education and sports science..ContributesUseatArtificial intelligence technologies in improvingQualityQuality of the educational process and development of educational curriculum design.ContributesArtificial intelligence in taking into account

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individual differences betweenstudentsBy providing educational contentharmoniousWith needsstudents.EnhancesArtificial intelligence analytical toolsminute The teacher meetsIn monitoring student progress and diagnosing learning difficulties more accuratelyThere is a groupFactorsAmong the challenges facingEmpowerment and employmentArtificial intelligence in education, among the most prominent she Inadequate training for some teachers and few Skills and Technical capabilities.

Recommendations

In light of the study's findings, the researcher recommends the following:

activationWorkshops, courses and programmesTraining for teachers and learnersHelpIn developmentSkillsIn the use of artificial intelligence technologies in education.SupportEmploying artificial intelligence in the educational process to contribute to improvementandAchieving educational goals and taking into account individual differences betweenstudents.mixArtificial intelligence applications inInnovationRandDesigning and developing educational curricula throughProgramming and preparationModern digital curricula that support interactive and adaptive learningandDeveloping the professional competence of teachers in the field of artificial intelligence through organizing specialized training courses and workshops..Seeking helpArtificial intelligence technologies in supporting decision-makingand developmentEducational decisions through data analysisStudents and their learningDiagnosing learning difficulties. Strengthening cooperationSubscriberBetween educational institutions, universities and research centersAndScientific؛To supportinnovation educationBased onApplicationsFor artificial intelligence and providing supportTechnical, programming, and engineeringNecessary.

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