

Research Article

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The Impact of Artificial Intelligence on Quality Assurance in Education: Academic Achievement and Social Skills Dimensions

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Abstract

Background/purpose. This study examined the impact of Artificial Intelligence on quality assurance in education, focusing on academic achievement and social skills in schools in Jordan.

Materials/methods. A descriptive-analytical approach was employed with a sample of 62 teachers, selected at random, to represent 16.67% of the target population. The data were collected using a questionnaire, and the average scale score ranged from 2.6 to 3.39.

Results. The consistency of teacher responses was found to be high. With an average score of 3.50, AI was found to support students' academic achievement significantly. However, as evidenced by a lower average of 2.58, AI had a secondary role in bolstering students' social skills. There were no discernible gender differences. Compared to their less experienced peers, teachers with five to ten years of experience had more positive opinions about AI's contribution to academic success. Additionally, there were disparities by educational level, with secondary school teachers holding a more positive view of AI than kindergarten teachers in both the social and academic domains.

Conclusion. The study highlights how AI can enhance educational quality and the importance of all-encompassing, human-centered approaches that foster students' social development and academic success.

1. Introduction

Education is not an exception to the profound changes brought about by the quick development of Artificial Intelligence (AI). Machine learning algorithms and intelligent systems are just two examples of AI technologies being incorporated into classrooms to improve educational quality, personalise learning, and enhance instructional delivery (Chen, Chen, & Lin, 2020; Forero-Corba & Negre Bennasar, 2024). AI has been widely marketed in recent years as a strategic tool for quality assurance and educational innovation, particularly in areas seeking to update their educational systems and prepare students for the demands of the twenty-first century (Tlili et al., 2024; Gignac & Szodorai, 2024).

AI's effects on students' social and emotional development are still poorly understood, although many studies have examined its academic advantages, including higher engagement, differentiated instruction, and enhanced academic performance (Youssef et al., 2024; Shahzad et al., 2024). This is a significant gap because education should foster critical social skills, including communication, empathy, teamwork, and cognitive development (Daley et al., 2025; Collie et al., 2024). In the early stages of education, when human interaction is fundamental to a child's development, the social component of learning becomes even more critical (Naima, 2020).

As part of larger initiatives for digital transformation, AI is being progressively implemented in Jordan's educational environments. However, little is known about how educators view its educational and socio-emotional impact in this particular socio-cultural context. The current literature either focuses on general technological integration or is primarily based on university-level samples in more developed contexts, leaving us with a limited understanding of how school teachers in developing countries experience AI (Almahasees, Al-Harabsheh, & Albudairi, 2024; Beirat et al., 2025).

This study aims to bridge this gap by investigating Jordanian educators' perceptions of AI's impact on social skills and academic performance, two crucial facets of education. There is a pressing need for empirical data on how emerging technologies impact students' cognitive and interpersonal development in non-Western contexts. This study fills that gap by simultaneously focusing on both outcomes.

This study contributes to the growing body of research on AI in education by emphasizing the importance of aligning AI use with contextual realities and developmental appropriateness through its dual-dimensional analysis and localized focus. By doing this, it promotes evidence-based policymaking and effective training methods for teachers, ensuring that AI is applied in educational settings in a responsible and efficient manner.

2. Literature Review

2.1. Artificial Intelligence in Education

According to Gignac and Szodorai (2024), AI is "a set of technologies that reflect the ability to simulate human intelligence to perform tasks such as learning, understanding, and thinking." AI, which enables machines to interact with their environment and analyze data intelligently, is exemplified by neural networks and machine learning systems. Because AI provides students with immediate support and individualized learning experiences, which increase their motivation and engagement, it can be a helpful tool for improving educational standards. Significant progress has been made in this area in recent years, leading to increased productivity in several sectors, including education (Shahzad et al., 2024).

Incorporating AI capabilities into the curriculum encourages students to develop positive attitudes and confidence in using these tools, thereby enhancing their technological literacy and

ethical awareness. The integration, however, necessitates a teaching methodology for training students to use AI tools properly and ethically (Ngo & Hastie, 2024).

In education, AI is a helpful tool that facilitates the teaching and learning process by making information more accessible and enhancing learners' experiences (Huang et al., 2023). However, implementing AI in education is hindered by numerous challenges, including training teachers and students on how to utilize these technologies ethically and effectively. Privacy and bias issues also raise concerns about the use of student data (Huang et al., 2023). Research indicates that ChatGPT and related tools can improve academic writing abilities; however, caution should be used when utilizing these tools to prevent issues with academic integrity (Alkamel & Alwagieh, 2024). Finding a balance between utilizing AI technologies and upholding ethical standards in the classroom is crucial for ensuring successful and lasting learning outcomes (Adewale et al., 2024).

The use of AI is necessary to improve the effectiveness of Jordanian education. It creates new opportunities to improve the teaching and learning processes. It provides solutions to some of the education system's issues, enabling students from diverse socioeconomic backgrounds to access more inclusive education. AI-based platforms can tailor educational materials to students' different needs. This approach enhances academic achievement and improves access to quality education, particularly in remote areas with limited educational resources (Almahasees, Al-Harabsheh, & Albudairi, 2024).

2.2. Academic Achievement and Quality Assurance

Quality assurance in education is a set of policies and procedures designed to enhance the academic performance of educational institutions by identifying strengths and weaknesses and developing strategies for ongoing improvement. Academic achievement is closely tied to students' performance in their subjects, which in turn is directly related to their success in both academic and professional life (Gardezi, 2024). Academic achievement is one of the main factors that determine students' success. Several factors influence it, such as the educational environment and psychosocial support. This contributes to enhancing academic engagement and increasing student satisfaction, thereby raising academic success and ensuring their overall well-being. Positive academic achievement results can be achieved by strengthening personal motivation and providing an appropriate learning environment (Duchi et al., 2025).

Research shows that various factors influence learning outcomes, and comprehending such factors is necessary to advance education policies and ensure the quality of education (Keppens, 2023). On the other hand, constructivist teaching strategies successfully raise academic achievement, promote active learning, boost student motivation, boost self-esteem, and result in strong academic performance (Bahufite et al., 2023).

AI technologies are helpful instruments for raising students' academic standards in this digital age. Validation of the data used to train these algorithms is necessary to guarantee equal opportunities for all students. The predictive accuracy of conventional and non-traditional students must be protected from algorithmic biases (Herrmann & Weigert, 2024). AI technologies, such as ChatGPT, can enhance the quality of academic learning by providing immediate responses and personalized support to students, thereby contributing to the development of their analytical skills and improving their educational experience (Youssef et al., 2024).

AI integration in education can improve quality, give teachers more time to interact with students and provide individualized support by easing administrative burdens. The results show that although Jordanian educators are cautiously optimistic about AI's potential to improve instruction, they still need ongoing professional development to increase their digital literacy. Finding a balance

between utilizing technology and maintaining the teacher's role as a mentor and educator is essential for successfully integrating AI into education (Beirat et al., 2025).

2.3. Social Skills

Social skills are a collection of skills that impact emotions, behavior, and mental processes. Through educational experiences, they can be cultivated. These abilities include qualities like emotional stability, conscientiousness, and openness. Students perform better academically and achieve better outcomes when inspired and encouraged to adopt a growth mindset (Daley et al., 2025). Students' success in the classroom depends on their social skills, which demonstrate their ability to engage with others constructively and self-assuredly. Teachers' encouragement and support strengthen this self-perception and enhance students' general well-being (Collie et al., 2024). A sense of acceptance and belonging is fostered by effective social interaction, which facilitates students' easier integration into learning environments (Zanuttini & Little, 2022).

In addition to providing students with direct instruction, teachers also play a critical role in helping students develop these skills by modeling socially adept behavior. Enhancing teachers' social skills enables them to create inclusive, encouraging classrooms that improve students' educational experiences (Orr & Lavy, 2024). Social communication skills, which can be developed through teaching strategies such as modeling and social stories, are essential for enhancing students' lives and relationships with their peers (Alkinj et al., 2022). According to Narikbayeva et al. (2025), the arts foster social development by enabling students to express their emotions, develop empathy, and collaborate on projects that enhance their mental health and overall well-being.

Despite these advantages for education, AI tools could endanger student relationships. Excessive dependence on technology can limit opportunities for in-person interactions and hinder the development of essential social skills. Researchers and educators must, therefore, strive to strike a balance between the application of AI and fostering deep human connections in educational settings (Puteri et al., 2024).

3. Methodology

3.1. Study Methodology and Procedures

Using a descriptive correlational methodology, the study examined how teachers view AI's potential to enhance students' academic and social skills. Without altering the study environment, this methodological approach was deemed suitable for elucidating the relationships between variables in their natural context. Based on recent theoretical research, subject-matter experts created and validated a structured questionnaire. The tool was designed to evaluate two distinct aspects: interpersonal skills and academic achievement. Item-total correlations, each of which showed statistical significance, supported its validity. Cronbach's Alpha was used to evaluate its reliability concurrently, and the results showed good internal consistency (0.784 for academic achievement and 0.846 for interpersonal abilities).

The data were analyzed using non-parametric statistical techniques (Kruskal-Wallis and Mann-Whitney U tests) to identify variations based on demographic factors that resulted from the non-normal distribution of the data.

3.2. Study Population and Sample

The study population consisted of 372 teachers from three schools under the Marka Directorate of Education, Capital Governorate, Hashemite Kingdom of Jordan, in term 2 for the 2024/2025 academic year. The research sample included 62 randomly selected teachers from the same three schools, representing 16.67% of the study population. Table 1 presents the distribution of the study sample based on gender, years of experience, and educational level.

Table 1. Distribution of the Research Sample Based on Study Variables

Variable	Category	Frequency	Percentage
Gender	Male	19	30.6%
	Female	43	69.4%
	Total	62	100%
Years of Experience	Less than 5 years	3	4.8%
	5-10 years	29	46.8%
	More than 10 years	30	48.4%
	Total	62	100%
Educational Level	Kindergarten	16	25.8%
	Primary	26	41.9%
	Secondary	20	32.3%
	Total	62	100%

3.3. Study Instrument

Questionnaire: The construct validity of the questionnaire was verified by examining its internal consistency. This was achieved by calculating the correlation coefficients between each item's score and the corresponding dimension to which it belongs. The results are presented in the following table:

Table 2. Correlation Coefficients of Item Scores with the Corresponding Dimension Scores in the Questionnaire.

Item	Correlation Coefficient	Item	Correlation Coefficient	Item	Correlation Coefficient	Item	Correlation Coefficient
First Dimension: Academic Achievement							
1	0.666**	5	0.502**	9	0.660**	13	0.471**
2	0.690**	6	0.517**	10	0.641**	14	0.786**
3	0.406*	7	0.405*	11	0.493**	15	0.710**
4	0.696**	8	0.477**	12	0.644**	16	0.721**
Second Dimension: Social Skills							
1	0.625**	5	0.445*	9	0.412*	13	0.665**
2	0.502**	6	0.626**	10	0.653**	14	0.661**
3	0.727**	7	0.704**	11	0.577**	15	0.596**
4	0.630**	8	0.623**	12	0.607**	16	0.422*

The preceding table clearly indicates that, at significance levels of 0.01 or 0.05, all correlation coefficients between the items in the first dimension and the sum of the scores in that dimension were statistically significant. The study sample's coefficients varied from 0.405 to 0.786. Similarly, among the study sample, the correlation coefficients between the items in the second dimension and the total score of their respective dimension ranged from 0.412 to 0.727. They were likewise statistically significant at the significance level of 0.01 or 0.05.

3.4. Instrument Reliability

The reliability of the questionnaire was verified by assessing internal consistency using Cronbach's alpha coefficient. The following table presents the internal consistency coefficients calculated using Cronbach's Alpha.

Table 3. Internal Consistency Reliability Coefficients for the Research Instrument Questionnaire.

Dimension	Cronbach's Alpha Reliability
First Dimension: Academic Achievement	0.784
Second Dimension: Social Skills	0.846

It is observed from the table that the values of Cronbach's Alpha reliability coefficients were satisfactory for both dimensions. The Cronbach's Alpha reliability coefficient for the first dimension was 0.784, while for the second dimension, it was 0.846. This indicates that the questionnaire demonstrates good reliability indicators.

Based on the above observations, it is safe to conclude that the questionnaire has high validity and reliability signs, as shown by the appropriateness of the required psychometric properties for the study.

3.4. Study Questions

The current study aimed to identify the role of AI in ensuring the quality of academic achievement and social skills among a sample of school students in Jordan and to answer the following study questions:

Q1: What is the role of AI in ensuring the quality of academic achievement among a sample of school students in Jordan from the teachers' perspective?

Q2: From the teachers' perspective, what is AI's role in ensuring the quality of social skills among a sample of school students in Jordan?

Q3: Are there statistically significant differences at the ($\alpha \leq 0.05$) significance level in the mean scores of academic achievement and social skills quality due to gender, years of experience, or educational level?

4. Results

Question One: What is the role of Artificial Intelligence in ensuring the quality of academic achievement among a sample of school students in Jordan from the teachers' perspective?

The arithmetic means standard deviations and approval levels were extracted to answer this question. The length of the cells in the five-point Likert scale (minimum and maximum limits) was calculated to determine the degree of approval. The range was determined as follows: $(5-1=4)$, then divided by the highest value in the scale to obtain the cell length: $(4 \div 5=0.80)$. This value was then added to the lowest value in the scale (which is one) to determine the upper limit of each cell. The resulting classification of response categories is presented in the following table:

Table 4. Coding Scores for Each Response Category and Their Corresponding Ranges.

Response Level	Very High	High	Moderate	Low	Very Low
Response Level for Positive Items	5	4	3	2	1
Response Level for Negative Items	1	2	3	4	5
Response Range for Positive Items	5 – 4.20	4.19 – 3.40	3.39 – 2.60	2.59 – 1.80	1.79 – 1
Response Range for Negative Items	1.79 - 1	2.59 – 1.80	3.39 – 2.60	4.19 – 3.40	5 – 4.20

The results regarding the descriptive statistics of the first dimension are presented in Table 5

Table 5. Arithmetic Means, Standard Deviations, and Approval Levels for All Items of the First Dimension

No.	Items	Mean Score	Standard Deviation	Approval Degree	Order
1	AI contributes to enhancing students ' academic achievement.	3.95	.895	High	6
2	AI considers individual differences among students.	4.10	.740	High	1
3	AI saves teachers time and effort.	3.69	1.195	High	8
4	AI supports various types of student assessments.	3.95	.876	High	5
5	AI fails to provide a fully integrated classroom environment.	3.13	1.079	Moderate	12
6	AI minimizes reliance on traditional books and notebooks.	1.98	1.048	High	16
7	AI can be used anytime and anywhere.	4.08	.816	High	2
8	AI provides accurate information about students ' performance and progress.	3.29	1.046	Moderate	11
9	AI offers multiple teaching methods and tools.	3.92	.753	High	7
10	AI is difficult for students to understand and use.	3.44	1.096	Low	10
11	AI helps students complete assigned tasks and homework.	4.00	.512	High	4
12	Teachers lack knowledge on how to utilize AI to enhance academic achievement.	2.90	1.183	Moderate	15
13	AI supports the development of student assessments.	4.03	.677	High	3
14	AI causes boredom and reduces students ' motivation to learn.	3.58	1.064	Low	9

15	AI is difficult to integrate into the classroom and extracurricular activities.	2.90	1.169	Moderate	14
16	AI contributes to students ' lack of attendance commitment.	3.05	1.078	Moderate	13
First Dimension (Academic Achievement)		3.50	.465	High	

The previous table shows that the approval degree was high for the first domain (academic achievement). This indicates that the role of AI in ensuring the quality of academic achievement among a sample of school students in Jordan, from the teachers' perspective, was rated as high. The mean score for this domain was 3.50. Statement 2 (AI considers individual differences among students) ranked first with a high approval degree and a mean score of 4.10. In contrast, statement 6 (AI minimizes reliance on traditional books and notebooks) ranked last, also with a high approval degree but a mean score of 1.98.

Question Two: What is the Role of Artificial Intelligence in Ensuring the Quality of Social Skills Among a Sample of School Students in Jordan from the Teachers' Perspective?

Arithmetic means, standard deviations, and degree of agreement were extracted to answer this question. The results are presented in the following table:

Table 6. Arithmetic Means, Standard Deviations, and Degree of Agreement for All Items of the Second Dimension.

No.	Items	Mean Score	Standard Deviation	Approval Degree	Order
1	Artificial Intelligence develops students' social skills.	2.29	.998	Low	11
2	Artificial Intelligence helps students acquire 21st-century skills.	3.34	1.459	Moderate	1
3	Artificial Intelligence enables students to express their feelings and emotions.	2.53	.987	Low	9
4	Artificial Intelligence contributes to strengthening students ' personalities and enhancing their confidence.	2.71	1.122	Moderate	6
5	Artificial Intelligence increases the rate of bullying among students.	2.85	1.185	Moderate	4
6	Artificial Intelligence enables students to integrate into the educational process.	3.27	1.176	Moderate	2
7	Artificial Intelligence enhances students' self-actualization.	3.08	1.245	Moderate	3
8	Artificial Intelligence allows students to engage in discussions with others.	2.71	1.092	Moderate	5
9	Artificial Intelligence helps teachers empathize with students and recognize and understand their emotions.	2.18	.878	Low	14

10	Artificial Intelligence provides students with opportunities to build friendships and establish social relationships.	2.40	.877	Low	10
11	Artificial Intelligence hinders teachers from managing the classroom and monitoring students' behavior.	2.60	1.221	Moderate	7
12	Artificial Intelligence reduces students ' opportunities to participate in social activities.	2.16	1.074	High	15
13	Artificial Intelligence negatively affects human behavior due to interaction with machines.	2.55	1.003	High	8
14	Artificial Intelligence increases students' feelings of isolation and loneliness.	2.23	1.031	High	13
15	Artificial Intelligence eliminates body language and effective communication.	2.11	1.010	High	16
16	Artificial Intelligence limits students ' sense of cooperation, participation, and harmony.	2.23	.895	High	12
Second Dimension (Social Skills)		2.58	.490	Low	

It is evident from the previous table that the approval degree for the second domain (social skills) was low, with a mean score of 2.58 for this domain. Statement 2 ("Artificial Intelligence helps students acquire 21st-century skills" ranked first with a moderate approval level and a mean score of (3.34), whereas Statement 15 ("Artificial Intelligence eliminates body language and effective communication" ranked last with a high approval level and a mean score of (2.11).

The results indicate that teachers believe AI falls short in enhancing students' social skills, necessitating a reassessment of AI's implementation and use in the classroom. The moderate ratings assigned to several statements, including the use of AI in classroom management and discussion participation, demonstrate that while there are benefits, they are not insignificant. Many other claims, however, were highly rated, including the negative impact on human behavior, loneliness and isolation, and fewer opportunities for social interaction.

Question Three: Are there statistically significant differences at the significance level ($\alpha \leq 0.05$) between the mean scores of the sample on the questionnaire's two domains based on gender, years of experience, and educational level?

To answer this question, the (Mann-Whitney U) test was used to detect the differences between the averages of the responses of the research sample members according to the gender variable, and the (Kruskal-Wallis) test was used to detect the differences between the averages of the responses of the research sample members according to the variables of the number of years of experience, educational stage, after making sure that the variables data do not follow the normal moderate distribution, and the following is an explanation of that:

4.1. According to Gender

The Mann-Whitney U test was used to detect gender-based differences in the mean responses of the sample to the questionnaire's two domains.

Table 7. Mean Ranks and Sum of Ranks of the Sample's Responses on the Two Domains of the Questionnaire Attributed to the Gender Variable.

Dimension	Gender	Count	Mean Rank	Sum of Ranks
First Dimension (Academic Achievement)	Males	19	29.95	569.00
	Females	43	32.19	1384.00
Second Dimension (Social Skills)	Males	19	33.66	639.50
	Females	43	30.55	1313.50

Table 8. Mann-Whitney U Test of Gender Variable Differences

	First Dimension (Academic Achievement)	Second Dimension (Social Skills)
Mann-Whitney U	379.000	367.500
Wilcoxon W	569.000	1313.500
Z	-.452-	-.627-
Asymp. Sig. (2-tailed)	.651	.531
Decision	Not Significant	Not Significant

It is evident from the previous table that there were no statistically significant differences at the significance level ($\alpha \leq 0.05$) between the mean responses of the study sample on the two questionnaire dimensions concerning the gender variable; the significance level for both domains were greater than the critical value (0.05), indicating that the differences were not statistically significant.

4.2. According to the Variable of Years of Experience

The Kruskal-Wallis test was used to detect differences in the mean responses of the study sample on the two questionnaire dimensions concerning the variable of years of experience.

Table 9. Kruskal-Wallis Test of Experience Variable Differences

Dimension	Variable categories	Number	Mean ranks	Chi-square	Degree of freedom	Significance level
First dimension (Academic achievement)	Less than 5 years	3	4.50	16.957	2	.000 Significant
	From 5 to 10 years	29	25.41			
	More than 10 years	30	40.08			
Second dimension (Social skills)	Less than 5 years	3	23.50	12.838	2	.000 Significant
	From 5 to 10 years	29	23.57			
	More than 10 years	30	39.97			

It is evident from the previous table that there are statistically significant differences at the significance level ($\alpha \leq 0.05$) between the mean responses of the study sample on the two questionnaire dimensions based on the variable of years of experience. The significance level for both questionnaire dimensions was smaller than the critical value (0.05), indicating that the differences were statistically significant.

The Mann-Whitney U test was used to determine the direction of the differences on the statistically significant dimensions.

Table 10. Mann-Whitney U Test of Experience Variable Differences

Variable categories		First dimension (Academic achievement)	Second dimension (Social skills)
Difference between the two groups (Less than 5 years) and (From 5 to 10 years)	Mann-Whitney U	4.500	42.500
	Wilcoxon W	10.500	48.500
	Z	-2.548-	-.065-
	Asymp. Sig. (2-tailed)	.011	.948
	Decision	Significant	Not Significant
Difference between the two groups (Less than 5 years) and (From 5 to 10 years)	Mann-Whitney U	3.000	22.000
	Wilcoxon W	9.000	28.000
	Z	-2.638-	-1.442-
	Asymp. Sig. (2-tailed)	.008	.149
	Decision	Significant	Not Significant
Difference between the two groups (From 5 to 10 years) and (More than 10 years)	Mann-Whitney U	219.500	204.000
	Wilcoxon W	654.500	639.000
	Z	-3.283-	-3.507-
	Asymp. Sig. (2-tailed)	.001	.000
	Decision	Significant	Not Significant

It is evident from the previous table:

- There are statistically significant differences between the mean responses of the two groups (less than 5 years and 5 to 10 years) on the first dimension (Academic achievement) based on the variable of years of experience, favoring the 5 to 10 years group. However, the differences between the two groups on the second dimension (Social skills) were not statistically significant.
- There are statistically significant differences between the mean responses of the two groups (Less than 5 years and More than 10 years) on the first dimension (Academic achievement) based on the variable of years of experience, in favor of the More than 10 years group. However, the differences between the two groups on the second dimension (Social skills) were not statistically significant.
- There are statistically significant differences between the mean responses of the two groups (From 5 to 10 years and More than 10 years) on the first dimension (Academic achievement) based on the variable of years of experience, in favor of the More than 10 years group. However, the differences between the two groups on the second dimension (Social skills) were not statistically significant.

4.3. Based on the Educational Stage Variable

The Kruskal-Wallis test was used to detect differences between the mean responses of the research sample members on the two questionnaire dimensions based on the educational stage variable.

Table 11. Kruskal-Wallis Test of Educational Stage Variable Differences

Dimension	Variable categories	Number	Mean ranks	Chi-square	Degree of freedom	Significance level
First dimension (Academic achievement)	Kindergarten	16	19.72	23.912	2	.000 Significant
	Primary	26	26.71			
	Secondary	20	47.15			
Second dimension (Social skills)	Kindergarten	16	18.41	28.414	2	.000 Significant
	Primary	26	26.44			
	Secondary	20	48.55			

The previous table indicates the presence of statistically significant differences at the significance level ($\alpha \leq 0.05$) between the mean responses of the study sample on the two questionnaire dimensions based on the educational stage variable. The significance level for both dimensions was smaller than the critical value (0.05), meaning the differences were statistically significant. The Mann-Whitney U test was used to determine the direction of these differences on the statistically significant dimensions.

Table 12. Mann-Whitney U Test of Educational Stage Variable Differences

Second dimension (Social skills)		First dimension (Academic achievement)	Variable categories
Difference between the two groups (Kindergarten) and (Primary)	Mann-Whitney U	144.000	139.500
	Wilcoxon W	280.000	275.500
	Z	-1.668-	-1.779-
	Asymp. Sig. (2-tailed)	.095	.075
	Not Significant	Significant	Decision
Difference between the two groups (Kindergarten) and (Secondary)	Mann-Whitney U	35.500	19.000
	Wilcoxon W	171.500	155.000
	Z	-3.975-	-4.496-
	Asymp. Sig. (2-tailed)	.000	.000
	Not Significant	Significant	Decision
Difference between the two groups (Primary) and (Secondary)	Mann-Whitney U	71.500	60.000
	Wilcoxon W	422.500	411.000
	Z	-4.208-	-4.441-
	Asymp. Sig. (2-tailed)	.000	.000
	Not Significant	Significant	Decision

It is evident from the previous table:

- Based on the educational stage variable, the mean responses of the two groups (Kindergarten and Primary) on both dimensions do not differ statistically.

- Based on the educational stage variable, the mean responses of the kindergarten and secondary groups differ significantly in both dimensions, favoring the Secondary group.
- According to the educational stage variable, the mean responses of the two groups (Primary and Secondary) differ significantly in both dimensions, favoring the Secondary group.

The findings indicate that teachers are firmly convinced that AI can enhance student learning, and the average academic achievement score is notably high. However, the low mean score for the social skills dimension raises questions about AI's potential to foster interpersonal growth. These results highlight the significance of striking a balance between AI and human interaction, particularly in early education.

5. Discussion

According to the study's findings, educators gave high ratings for AI contributions to raising academic achievement. They saw AI as a valuable educational tool that offers contemporary learning mechanisms in line with changing educational demands, particularly helpful when face-to-face instruction is disrupted. This is consistent with earlier research by Al-Qahtani and Al-Dail (2021), who noted that Princess Nourah Bint Abdulrahman University had a high degree of AI integration, and Seo et al. (2021), who emphasized how AI can help teachers by reducing workload and personalizing learning. Similarly, Chen et al. (2020) argued for the broad use of AI because of its enormous potential in several fields, including education.

Teachers, however, thought AI had little contribution to making students more socially adept. The reason given by the researcher is the significance of human interaction in fostering empathy, communication, and emotional intelligence, especially in early childhood. AI cannot replicate the emotional presence necessary to develop these abilities. Person-centred and social theories contend that meaningful face-to-face interaction, role learning, and cultural context are the main drivers of social development. Therefore, children's development of critical social skills may be hampered by AI-mediated learning's lack of genuine human interaction.

Numerous studies support this interpretation. Seo et al. (2021) claim that although AI improves communication, it can also lead to miscommunications and a blurring of social boundaries. According to Naima (2020), play and social interaction are crucial in kindergarten learning environments. Puteri et al. (2024) warned that excessive reliance on AI could hinder students' ability to communicate and work in teams, and they called for rigorous teacher supervision. Abdul Rahman (2018) also confirmed the efficacy of human-centered guidance programs in promoting social inclusion and reducing isolation.

The study found no significant gender-based differences in teachers' assessments of AI's efficacy. Still, it was found that male and female educators have similar roles and expectations when using AI. However, there appeared to be variations according to the number of years spent teaching. Teachers with more experience reported using AI to improve student performance more successfully. The fact that no experience-based differences were found for social skills supports the notion that AI is generally insufficient for fostering interpersonal skills, regardless of teacher seniority.

The findings also revealed variations in educational attainment. Teachers in secondary schools had more positive opinions about AI than their counterparts in kindergarten or primary schools. This may be because older students require less one-on-one assistance and use digital tools more independently. However, AI is less successful in promoting holistic development because younger students rely more on human interaction to meet their developmental needs.

In conclusion, while AI significantly improves academic achievement, it does not affect social skills. These findings suggest that AI should be integrated thoughtfully, with balanced attention to its strengths and limitations, to address the emotional and social dimensions of learning.

6. Limitations

It is important to recognize this study's limitations. First, the study only included 62 teachers from three schools in one Jordanian educational directorate, which may have limited the findings' applicability in other settings or geographical areas. Second, the descriptive-correlational design of the study precludes drawing conclusions about the causal relationship between AI's impact on social skills and academic performance. Third, self-reported perceptions were used to collect the data, which could have been skewed by biases or a lack of knowledge about AI's educational applications. Furthermore, the study only examined the viewpoints of the teachers; it omitted student comments and classroom observations, which would have given a more complete picture. Lastly, even though the instrument showed good validity and reliability, future studies would benefit from expanding the sample to include a range of geographic locations and educational levels and triangulating data using a combination of methods.

7. Conclusion

It is crucial to examine social skills and academic performance. In addition to imparting knowledge, education nowadays equips students with the skills necessary to function in intricate social situations, work well with others, and grow emotionally intelligent. Academic success reflects intellectual development, but social skills are the foundation of civic engagement, personal growth, and future employability. A more comprehensive picture of student achievement is obtained by looking at both factors. It backs up the notion that social competence and knowledge acquisition can be promoted in modern education through technology-enhanced learning, including artificial intelligence. Together, these elements support the case for both this study and the larger educational setting.

The study ends by emphasising how AI can improve educational quality and the necessity of comprehensive, human-centered strategies to support students' social and academic growth. The findings demonstrate that AI is now an essential component of education and greatly increases the likelihood of academic success. Social interaction is crucial, especially for kids' social skill development. AI should be viewed as a supplement to human intelligence in education rather than as a substitute for it.

8. Recommendations

Considering the study's findings, several suggestions are made to improve the successful integration of AI in education. First and foremost, it is critical to create focused teacher training programs that equip teachers to use AI tools to enhance students' academic performance and foster the growth of their social skills. These courses should allow educators to balance integrating technology and foster deep human connections. To guarantee AI is applied successfully and morally, educational institutions are urged to provide seminars, workshops, and continuing assistance, presenting AI as a valuable addition to traditional pedagogy rather than its replacement.

Since social-emotional learning is crucial in kindergarten and primary school, face-to-face interaction should continue to be a key component of AI integration. At the secondary level, where students have more autonomy, hybrid or online-supported models might be more suitable. At the community level, parents and institutions should be advised not to rely too much on AI; human interaction is still essential, especially in early childhood education, where social skills are best developed through interpersonal interactions.

Additionally, given the favorable correlation between academic and social competencies, it is advised to support educational interventions that focus on both at the same time. Future research should incorporate quasi-experimental studies to assess the efficacy of AI-based interventions, particularly in social skill acquisition. Lastly, to increase knowledge and broaden the body of evidence in this developing field, researchers are urged to utilize and modify the AI questionnaire in subsequent studies, which involves aspects of social skills and academic achievement.

Declarations

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