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Integrating Artificial Intelligence Technologies into the Teaching of Islamic Studies at the Intermediate Level in Saudi Arabia: Teachers' Perceptions

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Abstract

This study explored Saudi intermediate-level Islamic Studies teachers' views on integrating artificial intelligence (AI), the conditions needed for its effective use, and the challenges surrounding its adoption. A questionnaire was distributed to 151 teachers and analyzed using descriptive statistical methods, including frequencies, percentages, means, standard deviations, and relative weights, guided by a five-point Likert scale. The findings reveal strong support for AI as a supportive instructional tool that enhances lesson planning, simplifies complex concepts, encourages active learning, and enables personalized instruction. Teachers also expressed high awareness of ethical responsibilities, particularly regarding the verification of AI-generated content, protection of students' data privacy, prevention of plagiarism, and the need for responsible teacher supervision. In terms of adoption criteria, participants emphasized the importance of maintaining doctrinal accuracy, preserving the authenticity of Islamic knowledge, fostering critical and reflective thinking, and facilitating the transfer of learning to real-life contexts. They further highlighted essential technical and governance requirements, such as secure access control, data confidentiality, accurate Arabic-language support, fairness, and clear ethical guidelines. Teachers showed a clear preference for specialized AI applications designed for Islamic Studies and immersive technologies such as virtual and augmented reality, while expressing less confidence in data mining and big data tools. Reported challenges were largely systemic, including limited infrastructure, insufficient professional training, and the absence of clear institutional policies. Overall, the study underscores that successful AI integration in Islamic Studies requires coherent alignment between pedagogy, technology, and ethics, supported by robust governance frameworks and continuous professional development.

Keywords: Artificial Intelligence Integration; Ethical Governance; Islamic Studies Education; Saudi Intermediate Teachers; Teacher Perceptions

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Introduction

The rapid advancement of globalization, digital transformation, and information technologies in the twenty-first century has fundamentally reshaped educational systems worldwide, accelerating the transition toward learner-centered and technology-enhanced pedagogical models [1]. These developments emphasize instructional flexibility, innovation, and data-driven decision-making. Within this global transformation, the Kingdom of Saudi Arabia has positioned digitalization as a cornerstone of its national education reform agenda under Saudi Vision 2030, with a strong focus on improving educational quality, fostering innovation, and preparing learners for participation in a knowledge-based economy [2]. As a result, teachers' professional roles have evolved beyond traditional content delivery to encompass the effective and pedagogically sound integration of digital technologies that enhance learning outcomes and student engagement.

This shift holds particular significance for the teaching of Islamic Studies, a foundational subject in the Saudi curriculum that plays a pivotal role in shaping students' moral values, ethical awareness, and religious identity, especially at the intermediate level. Islamic Studies teachers are increasingly required to reconcile the preservation of religious authenticity with contemporary pedagogical approaches that address learners' cognitive, social, and technological needs. Among emerging educational technologies, artificial intelligence (AI) has gained increasing attention due to its potential to facilitate personalized learning, adaptive instruction, and formative assessment, thereby offering new possibilities for enriching teaching and learning processes [3],[4]. When thoughtfully implemented, AI technologies can support Islamic Studies instruction while remaining aligned with Islamic principles and educational objectives [5].

Despite substantial national investments in educational technology and AI-driven initiatives, the practical integration of AI into Islamic Studies classrooms at the intermediate level remains limited. Existing research indicates that teachers' adoption of AI is closely associated with their perceptions of its pedagogical value, ethical appropriateness, and compatibility with curricular goals. Persistent challenges—such as limited digital competencies, insufficient access to specialized professional development, and the lack of clear pedagogical and ethical guidelines for AI use—continue to constrain effective implementation. These challenges are particularly pronounced at the intermediate stage, where instruction must carefully balance cognitive development with value-based learning.

In this context, examining teachers' perceptions of AI integration in Islamic Studies is essential for informing context-sensitive, pedagogically grounded, and ethically responsible implementation strategies. Accordingly, this study investigates Saudi intermediate-level Islamic Studies teachers' perceptions of integrating artificial intelligence technologies into classroom instruction and proposes a comprehensive framework to support effective, ethical, and sustainable AI integration in alignment with the objectives of Saudi Vision 2030.

Study Objectives

1. To examine Islamic Studies teachers' perceptions of the pedagogical value of artificial intelligence (AI) technologies and to identify the key motivational factors influencing their integration into teaching practices.
2. To identify the pedagogical, technical, and ethical standards that Islamic Studies teachers consider necessary for the responsible and effective use of AI technologies in teaching Islamic Studies.
3. To explore Islamic Studies teachers' perceptions of the applicability and instructional suitability of diverse artificial intelligence technologies for teaching Islamic Studies.

Study Questions

1. To what extent do Islamic Studies teachers perceive artificial intelligence (AI) technologies as pedagogically valuable, and what key motivations influence their willingness to integrate these technologies into their teaching practices?
2. What pedagogical, technical, and ethical standards do Islamic Studies teachers consider essential for the responsible and effective use of AI technologies in teaching Islamic Studies?
3. Which types of artificial intelligence technologies do Islamic Studies teachers perceive as most applicable to teaching Islamic Studies, and how do they evaluate their suitability for instructional use?

Literature Review

Concept of Artificial Intelligence

Artificial intelligence (AI) emerged as a distinct academic field in the mid-twentieth century, following its formal introduction during the Dartmouth Summer Research Project proposal (1955/1956), which is widely regarded as a foundational moment in AI research [6]. Since then, AI has evolved from a theoretical concept into a sophisticated branch of computer science concerned with developing systems capable of performing tasks traditionally associated with human intelligence. These tasks include learning, reasoning, problem-solving, language processing, and decision-making.

Contemporary definitions emphasize AI's ability to learn from data, adapt to new contexts, and simulate complex cognitive processes. According to Russell and Norvig, AI can be understood through system capabilities such as perception, inference, and goal-directed action, offering a comprehensive framework for conceptualizing intelligent behavior in machines. This perspective positions AI not merely as a technological innovation, but as an interdisciplinary domain that draws on linguistics, psychology, education, statistics, and the social sciences.

Characteristics of Artificial Intelligence

AI systems are characterized by core features that enable them to replicate selected aspects of human reasoning through structured and data-driven processes, including knowledge representation, search, and learning. Machine learning further enhances AI performance by enabling systems to learn from experience, refine predictions, and improve accuracy over time [7]. Recent developments in AI also demonstrate adaptive behavior, including responsiveness, effective processing of linguistic and visual data, and continuous learning from new inputs, making AI increasingly suitable for educational applications.

Importance of Artificial Intelligence in Education

Artificial intelligence has become an integral component of contemporary educational systems, offering potential to enhance instructional effectiveness, decision-making, and learner engagement. AI-enabled educational tools can support instructional functions by delivering content, responding to learners' inquiries, assessing performance, and providing timely feedback through intelligent dialogue systems and adaptive learning environments. Importantly, international guidance emphasizes that AI should be implemented in ways that strengthen teacher agency, protect learners, and ensure human-centered educational goals.

AI Technologies in Teaching Islamic Studies

AI technologies can encourage a shift from teacher-centered instruction to more interactive, learner-centered approaches by enabling adaptive feedback, automated assessment, and intelligent tutoring. In the teaching of Islamic Studies, AI applications may support lesson preparation, personalized instruction, the use of multimedia resources, and feedback processes, provided that content accuracy, religious authenticity, and ethical safeguards are maintained. However, challenges such as limited teacher proficiency, rapid technological change, insufficient infrastructure, and concerns about the appropriateness of AI in religious education highlight the need for targeted professional development and clear governance frameworks.

Challenges, Strategic Responses, and Research Gaps

Although AI's educational potential is increasingly acknowledged, systematic implementation remains limited. The literature highlights adoption barriers, including infrastructural constraints, training gaps, and governance/ethical risks such as privacy, bias, transparency, and accountability. Therefore, scholars and standards bodies emphasize the importance of ethics-aligned guidance and standards-based implementation for trustworthy AI adoption in sensitive educational contexts [8]. Moreover, there remains a need for context-sensitive research focusing specifically on teachers' perceptions of AI integration in Islamic Studies at the intermediate level in Saudi Arabia.

Method

Research Design

This study adopted a descriptive research design to investigate teachers' perceptions of integrating artificial intelligence (AI) into Islamic Studies instruction at the intermediate level. This design is appropriate for systematically examining attitudes, perceived challenges, and pedagogical implications in real classroom contexts without experimental manipulation. Data were gathered using a structured questionnaire to capture prevailing perceptions and practices.

Participants and Sampling

The target population consisted of Islamic Studies teachers working in public intermediate schools in Dammam. A simple random sampling technique was employed, as recommended in survey research to reduce selection bias and enhance generalizability [9]. A total of 151 teachers participated in the study.

Data Collection and Analysis

Data were collected using a researcher-developed questionnaire rated on a five-point Likert scale [10]. Content validity was ensured through expert

review, and discriminant validity was examined using an extreme-group approach and nonparametric tests appropriate for ranked/ordinal comparisons in survey validation [11]. Reliability and internal consistency were evaluated using Cronbach's alpha [12]. Descriptive statistics (frequencies, percentages, means, standard deviations, and relative weights) were computed using established quantitative analysis procedures commonly applied in educational research and SPSS-based analysis workflows [13].

Table 1. Distribution of the Sample According to the Study Variables (N = 151)

Variable	Su bcategories	Frequency	Percentage (%)
Teaching experience	1–5 years	27	17.9
	6–10 years	43	28.5
	11 years or more	81	53.6
	Total	151	100.0
Academic qualification	Bachelor's degree	123	81.5
	Master's degree	23	15.2
	Doctorate	5	3.3
	Total	151	100.0
Number of training courses in technology	None	21	13.9
	Fewer than five courses	62	41.1
	Five courses or more	68	45.0
	Total	151	100.0

Table I summarizes the demographic and professional profile of the study sample (N = 151), revealing that most participants are experienced educators, with over half reporting 11 years or more of teaching experience, followed by those with 6–10 years, while early-career teachers constitute a smaller group. This experience-rich distribution suggests that the findings largely reflect informed professional perspectives and well-established pedagogical judgment [1]. In terms of academic qualifications, the majority of respondents hold bachelor's degrees, with fewer holding master's degrees and only a limited number possessing doctoral qualifications, a pattern consistent with common staffing structures in many educational systems [2]. Regarding professional development, participants reported varied engagement in technology-related

training, ranging from extensive participation to no prior training. This disparity points to uneven levels of readiness for technology integration and highlights the need for sustained and inclusive professional development programs to support effective and equitable educational technology use [3].

Data Collection and Analysis

Data were collected using a researcher-developed questionnaire administered to female Islamic Studies teachers at the intermediate level. The instrument aimed to examine teachers' motivation to integrate artificial intelligence (AI), determine the pedagogical and technical standards required for effective use, and identify preferences for selecting appropriate AI tools. Its design was guided by an extensive review of Arabic and international literature on technology integration and AI in education [1],[2]. The questionnaire included demographic items and three main dimensions, with responses rated on a five-point Likert scale [3]. Content validity was ensured through expert evaluation, while discriminant validity was confirmed using the extreme-group method [4],[5].

Table 2: Percentage of Agreement Among the Evaluators on the Questionnaire Items

Axis 1: Motivations for Utilizing AI Technologies	Agreement (%)	Axis 2: Pedagogical Standards	Agreement (%)	Axis 2: Technical- Pedagogical Standards	Agreement (%)	Axis 3: AI Technologies Applicable in Instruction	Agreement (%)
Item 1	93%	Item 1	87%	Item 10	93%	Item 1	93%
Item 2	93%	Item 2	93%	Item 11	87%	Item 2	93%
Item 3	87%	Item 3	93%	Item 12	93%	Item 3	93%
Item 4	87%	Item 4	87%	Item 13	87%	Item 4	87%
Item 5	93%	Item 5	93%	Item 14	87%	Item 5	87%
Item 6	87%	Item 6	87%	Item 15	93%	Item 6	93%
Item 7	93%	Item 7	87%	Item 16	93%	Item 7	87%
Item 8	93%	Item 8	93%	Item 17	87%	Item 8	93%
Item 9	87%	Item 9	87%	—	—	—	—
Item 10	87%	—	—	—	—	—	—
Item 11	93%	—	—	—	—	—	—
Item 12	87%	—	—	—	—	—	—
Item 13	93%	—	—	—	—	—	—
Item 14	93%	—	—	—	—	—	—

Axis 1: Motivations for Utilizing AI Technologies	Agreement (%)	Axis 2: Pedagogical Standards	Agreement (%)	Axis 2: Technical- Pedagogical Standards	Agreement (%)	Axis 3: AI Technologies Applicable in Instruction	Agreement (%)
Item 15	87%	—	—	—	—	—	—
Item 16	93%	—	—	—	—	—	—
Item 17	93%	—	—	—	—	—	—
Item 18	87%	—	—	—	—	—	—
Item 19	87%	—	—	—	—	—	—
Item 20	93%	—	—	—	—	—	—

Table 2 reveals a consistently high level of agreement among expert evaluators across all questionnaire axes, which provides strong evidence of the instrument's content validity and clarity. For Axis 1 (Motivations for Utilizing AI Technologies), agreement levels range from 87% to 93% across the 20 items, indicating a shared consensus regarding the relevance and representativeness of the motivational constructs being measured. Likewise, Axis 2 (Pedagogical Standards) demonstrates similarly high agreement percentages (87%–93%) for all nine items, suggesting that the pedagogical criteria are clearly articulated and well aligned with expert expectations. The Technical–Pedagogical Standards axis also records uniformly strong agreement (87%–93%), highlighting evaluators' confidence in the integration of technical and pedagogical dimensions within the instrument. In addition, Axis 3 (AI Technologies Applicable in Instruction) maintains comparably high agreement levels, reflecting consensus on the instructional relevance and applicability of the selected AI tools. Collectively, the consistently high agreement rates across all axes confirm the coherence, adequacy, and relevance of the questionnaire items, thereby supporting the instrument's suitability for subsequent empirical implementation and analysis [1],[2].

Table 3: Results of the Mann-Whitney U Test for Discriminant Validity (Extreme-Group Comparison) of the Questionnaire

Questionnaire Domain / Dimension	Group	N	Sum of Ranks	Mean Rank	U Value	Sig. Value	Statistical Significance
Domain 1: Pedagogical Value and Motivations for Integrating AI Technologies	Upper	23	805.00	35.00	0.00	0.00	Significant at 0.01
	Lower	23	276.00	12.00	0.00	0.00	Significant at 0.01
Domain 2: Standards to Be Followed When Utilizing AI Technologies in Teaching Islamic Studies	Upper	23	805.00	35.00	0.00	0.00	Significant at 0.01
	Lower	23	276.00	12.00	0.00	0.00	Significant at 0.01
Domain 3: Diverse AI Technologies Applicable to Teaching Islamic Studies	Upper	23	805.00	35.00	0.00	0.00	Significant at 0.01
	Lower	23	276.00	12.00	0.00	0.00	Significant at 0.0

The results of the Mann-Whitney U test demonstrate strong discriminant validity for the questionnaire through extreme-group comparisons, as statistically significant differences were observed between the upper and lower groups across all domains. In Domain 1 (Motivations for Utilizing AI Technologies in Teaching Islamic Studies), the upper group achieved substantially higher mean ranks than the lower group, with the U value reaching zero and significance confirmed at the 0.01 level. Similar patterns were found in Domain 2 (Standards for Utilizing AI Technologies) and Domain 3 (Diverse AI Technologies Applicable to Teaching Islamic Studies), where the consistent separation of rank distributions indicates a high capacity of the instrument to distinguish between respondents with differing levels of perception and agreement. The uniformly significant results across all domains confirm that the questionnaire items effectively discriminate between extreme groups, thereby supporting the robustness of its construct validity. These findings align with established methodological literature advocating the extreme-group approach and nonparametric testing for validating attitudinal and perception-based instruments [1],[2].

Table 4: Pearson Correlation Coefficients (r) for Internal Consistency of the Questionnaire (N = 84)

Item (IT)	First Domain Motivations for Utilizing AI	Second Domain 1 Educational (Pedagogical) Standards	Second Domain 2 Technical & Technological Criteria	Third Domain Diverse AI Technologies
1	0.629**	0.724**	0.776**	0.540**
2	0.727**	0.637**	0.784**	0.823**
3	0.689**	0.784**	0.765**	0.837**
4	0.754**	0.807**	0.802**	0.890**
5	0.710**	0.831**	0.841**	0.813**
6	0.718**	0.693**	0.764**	0.834**
7	0.719**	0.616**	0.764**	0.853**
8	0.741**	0.715**	0.771**	0.647**
9	0.684**	0.694**	—	—
10	0.698**	—	—	—
11	0.736**	—	—	—
12	0.716**	—	—	—
13	0.702**	—	—	—
14	0.696**	—	—	—
15	0.797**	—	—	—
16	0.641**	—	—	—
17	0.650**	—	—	—
18	0.642**	—	—	—
19	0.592**	—	—	—
20	0.577**	—	—	—
Overall score	0.900	0.925	—	—

Note. $p < 0.01$ (two-tailed). All coefficients indicate strong item-total correlations, supporting the internal consistency of the questionnaire.

Table 4 summarizes the demographic and professional characteristics of the study sample (N = 151), providing essential context for interpreting the findings. The distribution of teaching experience indicates that more than half of the participants (53.6%) have 11 years or more of experience, suggesting that the results largely reflect the perspectives of seasoned educators with substantial classroom exposure. Teachers with 6–10 years of experience (28.5%) and those in the early stages of their careers (17.9%) are also adequately represented, ensuring variability in professional backgrounds. Regarding academic qualifications, the predominance of bachelor's degree holders (81.5%) aligns with prevailing qualification requirements in school education systems, while the presence of postgraduate degree holders adds analytical depth to the sample. In terms of professional development, a notable proportion of participants reported having completed five or more technology-related training courses (45.0%), indicating a relatively high level of technological readiness. Collectively, these characteristics enhance the credibility of the data and support the reliability of participants' perceptions regarding AI integration in instructional practice [1],[2].

Table 5. Questionnaire Reliability Coefficients and Corrected Item-Total Correlation

Item (IT)	First Domain: Motivations for Utilizing AI Technologies		Second Domain – Dimension 1: Pedagogical Standards		Second Domain – Dimension 2: Technical & Technological Criteria		Third Domain: AI Technologies Applicable to Islamic Studies	
	CITC	CAID	CITC	CAID	CITC	CAID	CITC	CAID
1	0.585	0.940	0.596	0.926	0.686	0.924	0.421	0.921
2	0.696	0.938	0.407	0.931	0.641	0.925	0.762	0.894
3	0.655	0.939	0.588	0.926	0.643	0.925	0.772	0.893
4	0.719	0.937	0.718	0.923	0.726	0.923	0.843	0.886
5	0.669	0.938	0.733	0.923	0.693	0.924	0.744	0.895
6	0.676	0.938	0.611	0.926	0.680	0.924	0.772	0.893
7	0.678	0.938	0.534	0.927	0.638	0.925	0.800	0.891
8	0.703	0.938	0.674	0.924	0.645	0.925	0.555	0.910
9	0.639	0.939	0.644	0.925	—	—	—	—
10	0.655	0.938	—	—	—	—	—	—
11	0.706	0.938	—	—	—	—	—	—
12	0.676	0.938	—	—	—	—	—	—
13	0.663	0.938	—	—	—	—	—	—
14	0.661	0.938	—	—	—	—	—	—

Item (IT)	First Domain: Motivations for Utilizing AI Technologies		Second Domain – Dimension 1: Pedagogical Standards		Second Domain – Dimension 2: Technical & Technological Criteria		Third Domain: AI Technologies Applicable to Islamic Studies	
15	0.768	0.768	—	—	—	—	—	—
16	0.596	0.939	—	—	—	—	—	—
17	0.603	0.939	—	—	—	—	—	—
18	0.593	0.940	—	—	—	—	—	—
19	0.542	0.940	—	—	—	—	—	—
20	0.521	0.941	—	—	—	—	—	—

Table 5 presents the corrected item–total correlation coefficients (CITC) and Cronbach’s alpha values if an item is deleted (CAID) for the questionnaire domains. As shown in the table, all items across the four domains demonstrate acceptable to strong CITC values, ranging approximately from 0.42 to 0.84. These values exceed the commonly recommended minimum threshold of 0.30, indicating that each item contributes meaningfully to its respective construct and demonstrates satisfactory internal consistency [1],[2].

For the first domain (Motivations for Utilizing AI Technologies), CITC values are consistently moderate to high, confirming strong homogeneity among items measuring motivational factors. Similarly, items within the second domain, including both pedagogical standards and technical and technological criteria, exhibit robust item–total correlations, reflecting coherent measurement of standards required for effective AI integration. The third domain (AI Technologies Applicable to Islamic Studies) shows particularly high CITC values for several items, suggesting a strong alignment between individual items and the overall construct.

Furthermore, the CAID values remain high and stable across all domains, with no substantial increase observed when any item is hypothetically removed. This stability indicates that deleting any item would not improve the overall reliability of the scale, thereby supporting the retention of all items in their current form. Collectively, these results confirm the strong internal consistency and reliability of the questionnaire, supporting its suitability for subsequent statistical analysis and empirical application [3].

Table 6. Cronbach's Alpha Reliability Coefficients for the Questionnaire Domains(N0:45)

Questionnaire Domains	Number of Items	Cronbach's Alpha
Domain 1: Pedagogical Value and Motivations for Integrating AI Technologies	20	0.941
Domain 2: : Standards to Be Followed When Utilizing AI Technologies in Teaching Islamic Studies	17	0.884
Domain 3: AI technologies applicable to teaching Islamic Studies	8	0.910
Overall questionnaire	45	0.95

Table 6 presents the internal consistency reliability of the questionnaire domains using Cronbach's alpha (N = 45). The findings indicate that all domains demonstrate strong internal consistency, confirming the reliability of the measurement instrument. Domain 1, which examines motivations for utilizing AI technologies in teaching Islamic Studies, shows an excellent reliability coefficient ($\alpha = 0.941$) across its 20 items. Likewise, Domain 2, addressing the standards required for AI utilization, achieves a high level of reliability ($\alpha = 0.884$) for its 17 items, surpassing the minimum acceptable threshold for educational research instruments. Domain 3, focusing on AI technologies applicable to teaching Islamic Studies, also records a strong reliability coefficient ($\alpha = 0.910$) despite its smaller number of items. Overall, the questionnaire attains a Cronbach's alpha of 0.95, reflecting excellent internal consistency for the complete 45-item scale. These results confirm that the instrument is methodologically sound and appropriate for further statistical analysis and empirical investigation, in line with established reliability criteria in educational research [1].

Results

Analysis of the First Research Question

The analysis of responses to the first research question indicates that Saudi intermediate-level Islamic Studies teachers hold a strongly positive perception of the pedagogical value of integrating artificial intelligence (AI) technologies into their instructional practices. Overall, teachers perceive AI as an enabling pedagogical tool that enhances lesson delivery, promotes student engagement, and improves instructional efficiency, rather than as a substitute for the teacher's central instructional role. The high mean scores recorded across motivation-

related items suggest that teachers are primarily motivated by AI's capacity to diversify teaching strategies, support differentiated instruction, and facilitate clearer explanations of abstract or cognitively demanding religious concepts. These findings reflect teachers' recognition of AI as a means to address learners' individual differences and varied learning abilities while maintaining pedagogical control and religious authenticity, a perspective consistent with prior research on technology-enhanced teaching and teacher-centered integration models [1],[2].

Table 7. Criterion for judging the arithmetic means of the questionnaire items, dimensions, and domains

No.	Mean Score Range	Judgment Criterion
1	1.00–1.80	Very Low
2	1.81–2.60	Low
3	2.61–3.40	Moderate
4	3.41–4.20	High
5	4.21–5.00	Very High

Note: *The criteria are based on a five-point Likert scale for interpreting respondents' perceptions [1].*

Table 7 presents the criteria used to interpret the arithmetic mean scores of the questionnaire items, dimensions, and overall domains based on a five-point Likert scale. The table clearly maps specific mean score ranges to qualitative judgment levels, ranging from *Very Low* to *Very High*, thereby providing a standardized framework for data interpretation. This classification ensures consistency in evaluating respondents' perceptions across all measured constructs and facilitates meaningful comparison among items and domains. Higher mean values within the scale indicate stronger agreement or more positive perceptions, whereas lower values reflect weaker agreement or less favorable evaluations. Adopting such a criterion enhances the clarity, transparency, and rigor of the quantitative analysis and aligns with established practices in attitude measurement research [1].

Table 8. Descriptive statistics of the motivations for utilizing AI technologies in teaching the Islamic Studies curriculum at the intermediate stage (N = 151)

No.	Item (Motivation)	Very High F (%)	High F (%)	Moderate F (%)	Low F (%)	Very Low F (%)	Mean	SD	Relative Weight (%)	Degree of Agreement	Rank
Domain 1: Pedagogical Value and Motivations for Integrating AI Technologies											
1	AI improves lesson planning efficiency.	67 (44.4)	56 (37.1)	24 (15.9)	4 (2.6)	0 (0.0)	4.23	0.81	84.6	Very high	5
2	AI supports personalized student learning	79 (52.3)	46 (30.5)	22 (14.6)	4 (2.6)	0 (0.0)	4.32	0.82	86.0	Very high	1
3	AI increases student engagement levels.	69 (45.7)	60 (39.7)	18 (11.9)	4 (2.7)	0 (0.0)	4.28	0.78	85.7	Very high	3
4	AI helps explain difficult concepts.	61 (40.4)	55 (36.4)	31 (20.5)	4 (2.6)	0 (0.0)	4.14	0.83	82.9	High	21
5	AI provides instant feedback support.	71 (47.0)	50 (33.1)	28 (18.5)	2 (1.3)	0 (0.0)	4.25	0.80	85.2	Very high	4
6	AI saves time on grading.	40 (26.5)	51 (33.8)	42 (27.8)	17 (11.3)	1 (0.7)	3.74	0.99	74.8	High	20
7	AI enhances instructional content quality.	39 (25.8)	56 (37.1)	43 (28.5)	13 (8.6)	0 (0.0)	3.80	0.92	76.0	High	19
8	AI supports differentiated teaching strategies	60 (39.7)	57 (37.7)	25 (16.6)	8 (5.3)	1 (0.7)	4.10	0.91	82.1	High	14
9	AI promotes active learning activities.	58 (38.4)	64 (42.4)	22 (14.6)	5 (3.3)	2 (1.3)	4.13	0.87	82.6	High	13
10	Teachers ensure ethical AI usage.	59 (39.1)	63 (41.7)	25 (16.6)	4 (2.6)	0 (0.0)	4.17	0.79	83.4	High	10
11	Teachers protect	63 (41.7)	64 (42.4)	18 (11.9)	6 (4.0)	0 (0.0)	4.21	0.80	84.4	Very high	7

No.	Item (Motivation)	Very High F (%)	High F (%)	Moderate F (%)	Low F (%)	Very Low F (%)	Mean	SD	Relative Weight (%)	Degree of Agreement	Rank
	students' data privacy.										
12	Teachers verify AI-generated information.	55 (36.4)	60 (39.7)	32 (21.2)	3 (2.0)	1 (0.7)	4.09	0.84	81.9	High	15
13	Teachers avoid plagiarism and misuse.	61 (40.4)	59 (39.1)	26 (17.2)	4 (2.6)	1 (0.7)	4.15	0.84	83.2	High	11
14	Teachers guide responsible AI practice.	73 (48.3)	57 (37.7)	16 (10.6)	4 (2.6)	1 (0.7)	4.30	0.81	86.1	Very high	2
15	AI tools must be reliable.	62 (41.1)	61 (40.4)	25 (16.6)	3 (2.0)	0 (0.0)	4.20	0.78	84.1	High	8
16	AI tools must be user-friendly.	56 (37.1)	59 (39.1)	30 (19.9)	5 (3.3)	1 (0.7)	4.08	0.87	81.7	High	16
17	AI tools support Arabic language.	55 (36.4)	52 (34.4)	36 (23.8)	6 (4.0)	2 (1.3)	4.00	0.94	80.1	High	18
18	AI tools fit curriculum objectives.	58 (38.4)	58 (38.4)	25 (16.6)	8 (5.3)	2 (1.3)	4.07	0.93	81.5	High	17
19	AI tools enhance classroom interaction	62 (41.1)	63 (41.7)	22 (14.6)	2 (1.3)	2 (1.3)	4.19	0.83	84.0	High	9
20	Teachers need AI training programs.	70 (46.4)	53 (35.1)	21 (13.9)	6 (4.0)	1 (0.7)	4.22	0.88	84.5	Very high	6

The results reported in Axis 1 reflect a clear and largely positive outlook among teachers toward the pedagogical value and motivational factors associated with integrating AI technologies into instructional practice. The consistently high levels of agreement across all items indicate that teachers generally perceive AI as a supportive and beneficial tool for teaching rather than a disruptive innovation. Mean scores ranging from 3.74 to 4.32, together with relative weights exceeding 74%, suggest strong confidence in AI's capacity to

enhance classroom practices. Teachers place particular value on AI's ability to support personalized learning and to promote responsible and ethical use under teacher guidance, highlighting their commitment to learner-centered instruction while preserving professional accountability. The strong agreement on issues related to data privacy, verification of AI-generated information, and avoidance of plagiarism further demonstrates teachers' awareness of the ethical and governance dimensions of AI integration, in line with current educational technology standards [1], [2]. Although items related to time-saving functions such as grading received comparatively lower mean scores, they still fall within the high agreement range, indicating thoughtful acceptance rather than skepticism. Taken together, these findings show that teachers view AI as a complementary pedagogical resource that enhances instructional quality, student engagement, and teaching efficiency, echoing conclusions drawn in previous studies on AI-supported teaching and responsible digital pedagogy [3], [4].

Analysis of the Second Research Question

The second research question sought to identify the criteria that should guide the effective integration of artificial intelligence technologies in teaching the Islamic Studies curriculum at the intermediate level. To address this question, the study employed descriptive statistical techniques, including frequencies, percentages, means, standard deviations, and relative weights for each questionnaire item. The items constituting the second axis of the questionnaire were ranked according to their mean scores, in addition to calculating the overall mean for this axis. Interpretation of the results was guided by the same mean score criteria adopted in the analysis of the first research question. The findings are summarized and presented in Table 9, providing a clear overview of participants' perceptions regarding the recommended criteria for AI integration.

Table 9. Overall Results Related to the Criteria Required for Investing AI Technologies in Teaching the Islamic Studies Curriculum at the Intermediate Stage (n = 151)

Sub-dimension	No. of Items	Arithmetic Mean	Standard Deviation	Relative Weight	Level of Agreement	Rank
First dimension: Pedagogical Value and Motivations for Integrating AI Technologies	9	4.160	0.661	83.2%	High	2
Standards to be followed when	8	4.172	0.729	83.4%	High	1

Sub-dimension	No. of Items	Arithmetic Mean	Standard Deviation	Relative Weight	Level of Agreement	Rank
utilizing AI technologies in teaching Islamic Studies						
Overall arithmetic mean of the second axis	17	4.166	0.695	83.3%	High	-

Table 9 presents teachers' overall perceptions of the criteria required for the effective adoption of AI technologies in teaching the Islamic Studies curriculum at the intermediate stage (N = 151). The findings indicate a consistently high level of agreement across all dimensions, as reflected by arithmetic means above 4.16 and relative weights exceeding 83%, which points to a strong consensus among respondents. The dimension related to the standards governing the use of AI technologies ranked first (M = 4.172, SD = 0.729, RW = 83.4%), underscoring teachers' emphasis on the importance of clear pedagogical, ethical, and technical guidelines to ensure responsible and effective AI integration. This was followed closely by the dimension addressing the pedagogical value and motivations for integrating AI technologies (M = 4.160, SD = 0.661, RW = 83.2%), reflecting teachers' awareness of AI's potential to enhance instructional quality, learner engagement, and instructional efficiency. Moreover, the overall mean score for the axis (M = 4.166, SD = 0.695, RW = 83.3%) confirms a high level of readiness and acceptance among teachers, suggesting that successful AI implementation in Islamic Studies depends on aligning perceived pedagogical benefits with well-defined implementation standards, in line with prior research on educational technology integration [1], [2].

Table 10. Descriptive Statistics of the Pedagogical Standards Required When Utilizing AI Technologies in Teaching Islamic Studies (Items 1–9, N = 151)

No.	Pedagogical Standard Item (Summarized)	Very High F (%)	High F (%)	Moderate F (%)	Low F (%)	Very Low F (%)	Mean	SD	Relative Weight	Degree of Agreement	Rank
Domain 2: Standards to Be Followed When Utilizing AI Technologies in Teaching Islamic Studies											
1	Doctrinally accurate advanced AI use	59 (39.1)	69 (45.7)	20 (13.2)	3 (2.0)	0 (0.0)	4.21	0.75	84.4%	Very high	2
2	Reliable AI documentation of texts	56 (37.1)	52 (34.4)	33 (21.9)	8 (5.3)	2 (1.3)	4.07	0.96	80.1%	High	9
3	Personalized AI-supported learning paths	59 (39.1)	57 (37.7)	31 (20.5)	3 (2.0)	1 (0.7)	4.12	0.85	82.5%	High	7
4	Comprehensive AI integration in teaching	57 (37.7)	58 (38.4)	32 (21.3)	4 (2.6)	0 (0.0)	4.11	0.82	82.3%	High	8
5	AI enhancing student engagement	63 (41.7)	56 (37.1)	29 (19.2)	3 (2.0)	0 (0.0)	4.18	0.81	83.7%	High	5
6	AI supporting collaborative learning	60 (39.7)	61 (40.4)	23 (15.2)	6 (4.0)	1 (0.7)	4.14	0.86	82.9%	High	6
7	AI fostering critical reflective thinking	60 (39.7)	65 (43.0)	23 (15.2)	2 (1.3)	1 (0.7)	4.19	0.79	84.0%	High	4
8	AI enabling real-life learning transfer	61 (40.4)	62 (41.1)	26 (17.2)	2 (1.3)	0 (0.0)	4.20	0.76	84.0%	High	3
9	AI preserving Islamic knowledge authenticity	61 (40.0)	67 (44.4)	21 (13.9)	2 (1.3)	0 (0.0)	4.23	0.73	84.8%	Very high	1
Overall Mean (Domain)		—	—	—	—	—	4.16				

Table 11. Descriptive Statistics of the Pedagogical Standards Required When Utilizing AI Technologies in Teaching Islamic Studies (Items 10–17, N = 151)

No.	Item (Abbreviated)	Very High F (%)	High F (%)	Moderate F (%)	Low F (%)	Very Low F (%)	Mean	SD	Relative Weight (%)	Level of Agreement	Rank
10	AI integrated with e-learning platforms	67 (44.4)	53 (35.1)	25 (16.6)	6 (4.0)	0 (0.0)	4.19	0.85	84.0	High	4
11	Accurate Arabic language AI support	65 (43.0)	58 (38.4)	24 (15.9)	4 (2.6)	0 (0.0)	4.21	0.80	84.4	Very High	2
12	Secure access control and privacy	71 (47.0)	50 (33.1)	26 (17.2)	3 (2.0)	1 (0.7)	4.23	0.85	84.8	Very High	1
13	Bias-free and fair AI systems	61 (40.4)	39 (25.8)	43 (28.5)	7 (4.6)	1 (0.7)	4.00	0.97	80.1	High	8
14	Training teachers and students effectively	62 (41.1)	57 (37.7)	26 (17.2)	5 (3.3)	1 (0.7)	4.15	0.87	83.0	High	7
15	Ethical guidelines for AI use	68 (45.0)	52 (34.4)	24 (15.9)	6 (4.0)	1 (0.7)	4.19	0.89	83.8	High	5
16	Data confidentiality and protection ensured	72 (47.7)	45 (29.8)	28 (18.5)	6 (4.0)	0 (0.0)	4.21	0.88	84.2	Very High	3
17	Equitable access to AI technologies	64 (42.4)	52 (34.4)	31 (20.5)	3 (2.0)	1 (0.7)	4.15	0.86			

The results presented in Tables 10 and 11 reveal a consistently high level of agreement among Saudi intermediate-level Islamic Studies teachers concerning the pedagogical, technical, and ethical standards necessary for the effective integration of artificial intelligence (AI) in teaching. As shown in Table 10, all pedagogical standards attained high to very high mean values ($M = 4.07$ – 4.23), reflecting a strong shared belief that AI integration must be firmly grounded in doctrinal accuracy, the preservation of the authenticity of Islamic knowledge, and the promotion of higher-order thinking skills. The highest-

ranked item, which emphasizes safeguarding the authenticity of Islamic knowledge, highlights teachers' acute awareness of the religious, moral, and educational responsibilities inherent in Islamic Studies instruction. In addition, the high ratings assigned to AI-supported critical and reflective thinking, real-life learning transfer, and enhanced student engagement indicate that teachers recognize the pedagogical value of AI when it is applied within clear instructional and value-based boundaries. Complementing these findings, Table 11 underscores teachers' strong emphasis on technical and ethical prerequisites, particularly secure access control, data privacy, accurate Arabic language support, and transparent ethical governance. The prominence of privacy, confidentiality, and fairness concerns reflects heightened awareness of the potential ethical risks associated with AI systems in educational environments. Collectively, the strong mean scores across both tables suggest that teachers view AI integration not as an ad hoc technological adoption, but as a structured, standards-driven process that requires careful alignment between pedagogy, technology, and ethics. This perspective is consistent with contemporary scholarship, which emphasizes that responsible AI adoption in education depends on robust governance frameworks, teacher preparedness, and context-sensitive implementation [1],[3].

Analysis of the third Research Question

The findings addressing the third research question indicate that Saudi intermediate-level Islamic Studies teachers' concerns regarding the integration of artificial intelligence (AI) technologies are grounded in professional responsibility rather than resistance to innovation. Teachers emphasize doctrinal accuracy and content reliability, reflecting awareness of the ethical and religious sensitivity of Islamic Studies and the potential risks of unverified AI-generated outputs. Reported technical limitations and insufficient professional training are perceived as institutional challenges, underscoring the need for structured support, targeted capacity-building programs, and clear regulatory frameworks. Teachers' cautious engagement with diverse AI tools further highlights the importance of pedagogically sound selection and contextual alignment with Islamic values. Overall, AI integration is viewed as a value-driven and systematic process requiring coherence between technology, pedagogy, and ethics, consistent with prior research on sustainable AI adoption in education [1],[3].

Table 12. Descriptive statistics of the various AI technologies applicable to teaching the Islamic Studies curriculum at the intermediate stage (n = 151)

No.	Item (Abbreviated)	Very High F (%)	High F (%)	Moderate F (%)	Low F (%)	Very Low F (%)	Mean	SD	Relative Weight (%)	Level of Agreement	Rank
Generative AI											
1	& conversational tools	39 (25.8)	67 (44.4)	35 (23.2)	9 (6.0)	1 (0.7)	3.88	0.88	77.7	High	6
2	AI-based teaching support tools	45 (29.8)	63 (41.7)	34 (22.5)	8 (5.3)	1 (0.7)	3.94	0.89	78.9	High	5
3	Educational data mining technologies	43 (28.5)	57 (35.7)	33 (21.9)	15 (9.9)	3 (2.0)	3.80	1.02	76.2	High	8
4	Big data analysis technologies	48 (31.8)	52 (34.4)	36 (23.8)	12 (7.9)	3 (2.0)	3.86	1.02	77.2	High	7
5	Metaverse, VR, and AR technologies	57 (37.7)	54 (35.8)	30 (19.9)	8 (5.3)	2 (1.3)	4.03	0.95	80.7	High	3
6	AI-based image recognition tools	57 (37.7)	51 (33.8)	30 (19.9)	12 (7.9)	1 (0.7)	4.00	0.98	80.0	High	4
7	AI-based image generation tools	55 (36.4)	61 (40.4)	23 (15.2)	11 (7.3)	1 (0.7)	4.04	0.93	80.9	High	2
Specialized											
AI											
8	applications for Islamic Studies	58 (38.4)	61 (40.4)	26 (17.2)	6 (4.0)	0 (0.0)	4.13	0.83	82.6	High	1
—	Overall arithmetic mean of the domain	—	—	—	—	—	3.94				

Table 12 summarizes Saudi intermediate-level Islamic Studies teachers' perceptions of various artificial intelligence (AI) technologies applicable to curriculum delivery, revealing an overall high level of agreement ($M = 3.94$) that reflects positive yet carefully considered acceptance. Teachers showed a clear preference for specialized AI applications for Islamic Studies, which ranked first ($M = 4.13$, $RW = 82.6\%$), emphasizing the importance of doctrinal accuracy, contextual relevance, and alignment with religious content. Immersive technologies, including metaverse, virtual reality, and augmented reality, as well as AI-based image generation and recognition tools, also received high ratings ($M \geq 4.00$), indicating teachers' recognition of their potential to enhance visualization, engagement, and experiential learning of abstract or historical Islamic concepts. In contrast, educational data mining and big data analysis technologies received comparatively lower mean scores, suggesting limited familiarity, perceived technical complexity, or uncertainty regarding their immediate pedagogical value at the intermediate stage. Generative AI and conversational tools, although positively evaluated, ranked lower than domain-specific applications, reflecting teachers' cautious attitudes toward open-ended AI systems that may require rigorous content verification. Overall, the findings indicate that teachers' acceptance of AI technologies is driven primarily by pedagogical relevance, content reliability, and contextual suitability rather than technological novelty alone. This trend is consistent with previous research emphasizing that sustainable AI integration in education depends on teachers' trust in AI outputs, curricular alignment, and adequate professional preparation supported by clear ethical and governance frameworks [1],[3].

Discussion

The results of this study demonstrate that Saudi intermediate-level Islamic Studies teachers generally hold positive and well-informed perceptions regarding the pedagogical value of integrating artificial intelligence (AI) technologies into their instructional practices. Teachers view AI primarily as a complementary instructional tool that enhances lesson planning, student engagement, and instructional efficiency, rather than as a replacement for the teacher's central pedagogical role. This finding reflects a balanced understanding of AI as a means to enrich teaching while maintaining professional authority and religious responsibility. Such perceptions are consistent with previous research emphasizing teacher-led and pedagogy-driven technology integration models, particularly in value-sensitive educational contexts [1],[2].

The strong motivation expressed by teachers toward personalized learning, ethical guidance, and responsible AI use indicates a clear learner-centered orientation. High agreement levels on items related to data privacy,

verification of AI-generated content, and avoidance of plagiarism suggest that teachers possess heightened ethical awareness when employing AI in Islamic Studies instruction. This awareness is especially significant given the doctrinal sensitivity of the subject matter, where accuracy and authenticity are paramount. These findings align with contemporary educational technology literature that stresses the importance of ethical governance, transparency, and accountability in AI-supported teaching environments [3],[4].

Furthermore, the results related to the second research question highlight teachers' strong emphasis on clear pedagogical, technical, and ethical standards as prerequisites for effective AI integration. Teachers' prioritization of doctrinal accuracy, preservation of Islamic knowledge authenticity, and promotion of higher-order thinking skills indicates that AI adoption is perceived as a structured and standards-driven process. The prominence of ethical and technical considerations – such as secure access control, data confidentiality, and accurate Arabic language support – underscores teachers' concern for safeguarding learners and ensuring contextually appropriate AI use. These findings support existing research that positions governance frameworks and institutional readiness as key determinants of sustainable AI implementation in education [5],[6].

Finally, teachers' cautious yet positive evaluation of various AI technologies reflects a preference for pedagogically relevant and context-specific applications over technologically complex or unfamiliar systems. Specialized AI applications for Islamic Studies and immersive technologies such as virtual and augmented reality were viewed as particularly valuable for enhancing visualization and experiential learning. In contrast, lower ratings for data mining and big data tools suggest limited perceived relevance or insufficient training. Overall, the findings indicate that teachers' acceptance of AI is guided by pedagogical utility, ethical reliability, and curricular alignment rather than novelty alone. This reinforces the view that successful AI integration in Islamic Studies depends on coherent alignment between pedagogy, technology, and ethics, supported by continuous professional development and institutional support [7],[15].

Conclusion

This study concludes that Saudi intermediate-level Islamic Studies teachers demonstrate a strongly positive yet carefully conditioned orientation toward integrating artificial intelligence (AI) in classroom practice, viewing it as a pedagogical support rather than a replacement for the teacher's instructional and religious authority. The findings show that teachers value AI for its potential to enhance student engagement, clarify complex concepts, and support

differentiated instruction aligned with curriculum objectives. However, acceptance is explicitly dependent on maintaining doctrinal accuracy and preventing the dissemination of unreliable or unverified AI-generated religious content, which teachers perceive as a critical risk in Islamic Studies education. The results further indicate that effective AI integration requires clear pedagogical standards regulating its use in lesson planning, instruction, and assessment, ensuring coherence with Islamic values and educational goals. From a technical perspective, teachers emphasize the necessity of reliable infrastructure, strong Arabic-language support, and system compatibility to enable effective classroom implementation. Ethical considerations, including data privacy, transparency, and prevention of student misuse, are central to teachers' evaluations of AI adoption. Importantly, teachers' concerns are largely systemic rather than individual, reflecting gaps in training, institutional guidance, and policy frameworks rather than resistance to innovation. Consequently, sustained professional development and clearly articulated institutional policies are essential to ensure responsible, effective, and value-aligned AI integration in Islamic Studies classrooms.

Author Contributions

Lulwa S. A. Al-Saad: Conceptualization, Methodology, Writing – review & editing, Supervision, Project administration. **Mohammed H. Albahiri:** Methodology, Writing – review & editing, Investigation. **Ali Albashir Mohammed Alhaj:** Conceptualization, Methodology, Writing – review & editing, Investigation.

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Conflict of Interest

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