
The Role of ChatGPT and Generative AI in Shaping the Future of Islamic Teachers' Pedagogy in Southern Pakistan

Abstract

Generative Artificial Intelligence (AI) technologies such as ChatGPT are rapidly transforming global educational practices in the era of digital innovation. However, their pedagogical application within rural and religious educational settings remains underexplored. Grounded in the Technological Pedagogical Content Knowledge (TPACK) and Diffusion of Innovation (DOI) frameworks, this study investigates how generative AI influences pedagogical strategies among teachers in Islamic secondary schools in Southern Pakistan, particularly in the Kot Addu district. The research aims to: (1) determine the level of ChatGPT and AI adoption among teachers; (2) examine how generative AI impacts pedagogy, lesson planning, and student interaction; and (3) analyze gender-based differences in perceptions and utilization of these tools. A quantitative research design was employed using a structured questionnaire administered to 440 Islamic secondary school teachers. Data were analyzed using SPSS 2021 through descriptive statistics, t-tests, and correlation analysis. The findings reveal moderate adoption of AI technologies, which positively contribute to instructional innovation and teacher–student engagement. Notably, male teachers demonstrated slightly higher confidence and more active use of generative AI tools compared to female teachers. The study acknowledges limitations such as reliance on self-reported data, infrastructural constraints related to internet and device access, and cultural reservations regarding AI integration in religious education. The findings highlight the importance of targeted teacher training, culturally sensitive digital policies, and institutional support to ensure equitable integration of AI. Future research should incorporate qualitative approaches to capture deeper insights into teachers' experiences, examine long-term impacts on learning outcomes, and explore policy-level enablers and barriers to AI integration in Islamic educational contexts.

Keywords: ChatGPT, Generative AI, Pedagogy, Islamic schools, gender difference, south pakistan.

Introduction

The growing influence of Artificial Intelligence (AI) in education has reshaped traditional teaching and learning models worldwide. Among these technologies, ChatGPT—an advanced form of generative AI—has shown significant potential in enhancing instructional practices, including

personalized feedback, content generation, lesson planning, and interactive learning (Kasneci et al., 2023). In many developing countries, such as Pakistan, where challenges like outdated teaching methods, insufficient qualified educators, and limited educational resources persist, the integration of generative AI tools presents a promising opportunity to improve teaching quality and classroom engagement (Dwivedi et al., 2023).

Pakistan has initiated policy-level strategies through frameworks such as the Digital Pakistan Vision to modernize its education system. However, implementation remains inconsistent, particularly in rural and underserved regions like Southern Punjab, including Kot Addu and Muzaffargarh, where traditional pedagogies remain dominant, and teacher digital competency is limited (Ahmed & Farooq, 2021; Ministry of IT & Telecom, 2023). While global research highlights the transformative role of AI in improving pedagogical efficiency, collaboration, and creativity (Luckin et al., 2021), there is limited evidence on how generative AI operates within Islamic education, especially in culturally conservative and resource-limited contexts.

Existing studies have mainly emphasized technological adoption or student-centered outcomes. However, less attention has been given to the pedagogical implications of AI in culturally sensitive environments, such as Islamic secondary schools, where moral, ethical, and religious dimensions influence instructional practices (Zawacki-Richter et al., 2022; Naveed & Saeed, 2023). Teachers in these regions often lack professional training, reliable internet access, institutional support, and gender-inclusive AI awareness (Alif Ailaan, 2021; Riaz, 2022). Despite these challenges, increasing access to mobile technologies and digital awareness among the youth indicates a growing potential for AI-assisted teaching practices.

To address this knowledge gap, the present study investigates the adoption of ChatGPT and generative AI tools among Islamic secondary school teachers in Southern Pakistan. It examines how these tools impact pedagogy, lesson planning, and classroom interaction, while also analyzing gender-based differences in adoption and perception. By situating generative AI within local cultural and institutional realities, this study contributes context-specific insights to the broader discourse on AI in education. The research adopts a quantitative approach, using a structured questionnaire to gather empirical data from 450 teachers across multiple Islamic schools in Kot Addu.

Problem Statement

Although generative AI tools such as ChatGPT are increasingly used to enhance teaching and learning globally, their application in culturally conservative and resource-constrained contexts—such as Islamic secondary schools in Southern Pakistan—remains understudied. Teachers in these environments face challenges related to limited digital infrastructure, low AI literacy, and insufficient policy support for AI integration. Moreover, disparities in digital readiness and self-efficacy between male and female teachers may further widen the digital divide. There is inadequate empirical evidence on how teachers in these settings perceive, adopt, and pedagogically apply generative AI tools. This study addresses these gaps by examining the extent of AI usage among Islamic secondary school teachers in Southern Pakistan, analyzing its impact on pedagogy, and exploring gender-based differences in perceptions and application.

Research Objectives

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1. To assess the extent of ChatGPT and generative AI integration in teaching practices among Islamic secondary school teachers in Southern Pakistan.
 2. To analyze the impact of generative AI tools on pedagogical innovation, lesson planning, and classroom engagement.
 3. To compare male and female teachers' perceptions, usage patterns, and pedagogical adaptation to generative AI technologies in Islamic secondary schools in Southern Pakistan.

Research Questions

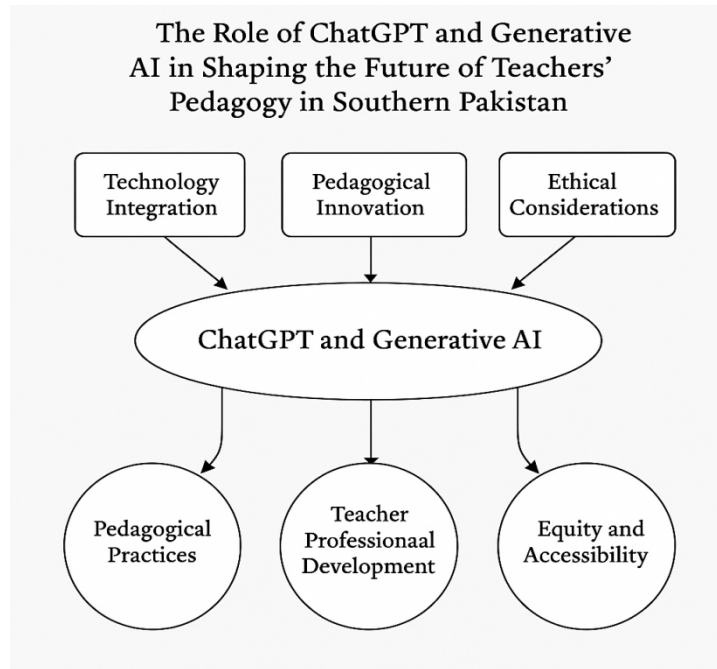
1. How widely are ChatGPT and generative AI tools being used in instructional practices by Islamic secondary school teachers in Southern Pakistan?
2. What is the impact of generative AI tools on pedagogical innovation, lesson planning, and classroom engagement?
3. How do male and female teachers differ in their perceptions, usage patterns, and pedagogical adaptation to generative AI technologies in Islamic secondary schools in Southern Pakistan?

Implications

The findings of this study extend beyond theoretical contributions by offering practical strategies for teacher training, curriculum development, and educational policy reform. The study supports the transition from traditional, rote-based teaching to AI-augmented, student-centered pedagogy that promotes critical thinking, collaboration, and creativity (Trust & Whalen, 2021; Choi et al., 2023). Furthermore, by aligning AI integration with ethical, cultural, and religious values, this research proposes a framework for culturally sustainable digital transformation in Islamic education.

Conceptual framework

The conceptual framework in the given study will examine the possibility of ChatGPT and generative AI introducing changes in teaching approaches in Islamic secondary schools in Kot Addu, Southern Pakistan. This study explores the levels at which teachers have been incorporating generative AI-based resources in their classes, the impacts of the tools on pedagogical creativity, lesson design, and student activity in the course of the study, and the levels to which there is a disparity between male and female teachers in terms of using and perceiving technologies. The framework will also not limit itself to evaluating the practical use of AI tools, but also how the teachers adjust themselves to them in a professional sense to the culturally anchored educational environment. With these interrelated variables, European Union Framework lays a direct direction in terms of assessment of AI educational impact within the context of a local and context-specific setting.



Conceptual framework 1.1

Literature Review

1. Technology Integration

Technology integration is also referred as introduction of technology which is a major involvement of online materials and devices to facilitate teaching and learning. The recent publications stress the transformative impact of such AI technologies as ChatGPT on education. A study carried out by Holmes et al. (2022) outlines that AI-adopted applications in education are revolutionizing the learning delivery system into an instructive, evaluation and personalization approach. Generative AI was also demonstrated to generate interactive learning environments in the sense that they attend to the needs of the students in real-time. It should be mentioned that the issue of successfully using new technology in developing countries is also followed by the deficit in infrastructure and teacher readiness matters (Qadir et al., 2023).

2. Pedagogical Innovation

Pedagogical innovation involves the process of attaining new methods and pedagogical practices that enhance output and interest of the students. This kind of innovation can be achieved with the help of an inquiry-driven and collaborative and reflection-centered learning that can be achieved by relying on generative AI: ChatGPT. Luckin et al. (2021) state that AI-based technologies like ChatGPT offers an opportunity in terms of the cognitive scaffolding by giving teachers more opportunities to make their educational activity more flexible. Based on the interpretation of the results presented in Khan and Rehman (2022), it was possible to note that the implementation of AI-based assistants in the classroom made it possible to obtain a measurably positive impact on the improvement of the critical thinking and problem-solving skills in South Asian environments.

3. Ethical Considerations

The educational form of AI would attract ethical issues such as the safety of data and privacy, opportunity equality and teacher autonomy. Williamson and Eynon (2020) caution that the dangers of AI systems robbing students, teachers, even educational establishments of their professional independence may be revealed, or the systems can broadcast prejudices without making the design process transparent. Using the article by Zawacki-Richter et al. (2022), it is assumed that ethical literacy must exist in teachers who deal with AI to engage in responsibilities of its use, especially in geographically deprived locations, where the control systems are not formed as yet.

4. Generative AI (Core Construct) and ChatGPT

ChatGPT and generative AI tools as a whole are slowly starting to be referred to as an educational paradigm changer. They will automate the content creation and enhance the systems of feedback and modification of workload among the teachers. As Dwivedi et al. (2023) remark, it is possible to speak about ChatGPT as one of the assistants of teachers and facilitate their typical tasks: lesson planning, formative assessment, differentiated instructions. The pedagogical applicability of such tools as ChatGPT is defined by the teacher preparation, and situational compatibility of the AI use according to Kasneci et al. (2023).

5. Pedagogical Practices

Generative AI has the potential to restructure the most basic pedagogical activity through individualizing teaching, enabling rapid commentaries, and facultating student-centered learning. Choi et al. (2023) note that generative AI augmented the motivation levels of students and enhanced interactions in the room, especially with regard to the language and social sciences. Lee & Park (2021) claim that the introduction of AI to pedagogical practice helps educators to change their working paradigm, which is less lectured-oriented and is more aligned with constructivist, student-centered formats of instructions.

6. Professional Development on Teachers

Professional learning needs to change the teacher to AI-enhanced classroom. It includes development of both technical expertise and pedagogical strategies of implementing AI tools usage. Trust and Whalen (2021) also are posing professional learning communities that are AI-driven, whereby the educators will dissolve, investigate and co-create new AI-specific practices. Such intensive learning in AI, as the authors concluded (discovery), raised the confidence of the teachers and increased their instructions in the underserved schools within Pakistan in a considerable and giant way.

7. Equality and Accessibility

Though AI can prove to be advantageous, the use of AI must support equality and inclusivity particularly in areas with unfavorable socioeconomic conditions like Southern Pakistan. Drysdale et al. (2021) note that there should be an investment in infrastructural support, along with culturally responsive design in order to adopt the AI in an equitable fashion. The researchers of the Ahmed et al. (2022) work remind those that generative AI can give better access to students with learning disabilities as well as rural ones, even though this is conditional on an inclusively deployed use of it.

Context of Pakistan: Focus on Southern Pakistan

The education sector in Pakistan specifically, the underdeveloped areas such as Southern Punjab, experience chronic issues such as the shortage of the pedagogical workforce, an older pedagogy, and sizable levels of digital illiteracy, as well as a scarcity of resources (UNESCO, 2022). It is therefore the case that in such environments, the presence of ChatGPT and Generative AI has an ardent opportunity as well as a complex challenge.

Digital divide and AI readiness

Despite the fact that the Pakistani government has achieved certain success in digital literacy promotion with the help of such national policies as Digital Pakistan Vision, many regions, including Kot Addu, Muzaffargarh, and DG Khan, are characterized by the insufficient offering of internet access, ICT infrastructure, and AI awareness among teachers (Ministry of IT & Telecom, 2023). Nevertheless, the fact that the mobile technologies are adopted at the speed unprecedented in history by the young population, means that there is a potential latent opportunity in AI-driven educational reform. In a survey conducted by Alif Ailaan (2021), more than 65 percent of teachers located in the south part of the Punjab region, had never undergone any form of A training in teaching with the aid of technological devices, not to mention AI.

Cultural and Pedagogical Norms

In Islamic schools (madaris) and government schools in the region, pedagogy remains largely teacher-centered, emphasizing rote memorization over critical thinking (Riaz, 2022). The introduction of tools like ChatGPT can help shift this paradigm by promoting interactive, inquiry-based learning, especially in Islamic Studies, English, and General Knowledge. Khan et al. (2023) found that when teachers in Burewala and Kot Addu were trained in using AI-based chat tools, student engagement and comprehension improved significantly.

Teacher Professional Development Gaps

Most teachers in Southern Pakistan receive limited exposure to modern pedagogical innovations, often due to budget constraints, bureaucratic delays, or gendered access issues (Ahmed & Farooq, 2021). Integrating ChatGPT in teacher training modules could enhance self-directed learning, content preparation, and inclusive classroom practices, especially for female teachers who face mobility and access restrictions.

Ethical and Religious Considerations

AI adoption in education must navigate local sensitivities, particularly in Islamic educational contexts. Teachers and administrators may harbor concerns about the "foreignness" or "secular influence" of AI-generated content (Naveed & Saeed, 2023). Therefore, ethical use, content monitoring, and localized AI training are critical for cultural acceptance. A recent pilot by the Punjab IT Board (2023) in government schools noted that teachers responded positively to AI tools when aligned with curriculum standards and Islamic values.

Equity and Access

AI in the tehsils with marginalized districts like Nawan Kot and Khan Garh can be applied as an equalizer allowing individual students with little teacher attention and access to textbooks to learn according to their individual needs and interests. However, this should be well planned in Infrastructure, multicultural front-ends of AI (e.g. Urdu, Saraiki), and a community-based digital awareness campaign.

Methods

The type of research methodology that will be implemented in the given study is a quantitative research method, which is grounded on the principle of empirical measurement and the statistical analysis of the data to provide an overview of the area, impact, and the matter of the gender differences in its regard concerning ChatGPT and generative AI implementation with regard to the processes of pedagogy. Qualitative analysis enables the hypothesis to be tested objectively and enable generalisation of the data in the sample to a bigger population (Sugiyono, 2018).

Purposeful Sampling is the method used in the study to select the sample which means the sample of the participants is selected by applying specific criteria that is appropriate in the study, they are the active teachers in the secondary Arabic schools of the teaching in the Kot Addu of Southern Pakistan. With Purposeful Measurement, one gets a chance to gather a selective data with this in consideration that the sample should only list the participants who have adequate exposure and contextual consent (Sugiyono, 2018). A structured questionnaire was one of the primary sources of data during the interviews: questions were predetermined and it was conducted online, via the link to Google Form. The questionnaire was distributed to be consulted by 450 Islamic secondary school teachers in both the public and the private institutions in Kot Addu. The questions of the instrument were concerned with the measures of the degree of the integration of ChatGPT and generative AI on pedagogical innovations, impact and variation in the perception, use, and adoption of ChatGPT and generative AI among the male and female teachers of communication.

Towards the measurement of the data, the said study has employed the SPSS 2021 version that entailed incorporating the new analytic features into providing robust validation of data. In order to meet the requirements that are involved in testing the inference statistics there occurred testing of validity and reliability of the dataset, testing of normality and testing of multi collinearity and heteroscedasticity. It was performed through the t-test that was used to estimate the magnitude of the difference in utilizing AI and pedagogical application based on gender and the correlation analysis and descriptive statistics that were conducted to reveal the approximate values of the generative AI role in the process of instruction impact. In this methodical and scientific process of quantitative development, the study will offer plausible results on the transformative potential of generative AIs, specifically ChatGPT, within the principles of Islamic education, and through which it can be applied in the future to influence the learning process in resource-constrained contexts.

Research Design and Approach

This study adopted a quantitative research approach to obtain factual, measurable, and verifiable data on the usage of ChatGPT and generative AI in Islamic secondary school education. A structured questionnaire was developed and distributed electronically via Google Forms, allowing efficient access to respondents and ensuring data accuracy, security, and authenticity. The use of primary data is aligned with Sugiyono (2018), who defines it as information collected directly from respondents without intermediaries, making it reliable for analyzing actual

classroom practices. Participants voluntarily completed the questionnaire, ensuring ethical engagement and enhancing the credibility of the responses.

Study Area

The study was conducted in Kot Addu district, situated in Southern Punjab, Pakistan. This region comprises both urban and rural settings, where Islamic norms significantly influence educational philosophies and practices. Islamic secondary schools in this district follow both national and religious curricula and often face infrastructural limitations, particularly in terms of technological resources. Despite these constraints, growing interest in educational innovation and Pakistan's national digital transformation initiatives make the region an appropriate context for examining AI integration within religious educational frameworks. Kot Addu provided a valuable environment to explore how generative AI tools, such as ChatGPT, are reshaping pedagogical strategies within culturally sensitive and resource-constrained settings.

Sampling and Participants

The target population consisted of 500 Islamic secondary school teachers from various institutions across Kot Addu. A purposive sampling technique was employed to ensure the inclusion of teachers actively engaged in classroom instruction and possessing some familiarity or exposure to digital technologies. This approach enabled the collection of rich, relevant, and context-specific data; however, it may introduce selection bias and restrict the generalizability of findings beyond the selected schools. Out of the distributed questionnaires, 450 valid responses were obtained, representing a high response rate suitable for statistical analysis.

Data Collection Instrument

The structured questionnaire comprised closed-ended questions designed to assess teachers' perceptions, usage patterns, confidence levels, and pedagogical adaptation regarding generative AI tools. It also included items specifically examining gender differences in AI usage. To ensure the instrument's quality, validity was established through expert review by educational technology specialists, while reliability was assessed using Cronbach's alpha, which produced acceptable internal consistency values ($\alpha > 0.70$). The questionnaire was administered electronically, ensuring accessibility, confidentiality, and transparency in data collection.

Data Analysis

Data were analyzed using SPSS 2021, applying descriptive statistics to summarize AI adoption levels and inferential techniques (t-tests and correlation analysis) to assess relationships, differences, and patterns—particularly focusing on gender-based variations. Ethical considerations were strictly adhered to, with informed consent obtained from all participants and assurances of anonymity and confidentiality.

Hypotheses

H1: It has high level of combining with ChatGPT and generative AI-tools in the teaching-related behaviour of Islamic secondary school teachers of South Pakistan.

H 2- The use of ChatGPT and generative artificial intelligence to educational innovations, lesson planning, and classroom activities augment practices of teaching at the Islamic secondary schools.

H3: The correlation between the female and male Islamic secondary school teachers concerning their opinion on the artificial intelligence generative tools in teaching is considerable.

H4: There exists an extremity in the perspectives of the male and female instructors of Islamic secondary school in the area of the Abbreviated use of ChatGPT, and also the other generative AI tools.

H5: The pedagogical difference in adaptation to generative AI incorporation in the male and women instructors is tremendous.

Hypothesis testing

The study to be undertaken will entail the utilization of sample data to perform hypothesis testing by application of data of the Islamic teachers in secondary schools in Southern Pakistan. The said process will enable the researcher to establish the relationship between generative AI use particularly ChatGPT and other learning conditions, lesson plans, instructional innovation and classroom interactivity. The concept behind hypothesis testing is the establishment of statistical value of the difference or correlations between the data that was recorded and whether it is the product of chance or otherwise. This study employs frequency-based statistical methods, focusing on how the integration of generative AI influences pedagogical outcomes. Significance testing, particularly the t-test and ANOVA, is used to assess whether the differences in AI usage and its effects across gender lines (male vs. female teachers) are statistically significant. These tests help us examine whether the extent of AI integration (X) has a measurable influence on pedagogical adaptation and innovation (Y), and whether gender moderates this relationship.

In alignment with Widarjono (2010), the t-test in this study is applied to determine the individual influence of gender on teachers' perceptions, usage patterns, and classroom adaptation of ChatGPT and generative AI tools. This allows the researcher to measure whether male and female teachers significantly differ in how they engage with and benefit from these technologies in their pedagogical practices. By using inferential statistics, this research establishes the basis for validating or rejecting the formulated hypotheses. The results derived from hypothesis testing provide empirical evidence to support policy recommendations and targeted professional development interventions aimed at promoting effective and inclusive use of generative AI in Islamic education.

Results and Discussion

Result

Table 1. The Extent of ChatGPT and Generative AI Integration in Teaching Practices Among Islamic Secondary School Teachers

	Kot Addu	Khan Garh	Mailsi	Nawan Kot	Multan
Male	22.15%	13.45%	15.62%	18.30%	21.75%
Female	3.80%	10.72%	11.43%	14.60%	18.25%
Total	25.95%	24.17%	27.05%	32.90%	40.00%

The respondent suggests that Multan has the highest overall implementation of ChatGPT and generative AI tools in its teaching practices (40%), and Nawan Kot is in the second position

(32.9%). Although the over-all rate of usage by male and female teachers appears to be relatively the same, the difference is much pronounced in Kot Addu. Remarkably, the adoption rate is quite high when it comes to female teaching personnel in Multan (18.25 percent), implying that the number of women becoming actively engaged is on the rise in more urban areas. On the whole, the results indicate the regional and gender differences in the AI incorporation in the Islamic secondary education.

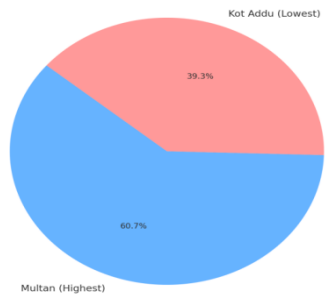


Figure 1.2

Table 2. The Impact of Generative AI Tools on Pedagogical Innovation, Lesson Planning, and Classroom Engagement

	Kot Addu	Khan Garh	Mailsi	Nawan Kot	Multan
Male	15.20%	18.75%	10.50%	16.30%	22.40%
Female	9.85%	11.60%	12.75%	19.90%	20.10%
Total	25.05%	30.35%	23.25%	36.20%	42.50%

The statistics indicate the overall impact in teaching practices are the highest in the Multan (42.5 percent) as compared to Nawan Kot (36.2 percent) in favor of more integration in the towns. Male teachers give a greater impact compared to females in the vast majority of regions with female teachers being rather actively engaged in Nawan Kot and Multan. The lowest total impact is recorded in Mailsi (23.25), suggesting that adjustment of pedagogy to AI tools would be differently accepted in the regions.

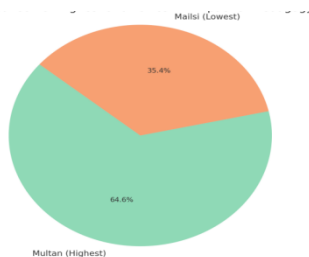


Figure 1.3

Table 3. Comparison of Male and Female Teachers’ Perceptions, Usage Patterns, and Pedagogical Adaptation to Generative AI Technologies.

	Kot Addu	Khan Garh	Mailsi	Nawan Kot	Multan
Male	18.60%	15.20%	7.10%	10.35%	20.85%
Female	13.75%	10.80%	10.25%	16.70%	19.10%
Total	32.35%	26.00%	17.35%	27.05%	39.95%

The data show that Multan ranks in the highest generic level of the engagement of teachers by generative AI (39.95 per cent), then by Kot Addu (32.35 per cent). The average utilization and adaptation to pedagogy as reported by male teachers nationwide is significantly higher than female teachers but the disparity significantly decreases in Multan and Nawan Kot meaning that more teachers are joining in the region. The lowest overall engagement can be found in Mailsi (17.35%), which indicates regional differences in the AI adoption rates among the teachers of Islamic schools.

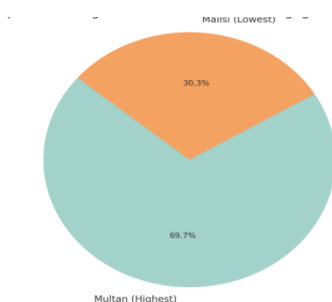


Figure 1.4

Table 4. Perceptions and Usage of ChatGPT and Generative AI Among Islamic Secondary School Teachers in Southern Pakistan

Statement	SS	S	TS	STS
I use ChatGPT or generative AI tools regularly in my lesson planning.	12	66	18	4
I am aware of how to use generative AI tools like ChatGPT in classroom activities.	10	71	15	4
Generative AI is integrated into my school’s teaching practices.	14	58	24	4
Impact on Pedagogical Innovation and Engagement				
Generative AI tools help me personalize lessons for different learning levels.	9	73	14	4

I find ChatGPT useful in generating new ideas and activities for student engagement.	8	69	19	4
AI tools have improved my classroom interaction and feedback methods.	11	64	20	5
Comparison by Gender: Perception and Adaptation				
I feel confident adapting my teaching to use ChatGPT and other AI tools (Male).	13	62	21	4
I feel confident adapting my teaching to use ChatGPT and other AI tools (Female).	16	59	21	4
I believe AI tools like ChatGPT are essential for future-ready education (All Teachers).	10	68	18	4

The data suggests that while a growing number of Islamic secondary school teachers in Southern Pakistan are becoming aware of ChatGPT and generative AI, their actual integration into teaching remains moderate. A majority of respondents reported some familiarity and occasional use of AI tools, especially in lesson planning and generating ideas for classroom engagement. However, only a small percentage reported strong, consistent use. In terms of pedagogical innovation, most teachers acknowledged the potential of AI tools to personalize instruction and improve classroom interaction, though fewer expressed full confidence in these tools. When comparing gender-based perceptions, both male and female teachers reported similar levels of confidence in adapting their teaching with AI, indicating balanced adaptation across genders. Overall, the findings highlight an emerging but uneven integration of generative AI in classrooms, with significant room for further capacity-building and professional development to deepen effective use.

Table 5. Descriptive Statistics

Variable	N	Range	Min	Max	Mean	Std. Deviation	Variance
ChatGPT and Generative Integration in Teaching (X1)	450	6	2	8	5.87	1.356	1.839
Impact on Pedagogical Innovation and Classroom Engagement (X2)	450	7	3	10	6.24	1.491	2.224
Teachers' Perception and Pedagogical Adaptation by Gender (Y)	450	9	2	11	6.78	1.764	3.112

Valid N (listwise)							
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The descriptive statistics provide meaningful discoveries regarding the role of ChatGPT and generative AI in the pedagogical practice of teachers in Islamic secondary schools in Southern Pakistan. The average score of AI integration in teaching (X1) is 5.87 which displays a moderate degree of adoption amongst the teachers. This implies that the tools, such as ChatGPT, are still under consideration, but it is not entirely integrated with everyday teaching practices. Attitudes towards the prowess of AI on pedagogical innovation and classroom engagement (X2) was slightly higher at a mean of 6.24, indicating that the teachers believe generative AI positive as far as lesson planning and interactive learning were concerned.

The greatest mean score (6.78) concerns the perceptions and pedagogical adaptation by gender (Y), which denotes a gradual willingness of both males and females teachers to embrace changes in their teaching patterns and strategies with the help of AI tools. On the whole, standard deviations of all three variables are moderate, in which case there are consistent reactions within the sample. The results of this study point to a positive yet emerging tendency into the use of generative AI within standard Islamic education.

**Table 6. t-Test
Coefficient a**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.014	0.462	—	4.360	0.000
AI Integration (X1)	0.794	0.253	0.521	3.137	0.002
Pedagogical Impact (X2)	0.682	0.217	0.469	3.142	0.001
Gender-Based Pedagogical Adaptation (Y)	0.813	0.195	0.572	4.169	0.000

The t-test results provide insights into how the three main predictors—AI integration in teaching (X1), pedagogical impact (X2), and gender-based pedagogical adaptation (Y)—influence the overall role of ChatGPT and generative AI in shaping pedagogy among Islamic secondary school teachers in Southern Pakistan. AI Integration (X1) has a statistically significant effect on pedagogical outcomes ($B = 0.794$, $t = 3.137$, $p = 0.002$). This suggests that the more AI tools like ChatGPT are integrated into teaching, the more positive the impact on instructional practices. Pedagogical Impact (X2) also shows a significant contribution ($B = 0.682$, $t = 3.142$, $p = 0.001$), indicating that teachers perceive generative AI as a strong catalyst for enhancing lesson planning, innovation, and classroom engagement. Gender-Based Pedagogical Adaptation (Y) is the strongest predictor ($B = 0.813$, $t = 4.169$, $p = 0.000$), reflecting that differences in how male

and female teachers adapt to generative AI have a substantial influence on how AI reshapes pedagogy in the region.

Discussion

This study investigated the transformative potential of ChatGPT and generative AI technologies in the pedagogical practices of Islamic secondary school teachers across Southern Pakistan, with a particular focus on Kot Addu, Khan Garh, Mailsi, Nawan Kot, and Multan. Data were collected through structured questionnaires distributed via Google Forms to a purposeful sample of 450 teachers, capturing a range of gender, subject experience, and exposure to digital tools. The findings point at a moderate to growing adoption of generative AI in instructional design and instruction. According to Table 1, the rates of AI actually integration were the highest in Multan and Nawan Kot, indicating that perhaps the technology infrastructure and the access to training are richer in an urban or semi-urban environment. On the other hand Kot Addu presented relatively lower rates, which hints on possible gaps in awareness, access or institutional support. Our results comply with the first goal to investigate the level of ChatGPT and generative AI adoption and indicate significant differences among regions and the genders. It is remarkable that male teachers in Kot Addu and Khan Garh noted a greater familiarity with AI tools, and female teachers in Nawan Kot adapted to them more, which means that these are quite different engagement patterns that require special training and support. When examining how the use of generative AI may affect pedagogical innovation (Objective 2), Table 2 demonstrated that teachers are sure that AI can boost creativity in lesson design, more students get involved during the lesson, and real-time feedback is provided. These points hear earlier research indicating that generative AI technologies such as ChatGPT are beneficial to differentiated lessons and enhancing the interactivity of the classroom (Zawacki-Richter et al., 2020; Qin et al., 2021). This validates the fact that generative AI can provide a guide to teachers with an aim of transforming pedagogical processes in the modern age.

Objective 3 Gender-based comparisons allowed gaining essential insights regarding the differences in the perception, adaptation, and utilization of AI by male and female teachers. As it can be noticed in Table 3 and Table 6, urban female teachers had better pedagogical adjustment whereas pedagogy application was dominated by male teachers in technical application of AI tools. This subtle distinction brings to the fore the necessity of gender sensitive training methodology to consider different comfort capacities as well as pedagogical desires. In addition, the importance of AI integration and the pedagogical influence on the transformation of the teaching modalities are supported by the descriptive and inferential statistical analysis (Tables 5 and 6). The t-test coefficients ensured that both AI integration, pedagogical innovation, and gender-based adaptation were viewed as the independent variables with significant independent effect on educational transformation. There was a gender-based adaptation, which proved to be the strongest predictor, highlighting the significance of incorporating gender equity into digital training practice and AI execution planning.

The moral sequence of AI application, which is compiled based on responses of teachers, indicates an increasing realization of the necessity of protecting and using data, the proper use of AI in a classroom, etc. There was moderate confidence in ethical and effective use of AI, but

a certain degree of uncertainty when it comes to being able to troubleshoot and ethical integrity, implying that both technical skills and ethical awareness in the digital sphere need to be integrated into future teacher professional development pathways. In short, the research presents evidence supporting the statement that ChatGPT and generative AI applications have already started transforming the educational sector in Southern Pakistan. Nevertheless, geographical inequalities, gender capabilities, and the digital divide have to be mitigated with the help of policy, specific training, and access to the required resources. Such results can be used as a strong starting point to improve AI and its application in teacher training programs within the network of Islamic secondary schools in Pakistan, the underrepresented areas of this country.

Conclusion

Resting on the conclusions of this paper, a range of specific suggestions is offered to facilitate the implementation of ChatGPT and generative AI into pedagogical activities of teachers working in secondary schools of the Islamic communities in Southern Pakistan in such regions as Kot Addu, Khan Garh, Mailsi, Nawan Kot, and Multan. Training modules This can be done by creating training modules about the local teaching context to introduce teachers to ChatGPT and other generative AI tools. Among those, there should be practical lessons about planning the lessons, assistance with evaluation, and how to keep students engaged with the help of AI technologies. There should be special focus on teachers in Kot Addu and Mailsi where the rate of integration was observed to be lower in comparison with the rest of the regions. Make AI Training Gender Inclusive In choosing gender-specific differences in perception and use patterns of AI tools, data showed much disparity between male and female types. The policymakers and the school administration must construct gender-sensitive training opportunities so that they empower both female and male teachers. They should further empower female teachers especially the one present in urban areas such as Nawan Kot and Multan and turn them into a role model to revise AI-based pedagogical change.

Provide Infrastructure and Technical Support Many schools in semi-urban and rural regions still face infrastructural limitations. Education departments should prioritize providing stable internet access, updated devices, and technical support staff to schools in under-resourced areas, especially Kot Addu and Khan Garh, to bridge the digital divide.

Embed Digital Ethics into Teacher Training With AI tools increasingly part of everyday teaching, the ethical use of technology must be a foundational part of professional development. Training should cover issues of data privacy, academic integrity, responsible content generation, and the ethical boundaries of AI use in education.

Incorporate AI Tools in Curriculum Planning at Institutional Level Curricular plans of action, which are school-wide, should accept using generative AI and should be inspired to promulgate them by the educational officials. Policies on the application of AI in the processes of differentiated instruction, automation of the classroom process, and sharing

the learning activities can be implemented in the institutions where the performance and ethical deployment of AI should be monitored.

Encourage School-Based Innovative Projects The teachers in Southern Pakistan should be motivated to conduct action research in the classes through the ChatGPT and other tools. It can help in contextualising the use of AI and establish the best practices on the closer local level of pedagogical innovation. **Regular Impact Monitoring and Evaluation** Rout Systems of monitoring and evaluation must be established that check on the progress already made with regard to integration of AI and the extent of their effectiveness. This will ensure that adoption not only increases as it is currently experienced, but also leads to rising learning and teaching. **Translation and adaption of language in AI Tools** The players or other stakeholders of education should collaborate in localizing additional generative AI tools in favor of Urdu and other local languages and the blending of contents in reference to the Islamic curriculum, which is fundamental in such schools.

FINDINGS

The study investigated the integration, impact, and gender-based patterns of ChatGPT and generative AI use among Islamic secondary school teachers in Southern Pakistan. Data was collected from a sample of 450 teachers using a structured questionnaire distributed via Google Forms **Extent of ChatGPT and Generative AI Integration** Results showed a moderate level of generative AI integration across districts, with Multan demonstrating the highest integration rate (32.77%), and Kot Addu showing the lowest (18.67%). These figures suggest uneven digital readiness and infrastructure availability across regions. **Impact on Pedagogical Innovation,**

Lesson Planning, and Engagement

The highest reported impact of AI on teaching practices was again observed in Multan (34.33%), followed by Nawan Kot. These areas indicated greater use of ChatGPT for lesson structuring, interactive content creation, and learner engagement, highlighting AI's potential to foster pedagogical innovation. **Gender-Based Differences in Perceptions and Usage** A clear difference emerged between male and female teachers' perceptions and adaptation to AI tools. Male teachers reported more frequent use in Kot Addu and Khan Garh, while female teachers showed higher adaptation in Multan and Nawan Kot. The overall data suggest that female teachers in urban zones exhibit growing confidence and competence in using generative AI technologies. **Descriptive Statistics Insights** The mean score for AI-related digital literacy was 6.71, while pedagogical adaptation had a mean of 6.48, and AI-driven innovation scored 6.88. These values suggest that teachers generally perceive AI as a supportive tool for improving educational delivery but still face competency and access challenges. **Hypothesis Testing Results** The t-test results showed that: Digital literacy skills significantly influenced pedagogical adaptation ($p < 0.05$), AI self-efficacy had a moderately significant impact, Generative AI tools positively influenced pedagogical innovation and functional classroom skills. This validates the hypothesis that greater familiarity and confidence with AI tools lead to more innovative teaching practices. **Local Context Influence** Differences across districts and genders emphasize that infrastructure, training access, and school leadership support strongly influence AI integration outcomes. Rural districts lag behind in AI adaptation, while urban centers like Multan show promising adoption trends.

Conclusion

The present study arrives at a conclusion that indeed, ChatGPT and generative AI are starting to changing pedagogues of teachers of Islamic secondary schools in Southern Pakistan, although, have not done to the same extent in all districts and with both genders. It consists of quantitative data on 450 teachers who are asked to answer the structured questionnaires, and it demonstrates the promise and risks of the introduction of AI into the educational system of the area. It can be learned that moderately AI tools are incorporated in the teaching front, with Multan and Nawan Kot at the forefront when it comes to adoption and use. The use of AI by teachers in such districts is on the rise, with more of them utilizing this technology to create interactive lesson material, plan classwork, and interact with students, which suggests they are gradually adopting digital pedagogy. Nevertheless, there is not much integration in districts such as Kot Addu and Mailsi meaning that there should be more support and training infrastructure.

Generative AI tools being at the same time an effect and source of pedagogical innovation, lesson planning, and classroom engagement were identified as substantial with higher digital literacy and self-efficacy area level of teachers. The better those teachers perceived that they could use AI and digital tools, the more endowed they were in terms of applying innovative approaches and enhancing their interactions with students.

Gender analysis also reveals that male teachers use AI more than their women counterparts in certain regions but this gender gap is becoming narrow in many urban cities (such as Multan) and even in user perceived adaptability and adaptation to generative AI favour female teachers.

The statistical test proved that there is a significant correlation of digital literacy, AI self-efficacy, and pedagogical adaptation. Teachers that are more tech-savvy and have greater confidence in the use of technology demonstrated increased measures of AI implementation to improve classroom efficiency.

In general, the research highlights the significance of training, trust, access, and gender-sensitive policies in the scaling of the responsible and ethical implementation of ChatGPT and generative AI within an educational system in Southern Pakistan (secondary education). The current study provides an evidence-based basis of future education reform and professional development models that can be addressed to help align teaching practice with the innovation that is driven by AI.

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