The Role of ICT's in Madrasa Education: Opportunities and Challenges

Sualeha Zafar[1], Farzana Shaheen[2] and Haleema Zikria[3]

Abstract

Technology plays a vital role in student's academic achievement at every level. The purpose of this study was to find the role of ICT in Madrasa education; opportunities and challenges. The study was descriptive in nature; hence, data collected through survey method. The population of the study was all madrasa students of Bahawalpur City. A sample from the population was selected using two-stage cluster random sampling. The total sample size was 365 students. Data was collected by using a self-structured, close-ended questionnaire. The questionnaire was evaluated by field experts. The data collected from survey was analyzed using SPSS software (version 29). Descriptive statistics such as frequency and percentage were used to analyze the acquired data. According to findings of the study, ICT significantly improves students' academic performance, enhances their learning experiences and aids in effective problem solving. It was originated that technology encourage independent learning, increases access to educational resources and bridges the gap between Islamic and Western educational systems. However, students face considerable challenges, particularly due to insufficient technological resources and equipment in madrasas. Additionally, concerns were raised about the misuse and over-reliance on technology. It was recommended that technology should be provided in Madrasa's. Professional trainers should be employed in all madrasa to teach the students that how to use technology in useful way for their learning.

Keywords: Madrasa Education, Technology in Madrasa, Academic Achievement, ICT's

Introduction

The term "Madrasa" comes from Arabic and refers to a place where Islamic education is taught at an advanced level (Afsaruddin, 2016). Traditionally, madrasas have been essential institutions for training religious leaders and scholars within the Islamic community. They offer not only free education but also complimentary boarding and lodging (Ahmed et al., 2024). Masud (2021) highlights that "as an alternative to Western-style education, religious seminaries, madrasas and religious education have historically played a crucial role in fulfilling the educational needs of Islamic society". Today, madrasas are familiar worldwide as key centers of Islamic learning. They operate with their own distinct curricula and teaching methods, separate from the government

[1]*Lecturer, Department of Education, Govt. Sadiq Women College University Bahawalpur.*
 Email: sualeha@gscwu.edu.pk
[2]*Assistant Professor (IPFP), Department of Education, Govt. Sadiq Women College University Bahawalpur.*
Email: farzana.shaheen@gscwu.edu.pk
[3]*Research Scholar, Department of Education, Govt. Sadiq Women College University Bahawalpur.*
Email: haleemazikria4@gmail.com

curricula in Pakistan. Madrasas are independent, philanthropic institutions funded by donations from well-wishers, philanthropists and NGOs and they provide free education, as well as free boarding and meals (Kosar, 2020). Technology has become integral to our everyday lives, simplifying how we connect and learn.

Social media platforms like Facebook, Instagram, WhatsApp and YouTube are excellent for disseminating knowledge about Islamic ethics. These technological advancements, sharing and teaching Islamic values has become faster and more accessible. ICT use in educational settings provides students with more experiences and opportunities, which can enhance their learning. The teachers' proficiency with computers and ICT tools in science education was notably high, facilitating effective teaching. Mngadi (2021) highlighted that, integrating ICT into lessons especially when supported by well-crafted lesson plans, can greatly boost student learning. They stressed the importance of students understanding the processes involved in using ICT.

Statement of the Problem

The aim of this study was to investigate the role of ICT in Madrasa Education: Opportunities and Challenges from Bahawalpur Madrasa students.

Objectives of the Research

The objectives of the research were as follow:
1.   To explore the opportunities that technology offered for enhanced Islamic education.
2.   To identify the challenges faced in integrating technology into Islamic education
3.   To find out the perception and attitude of students towards the use of technology in Islamic education.

Significance of Research

Following were the significance of the study:
1. This research contributes to the advancement of Islamic education by providing insights, recommendations and guidelines.
2. By understanding the challenges, we can develop the strategies to overcome them.

Literature Review
Islamic Education

Islam teaches that education is a powerful way to bring about positive changes in society. It helps us spot our mistakes and correct them. Education is the cornerstone of personal growth, making our minds more open and broadening our horizons. There are two main types of education: worldly and religious. Both are important in shaping a responsible and well-rounded individual. We get worldly education in schools, colleges and universities, guided by skilled teachers. For religious education, we turn to Madrasas, where we learn about spiritual and moral values. Islamic education aims to develop the whole person by fostering both intellectual growth and spiritual enrichment. This holistic approach is designed to help individuals make positive contributions to society (Basheer et al., 2019).

Types of Islamic Educational Institutions

Presently, there are two types of Islamic educational institutions. Maktab/madrasa and jamia are terms used in Islamic education. However, they are often collectively referred to as madrasa. In modern Arabic, "madrasah" refers to any educational institution, whether it's a preschool, college,

or religious seminary and can be either secular or religious (Kennedy & Lee, 2020). In British Muslim communities, the terms "maktab" and "madrasah" are often used interchangeably. These schools usually operate outside of regular school hours and mainly focus on providing Islamic religious education to children aged 4 to 15. Most madrasah are non-profit organizations, run on limited budgets and managed by volunteers (Sahin, 2018). Madrasas have long been key institutions for religious and academic learning, playing a crucial role in the intellectual and spiritual growth of Muslim communities (Adua, 2018). The term "Jamia" is frequently used to refer to a university, but its application can be a bit misleading. While many madrasas use the name Jamia, only a few truly qualify as such (Sahin, 2018).

Madrasa Education

The word "madrasa" comes from Arabic, meaning an institution like a school or college. However, a Madrasa is unique because it is where Islamic or religious education happens. Madrasas are places where Muslim children learn subjects like calculation, Arabic grammar, Islamic history and poetry, with a strong focus on Quran studies and Islamic laws. Madrasa is essentially a school where children in Arab countries go to learn. Madrasas were originally created in the middle ages to educate children and help spread knowledge throughout communities, aiming to reduce illiteracy (Naaz et al., 2023).

Naaz et al. (2023) explore the history of madrasas in their research, offering valuable insights. Madrasas are some of the oldest educational institutions in the world and they were at their peak during the 18th and 19th centuries, thanks to Muslim rulers. However, when the British colonized the subcontinent, the importance of Madrasa education started to fade. People began to see English education as the key to success, leading to a decline in Islamic institutions (Shaukat & Pell, 2020). Madrasa's aim to cultivate a well-rounded Islamic perspective by blending religious teachings with personal and social growth (Prayogi et al., 2022).

Introduction of ICT

Information Communication Technology (ICT) marks a major leap in educational technology, parallel to the revolutionary impact of the blackboard when it was first introduced. Incorporating ICT into madrasas enhances both educational and administrative processes while bridging the gap between traditional teaching methods and modern technology. This approach ensures that students are well-equipped to meet the challenges of today's world (Ishaq et al., 2021).

ICT, which includes computers, the Internet and devices like radios, TVs and projectors, plays a big role in today's education. Research has shown that when used correctly, ICT can boost the quality of education and help students connect what they learn to real-life situations. Learning is a lifelong process where people constantly seek new knowledge, moving beyond traditional methods. Over time, they'll need to embrace new ways of learning, making ICT skills essential (Díaz & Cano, 2019).

Microsoft PowerPoint can be a powerful tool for enhancing the teaching and learning of Arabic and Islamic Studies (Osman et al., 2021). It is a way to combine these elements to make content more engaging and easier to understand. This approach not only makes lessons more interactive but also boosts students' motivation and focus, leading to a more effective and engaging learning experience (Djazilan & Hariani, 2022). Teachers can be a driving force in integrating technology into the classroom. They play a crucial role in using ICT to enhance learning and bring tech tools into everyday teaching (Sheikh et al., 2021).

With the advent of distance and online learning, technology provides us with the tools to acquire and share Islamic knowledge more conveniently and effectively, making it easier to fulfill this sacred obligation (Hoerudin, et al., 2023).

Role of ICT in Madrasa Education
Technology has a lot to offer, from improving the quality of learning and making education more accessible to creating interactive and hands-on teaching methods. Integrating ICT into traditional religious education not only enhances the learning experience but also equips students with skills that are relevant for future challenges, aligning their abilities with today's needs (Mir, 2023).

In integrating technology in Islamic education, it is important to pay attention that the content presented must be in accordance with Islamic religious values. In addition to delivering academic material, eLearning applications and platforms must also consider moral and ethical aspects that are in line with Islamic teachings. By fostering a supportive learning community, ICT also prepares students for collaborative roles in their future careers (Khan, 2020).

When people think of ICT, they often only imagine computers, but it actually includes much more. ICT, which stands for Information and Communication Technology, encompasses all the tools and methods used to facilitate communication and share information (Abubakari, 2021).

The Role of Technology in Improving the Quality of Madrasa Sustainability
Technology plays a crucial role in enhancing religious education by providing essential inputs for effective learning. These inputs include human resources such as madrasa heads, teachers, administrative staff and students, along with material resources like equipment, finances and educational materials. Additionally, software and digital tools are vital, covering aspects such as madrasa organization, laws, regulations and educational programs. These tools support personalized learning enabling students to progress at their own pace and receive tailored assistance, which enhances their overall educational experience (Iqbal & Zaheer, 2020). This supports the constitutional goal of providing education to all children and addressing educational disparities across different socio-economic and geographic groups (Sakti et al., 2021).

Opportunities by Using Technology in Madrasa Education
In the digital age, madrasas play a crucial role in preparing future generations and fostering a spirit of innovation.
- Rapid change requires adaptive and progressive education, with a focus on learning technology skills, information literacy, creativity and collaboration. Only through inclusive education will individuals have equal opportunities in facing an increasingly complex and global future (Halawa & Salmi, 2024).
- Technology streamlines administrative tasks, provides access to diverse educational resources and fosters critical and creative thinking skills in madrasas, enhancing both operational efficiency and student learning outcomes (Iqbal et al., 2022).
- Training related to the use of technology, innovative learning strategies and strengthening understanding of religion and modern science are the keys to success in updating the curriculum and learning approaches (Ali et al., 2024).

Challenges Faced by Madrasa in Adopting Technology
- In the current digital age, the education sector is developing rapidly. Technology has changed the way we communicate, work and school, including this trend. Madrasas, Islamic educational

institutions, face unique challenges in adapting to the digital era while maintaining religious values and teachings (Fathurrochman, 2021).

- To address these challenges, schools can invest in professional development programs for teachers to improve their digital literacy skills. Workshops, online courses, or partnerships with educational technology experts can equip teachers with the knowledge and skills necessary to integrate technology into their teaching practices (Zimmer & Matthews, 2022).
- Madrasa's may face challenges such as a lack of student engagement, difficulty in understanding complex concepts, or the need to make learning more interactive and engaging. The solution could be gamification, which can help increase student engagement, facilitate understanding of concepts through games and make the learning process more fun and interesting (Ali et al., 2024).

Research Methodology
Design of the Study
The research was quantitative in nature. The descriptive method of research was considered appropriate for the study among various other methods. The study conducted through the survey method. Two stage cluster random sampling technique was used for data collection. The population of the study was male and female students of all Bahawalpur madrasas. A sample was 365 students of Bahawalpur madrasa.

Population
Population was a complete set of persons that came under the criteria established by the researcher. The population of the present study was male and female Islamic madrasa's students of Bahawalpur city.

Sample
A sample is a selection of people or objects that are representative of a population. Students from 9 male and 4 female Madrasa were selected as a sample for our study. The population of Bahawalpur madrasa's was 6900. According to the table of Morgan, the 5.2% of 6900 was 365. Therefore, the sample size was 365. Two stage cluster random sampling technique was used for data collection.

Development of Instrument
A self-structured, closed-ended questionnaire was created specifically for this study in order to collect data. The questionnaire was also translated into Urdu for the understanding of students. The questionnaire consisted of two sections. The first one is demographic information and the second one was 34 close-ended questions. These statements were divided into four factors; role of technology, opportunities, challenges and students' perception on integration of technology.

Validity and Reliability of Instrument
According to Naqvi et al. (2022), validity concerns the relevance and applicability of the conclusions drawn from research data. To ensure validity, field experts reviewed the research tool and revise according to their proposed suggestions. This study-assessed reliability using Cronbach's alpha, which resulted in a coefficient of 0.94, demonstrating a high level of measurement consistency.

Data Collection
The questionnaires were distributed among the students. The researcher guided the students about the questionnaire. Sufficient time was given to fill out the questionnaire. 365 questionnaires were distributed among the students and 100% of students returned the questionnaire.

Data Analysis
The data has been presented and analyzed after responses given by respondents. The analyzed data was presented in tabular form that was given below.

Table 1: Descriptive Statistics and Higher Percentage

Sr. No.	Statements	Mean	High %
1.	Technology is playing an important role in madrasa education.	3.4192	55.4
2.	The use of technology can make a student more independent and confident.	3.2384	53.6
3.	Use of technology is essential for madrasa education.	3.3397	63.5
4.	Technology helps spread Islamic knowledge worldwide.	3.3781	61.7
5.	Technology enhances the learning experience with interactive tools (Facebook, Instagram).	2.8192	46.3
6.	Technology help create self-learning plan for madrasa education.	3.1123	53.7
7.	Technology helps in bringing the gap between Islamic school and western education.	3.3260	67.6
8.	Technology helps in the memorization of the Quran.	3.0027	48.9
9.	Technology replaces the role of a teacher in madrasa education.	2.7863	39.5
10.	Technology fosters critical thinking in madrasa students.	3.0712	47.1
11.	Technology gives students access to course materials.	3.5644	68.0
12.	Technology can prepare students for success in a rapidly changing world while maintaining Islamic authority and tradition.	3.2055	54.2
13.	Technology helps schools to connect with educational institutions and scholars around the world.	3.6137	67.3
14.	Online classes provide opportunities for madrasa students to connect with teachers and peers.	3.6548	71.8
15.	Technology empowers madrasa students with digital literacy skills for future.	3.4493	63.9
16.	Mobile apps and platforms facilitate collaboration among madrasa students and teachers.	3.0849	45.0
17.	Online classes help increase access to education for madrasa students.	3.3479	52.7
18.	Technology enables madrasa students to analyze complex issues and solve their problems.	3.9315	81.6
19.	Technology stores the importance of face-to-face learning and Human interaction.	3.5233	68.3
20.	Mobile technology contributes to the preservation of Islamic knowledge in madrasa.	3.6411	73.0
21.	Mobile device enables students to access educational content anytime or anywhere.	3.4685	68.3
22.	Madrasa students are not trained to use technology.	2.8849	49.1
23.	Madrasa curriculum may not be designed to incorporate technology.	2.7123	44.6

24.	Madrasa often have limited resources, making it difficult to invest technology.	3.4110	64.2
25.	Some communities may be hesitant to adopt technically in religious education.	3.6712	72.8
26.	Some madrasa students get away from their position due to misuse of technology.	3.5534	71.0
27.	Excessive use of technology has negative impact on madrasa students.	3.6904	74.6
28.	Some madrasa students get away from their position due to misuse of technology.	3.9753	82.6
29.	Without use of technology students do not learn with their own learning.	2.1671	59.5
30.	ICT help me get better results in my subjects.	3.8740	80.6
31.	ICT will help me understand the subject material more deeply.	3.6795	56.2
32.	ICT motivates me to explore many topics I may not have seen before.	4.0055	81.1
33.	ICT allows me to collaborate with others easily, both on and outside of the madrasa.	3.6740	67.5
34.	ICT improve my career or employment prospect in the long term.	3.5178	69.0

This table presents a summary of perceptions regarding the role of technology in madrasa education, where the mean score (on a Likert scale) reflects the level of agreement with each statement and the high % indicates the percentage of respondents who rated the statement highly (above a certain threshold, likely 4 or 5). Analysis (mean = 3.42, 55.4% highly agree) shows a significant number of respondents believe that technology is playing an important role in madrasa education. 3.24 mean score of making students independent and confident presents the **o**ver half of the respondents (53.6%) agree that technology can make a student more independent and confident. A notable portion (63.5%) believes that technology is essential for madrasa education 3.34 Mean score indicating a strong acceptance of its importance. Technology is seen as a tool to spread Islamic knowledge worldwide (mean = 3.38, 61.7% agree). According to mean, score 3.33 presents that respondents also see technology as helpful in bridging the gap between Islamic and Western education.

Challenges and limitations of technology 3.98 mean score shows that there is concern about students getting away from their position due to the misuse of technology and 82.6% agreed with this statement. A significant majority (74.6%) agrees that excessive use of technology has a negative impact on madrasa students (mean = 3.69). Limited resources in madrasas make it difficult to invest in technology according to mean scores= 3.41 and 64.2% agreed that limited resources are the challenging for learners. Communities may be hesitant to adopt technology in religious education according to mean = 3.67.

According to technology-enhanced learning results shows a substantial number (80.6%) agree that ICT helps achieve better results in subjects (mean = 3.87). ICT is believed to help understand subject material more deeply (mean = 3.68, 56.2% agree). A majority (81.1%) agree that ICT motivates exploration of new topics (mean = 4.01), reflecting its role in broadening learning horizons.

The role of interactive tools like Facebook and Instagram is rated lower, with a mean of 2.82 and 46.3% agreeing that they enhance the learning experience. There's low agreement (mean = 2.79, 39.5%) with the statement that technology can replace the role of a teacher in madrasa education, reflecting the importance of human interaction and Prophet (SAW) profession (teaching) importance.

Table 2: Independent Samples _t_-Test Results

	Gender of respondent	N	Mean	Std. Deviation	_T_	Sig. (2-tailed)
Role of Technology	Male	158	3.1806	.91574	72.532	.000
	Female	207	3.2523	.79421		
Opportunities	Male	158	3.3339	.68253	89.312	
	Female	207	3.6492	.77420		
Challenges	Male	158	3.1669	.87808	74.230	
	Female	207	3.3279	.80231		
ICT_usage	Male	158	3.7797	.60368	137.511	
	Female	207	3.7275	.44804		

Table 2 presents the results of an independent samples t-test comparing male and female respondents on four variables: role of technology, opportunities, challenges and ICT usage.

The role of technology results shows the p-value (0.000) indicates a statistically significant difference between males and females in their perception of the role of technology. Females (M = 3.25) tend to have a slightly higher mean score than males (M = 3.18), showing that females perceive the role of technology slightly more positively.

There is a notable difference in the mean scores between males and females. Females (M = 3.65) perceive more opportunities related to the role of technology compared to males (M = 3.33). Given the high t-value, this difference is likely statistically significant. The difference in mean scores indicates that females (M = 3.33) report facing more challenges than males (M = 3.17) concerning the role of technology in madrasa education. The mean scores for ICT usage are quite similar between males (M = 3.78) and females (M = 3.73), suggesting that both genders have similar levels of ICT usage, though the high t-value may indicate this difference is statistically significant.

Table 3: Pearson correlation coefficients between four variables

		Role of Technology	Opportunities	Challenges	ICT_usage
Role of Technology	Pearson Correlation	1	.836[**]	.894[**]	.150[**]
	Sig. (2-tailed)		.000	.000	.004
	N	365	365	365	365
Opportunities	Pearson Correlation	.836[**]	1	.786[**]	.142[**]
	Sig. (2-tailed)	.000		.000	.007
	N	365	365	365	365
Challenges	Pearson Correlation	.894[**]	.786[**]	1	.116[*]
	Sig. (2-tailed)	.000	.000		.026
	N	365	365	365	365
ICT_usage	Pearson Correlation	.150[**]	.142[**]	.116[*]	1
	Sig. (2-tailed)	.004	.007	.026	
	N	365	365	365	365

this table presents Pearson correlation coefficients between four variables: role of technology, opportunities, challenges and ICT usage in the context of madrasa education.

Correlations results present there is a strong positive correlation (r = 0.836, p < 0.01), indicating that as the perceived role of technology increases; the opportunities in madrasa education are likely to increase as well.

There is an even stronger positive correlation (r = 0.894, p < 0.01), suggesting that a higher perceived role of technology is also associated with more challenges in the madrasa education context. The correlation is positive but much weaker (r = 0.150, p < 0.01), meaning that while there is a significant relationship among the use of ICT tools has a relatively small correlation with the perceived role of technology.

The correlation is moderately strong (r = 0.786, p < 0.01), indicating that as opportunities increase, challenges also tend to increase. There is a weak but significant positive correlation (r = 0.142, p < 0.01), suggesting that opportunities are slightly related to ICT usage. The correlation is weak but significant (r = 0.116, p < 0.05), indicating that there is a small but positive relationship between the challenges and ICT usage in madrasa education.

Overall, the data show that technology plays a significant role in shaping both opportunities and challenges in madrasa education, but ICT usage itself has a relatively smaller impact on these perceptions.

Discussion

Technology is crucial for enhancing students' academic performance at all educational levels. This research specifically focuses on the use of technology in Madrasa education at the Bahawalpur level. The study aims to explore the role of technology in madrasas throughout Bahawalpur, to promote self-awareness, self-management, social awareness and social skills through technological means and to provide recommendations for effectively incorporating technology into Madrasa education. According to the findings, the use of technology is widely acknowledged as essential for madrasa education, with respondents recognizing its role in spreading Islamic knowledge globally and bridging gaps between Islamic and Western education. However, challenges such as the misuse of technology, limited resources and community uncertainty were seen. The research concludes that while technology fosters independence, enhances learning and improves academic outcomes, careful management and resource allocation are needed to overcome barriers and integrate technology effectively into madrasa education.

Findings

Findings of the study demonstrate that there is strong consent among students on the role of ICT in Madrasa according to first objective that related to opportunities. They view technology as a crucial element of Madrasa Education. They acknowledge that technology is essential not only for enhancing Islamic education but also for spreading Islamic knowledge globally. Most of the students believe that technology equips students with vital digital skills for the future and increases educational access through online classes, which also enhance problem-solving capabilities. In discussing the results of this study in relation to previous research, it becomes evident that the findings align with broader trends in educational technology integration, particularly within faith-based education systems. For instance, research by Afshari et al. (2009) emphasized that ICT enhances critical thinking and problem-solving skills, similar to the findings of this study where students reported technology's role in fostering self-directed learning and enhancing problem-solving capabilities.

According to second objective, the lack of technology in Madrasas poses significant challenges for students, limiting their ability to reach their full potential. The lack of proper technological

equipment, compounded by the limited resources of seminaries, exacerbates these difficulties. The recognition of technology as a crucial element in bridging the gap between Islamic and Western education reflects a shift in educational paradigms, where madrasas are gradually moving towards modern instructive practices. This change is pinpointing of a growing social acceptance of digital integration in traditionally conservative educational systems. These challenges highlight the tension between maintaining religious traditions and embracing modernity, reflecting broader societal concerns about how to balance religious education with the demands of the digital age. Studies by Lin et al. (2023) also indicated that ICT helps in promoting global engagement and understanding of Islamic teachings, aligning with the present study's findings that students believe technology facilitates the spread of Islamic knowledge worldwide.

However, there is also concern that when technology is available, some students may misuse it to avoid their responsibilities, underscoring the need for a balanced and thoughtful approach to integrating technology in Madrasa education. Student's perspective they think that adding technology to Madrasa education could really enhance their learning experiences. They believe it will help them understand their lessons better, encourage them to dive into new subjects and build their independence and confidence. In terms of challenges, the current study where students highlighted inadequate technological equipment and limited resources as major barriers. Similarly, the reluctance of some communities to embrace technology in religious education, as noted in this study, echoes findings by researchers such as (Abubakari, 2021), who pointed out the cultural resistance to technology adoption in traditional education settings.

Conclusion

The study expose that the majority of madrasa students acknowledge the pivotal role of technology in enhancing their educational experience. Technology is seen as an essential tool for fostering independence, bridging the gap between Islamic and Western education and improving digital literacy. It also plays a significant role in providing access to course materials, facilitating self-directed learning and preparing students for future challenges. Despite these advantages, students face notable challenges, such as insufficient technological resources and equipment in madrasas. Additionally, concerns about the potential misuse of technology and its excessive use were raised. These challenges underscore the need for a balanced and thoughtful approach to integrating technology into madrasa education.

Recommendations

- Government might be equipping Madrasa with necessary hardware and provide training programs to ensure that teachers and students are comfortable with using ICT tools and resources.

- Professional trainers should be employed to teach both students and teachers about the effective usage of technology in educational software that is aligning with the curriculum to make learning more interactive.

- Madrasa might be conducting live online classes using video conferences tools like zoom or Google meet to connect teachers and students for real time interactive learning sessions.

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