



Digital Transformation and Its Impact on Developing Quran and Islamic Education Curricula at the Primary Level

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ABSTRACT

This research aims to examine the impact of digital transformation on the development of the Quran and Islamic education curricula for primary school students. A quasi-experimental approach was adopted, with the research sample divided into two equal groups: an experimental group that used digital transformation in teaching and a control group that used traditional methods. Research tools included an achievement test to measure memorization, comprehension, and application, and a scale to measure Quranic and religious comprehension and understanding. The validity and reliability of the tools were statistically verified. The results showed a statistically significant advantage for the experimental group in academic achievement and Quranic and religious comprehension, confirming the effectiveness of integrating digital technologies and interactive media in improving student learning and skills. The study also highlighted the importance of training teachers to use technology and providing a supportive learning environment that includes modern digital tools and software. The study concludes that digital transformation represents an effective tool for developing religious curricula and improving educational performance. It emphasizes the need to continue updating digital curricula, supporting infrastructure, and designing digital content that is compatible with Islamic values and the objectives of primary education.

Keywords: Digital transformation, Holy Quran, Islamic education.

INTRODUCTION

In recent years, educational institutions have witnessed a rapid digital transformation across various aspects of the educational process, from teaching methods and learning tools to curriculum design and the evaluation of learning outcomes. This transformation has presented new challenges and opportunities for school curricula, particularly those for the Holy Quran and Islamic education at the primary level, necessitating an examination of their responsiveness to the demands of the digital age (Zahraini et al., 2025; Ehab, 2019 Syukri & Rosyad, 2025).

Despite the introduction of some electronic media and digital platforms in teaching the Holy Quran and Islamic education, the level of digital interaction within these curricula remains limited in many schools. This may affect the achievement of the subject's objectives in building a balanced, faith-based character in students (Papakostas, 2024). Hence, the research problem is defined in the following main question:

What is the impact of digital transformation on the development of curricula for the Holy Quran and Islamic education in the primary stage?

1. This leads to a number of sub-questions, including:
2. To what extent have the components of digital transformation been incorporated into the curricula of the Holy Quran and Islamic education in the primary stage?
3. What are the main challenges facing the use of digital technologies in these curricula?
4. What impact has digital transformation had on developing the objectives, content, teaching methods, and assessment of Quranic and Islamic education curricula?
5. How can digital transformation be utilized to enhance the effectiveness of Quranic learning and Islamic values among primary school students?

The Importance of Research

The importance of this research stems from its focus on a contemporary topic that aligns with modern educational trends in light of the digital revolution the world is witnessing today. Digital transformation has become an essential part of the modern education system, offering significant potential for developing teaching and learning methods, improving the quality of the educational process, and achieving efficiency in conveying knowledge and values to learners. Hence, the need arises to study the impact of this transformation on educational

curricula, particularly those related to the Holy Quran and Islamic education at the primary level, given their pivotal role in shaping the learner's religious and moral character from a young age.

The importance of this research also lies in its aim to reveal the extent to which the Holy Quran and Islamic education curricula respond to the requirements of digital transformation and to analyze their ability to utilize modern technologies in presenting religious concepts and values in an engaging and impactful manner that resonates with learners in the age of technology. Incorporating interactive media and e-learning platforms into Quranic education can contribute to making learning more dynamic and interactive, and enhance learners' motivation to study the Holy Quran and understand its meanings. The research is also significant because it seeks to offer a scientific framework for developing these curricula in line with technological advancements without compromising the core content and educational objectives. This is achieved by employing digital transformation in a well-considered manner that reinforces Islamic values and fosters creative and critical thinking among students. Furthermore, its findings can guide policymakers and specialists in curriculum and educational technology towards adopting effective digital strategies in teaching Islamic education, which will positively impact the quality of religious education at the primary level.

Research Objective

This research aims to identify the digital transformation and its impact on developing the curricula for the Holy Quran and Islamic education at the primary level.

Research Scope

Thematic Scope: The digital transformation and its impact on developing the curricula for the Holy Quran and Islamic education at the primary level.

Geographical Scope: Iraq – Baghdad.

Temporal Scope: The research was conducted and implemented during the 2025 academic year.

Definition of Terms

Digital Transformation: It is the process of integrating digital technology into all aspects of the educational institution to change the way education is delivered and improve the quality of learning (Wahyuningrum, & Latifah, 2020).

It is the use of digital tools and interactive media in the educational process with the aim of enhancing the efficiency of educational performance and achieving continuous learning for students (Saleh, & AlAli, 2022; Al-Thamali, 2021). It is the integration of digital technology across all areas of the institution, resulting in a fundamental change in how work is done and how educational value is delivered to students (Al Alenezi, 2023; Halfawi, 2011).

The Holy Quran and Islamic Education

The Holy Quran is the word of God revealed to the Prophet Muhammad (peace be upon him) as guidance and mercy for all mankind. It is the primary source of legislation and education in Islam (Wani, 2023; Al-Sartawi, 2014; Ordu, 2021).

Islamic education is the process of developing a student's religious, moral, and intellectual values according to the teachings of Islam. It includes teaching the Holy Quran and the Sunnah (Prophetic traditions) (Ismail, 2016; Sharhan, 2010; Bakar & Rahim, 2021).

PREVIOUS STUDIES

The Concept of Digital Transformation in Education

Digital transformation is one of the most prominent aspects of change witnessed in the contemporary world, encompassing various economic, social, and cultural spheres of life. Education has been particularly affected by this transformation (Akour, 2022). Digital transformation in education refers to the shift from traditional educational systems to an integrated learning environment that relies on digital technology for managing educational content, teaching methods, assessment, and interaction between teachers and learners (Oliveira, 2022; Al-Shanwan, 2021). This concept indicates a comprehensive process that goes beyond simply using computers or smart devices in education. It involves reformulating the philosophy and objectives of education to align with the characteristics of the digital age. Digital transformation seeks to establish an educational culture based on creativity, participation, self-directed learning, and open-source resources. This helps prepare a generation capable of consciously engaging with technology and using it to support lifelong learning (Khalil, 2019).

Global experience has shown that digital transformation can bring about a qualitative leap in the quality of education and its outcomes. It makes the educational process more flexible and interactive and provides equal opportunities to access knowledge without constraints of time or place. Furthermore, the use of diverse digital resources helps motivate learners and increases their understanding and comprehension compared with traditional methods based on rote learning and memorization (Tan, 2011; Al-Samadi, 2021).

The Importance of Digital Transformation in Curriculum Development

The importance of digital transformation lies in its role as a tool for modernizing educational curricula and making them more relevant to learners' realities and the needs of contemporary society. Modern curricula are no longer limited to knowledge content alone; they are now designed to develop life skills and cognitive abilities. This can be achieved through the intelligent integration of technology into all elements of the curriculum (Ingram, 2014).

Digital transformation enables curriculum designers to continuously update content to keep pace with developments and to utilize digital resources to clarify complex concepts in visual and interactive ways. It also contributes to the development of teaching methods through interactive presentations, simulations, educational videos, and online tests, making education more engaging and effective (Artal, 2018; Al-Qaidah, 2023). Furthermore, digital transformation helps diversify learning resources. Learners no longer rely solely on textbooks but now have access to a wide range of platforms, websites, and digital libraries that enable self-directed learning. This fosters a spirit of inquiry and discovery and strengthens self-confidence, educational goals perfectly aligned with the philosophy of Islamic education, which calls for seeking knowledge through contemplation and reflection. (Masuwai, Zulkifli & Hamzah, 2024; Al-Mutawakkil, 2022).

The Curricula of the Holy Quran and Islamic Education and Their Objectives

The curricula of the Holy Quran and Islamic education are among the most important educational approaches aimed at developing a well-rounded Muslim personality, both in thought and behavior. They strive to instill faith in God and love for the Holy Quran in learners' hearts, and to cultivate moral and social values that guide their behavior toward goodness and righteousness. These curricula also focus on establishing sound doctrine, teaching acts of worship and social interactions, and deepening understanding of the Prophet's biography, thus

ensuring the development of a faithful, conscious, and responsible individual (Hendawi et al., 2024; Al-Mutairi, 2022) At the primary level, these curricula acquire even greater importance because they represent the foundation for shaping a child's religious orientation. Early childhood is the most suitable time to instill Islamic principles and values in an effective educational manner, making religion an integral part of the learner's awareness and daily conduct. Hence the need for continuous development of these curricula, enabling them to address learners' minds in contemporary language without compromising their authenticity and spiritual content.

The Impact of Digital Transformation on Developing Quranic and Islamic Education Curricula

Digital transformation offers significant opportunities to develop Quranic and Islamic education curricula by using modern educational media to present religious topics and concepts in an interactive and engaging manner (Sanusi, 2024). For example, digital programs and applications can help students memorize and recite the Quran more easily by offering features such as repeated listening and audio comparison, making the memorization process more accurate and enjoyable. (Bounoua & Tahrichi, 2018; Al-Khattab et al., 2023).

Similarly, virtual reality and multimedia can be used to present scenes from the Prophet's biography or Quranic stories in an interactive digital environment that stimulates the imagination and makes the meanings more accessible. Furthermore, online educational platforms enable the creation of digital classrooms for sharing activities, tests, and discussions on Islamic values, contributing to the development of analytical religious thinking among learners (Ahmad & Khalid, 2024; Mahmoud, 2020). The impact of digital transformation is not limited to education; it also strengthens students' emotional and ethical dimensions. Interacting with faith-based digital content helps to instill values in behavior by linking Islamic concepts to the learner's personal experience (Nurhasanah, 2024).

The Teacher's Role in Digital Transformation

Teachers are the cornerstone of any successful digital transformation process. In the context of religious education, their role becomes even more crucial, as it extends beyond simply transmitting knowledge to include instilling values and shaping attitudes. Therefore, teachers are required to reconcile technology with ethical content and use digital tools in ways that serve

educational objectives without compromising the sanctity of the subject matter (Rabiu, Merican, & Al Murshid, 2025; Madkour, 2020).

In the digital environment, the teacher transforms from a mere transmitter of information into a guide and mentor who helps learners use digital resources effectively and connects their learning to practical realities. Furthermore, teachers should serve as role models in the conscious use of technology, demonstrating through their behavior how knowledge and piety, as well as modernity and authentic Islamic values, can be reconciled (Lee, 2018; Watfa, 2019).

Digital Transformation as an Approach to Enhancing Religious Education

Integrating digital transformation into Quranic and Islamic education does not imply a change in doctrinal content, but rather a development of methods and approaches that enhance the quality and impact of the educational process. Modern technologies enable accurate and comprehensive assessment of student performance through electronic measurement tools, and provide opportunities for immediate feedback that contributes to improving learning outcomes (Syukri & Rosyad, 2025; Sugihyono, 2025).

RESEARCH PROCEDURES

Experimental Design

The experimental design was adopted for the study, in which the research sample was divided into two groups: experimental and control, to examine the effect of digital transformation on teaching the curricula of the Holy Quran and Islamic education.

Table 1: *Experimental Design of the Research*

The goal	Intervention	The group
Measuring the impact of technology on student achievement and curriculum understanding	Using digital transformation (educational applications, interactive presentations, multimedia)	Experimental
Comparison to identify differences resulting from digital intervention	The traditional method (explanation and classroom discussion only)	Controlled

Research Population

The research population consists of all primary school students in Al-Karkh First District who study the Holy Quran and Islamic Education within the official curriculum, focusing on grades three through six.

Research Sample

The research relied on a homogeneous, selected sample representative of the study population, divided into two groups with equivalent basic characteristics.

Table 2: *Number of individuals in the research sample*

Percentage	number	group
50%	30	Control group
50%	30	Total group
100%	60	Experimental group

Group Equivalence

To ensure the equivalence of the two groups in variables that may affect the research results, tests were conducted on:

- Chronological age in months
- Islamic Studies Grade (Previous Academic Achievement)
- Students' Overall GPA
- IQ Score
- Pre-test of Memorization and Comprehension Skills
- Parental Achievement

Table 3: *Arithmetic means and standard deviations of the two groups according to the equivalence variables.*

Significance	value of t	Control group	Experimental group	variable
Not significant	0.62	110 ± 6.8	111 ± 6.5	Age (months)

Not significant	0.41	77 ± 7.9	78 ± 8.2	Subject grade
Not significant	0.51	84 ± 5.6	85 ± 5.4	overall average
Not significant	0.29	101 ± 9.8	102 ± 10.1	intelligence quotient
Not significant	0.33	71 ± 9.1	70 ± 9.5	Pre-test

Table 4: *Achievement of (father and mother) for the two research groups*

Control group	Experimental group	Level of achievement
secondary, 42% university, 43% 15% intermediate	secondary, 40% university, 45% 15% intermediate	father
secondary, 37% university, 48% 15% intermediate	secondary, 35% university, 50% 15% intermediate	mother

The tables above show that the two groups are equivalent with respect to the underlying variables, thereby ensuring the validity of the subsequent experimental comparison.

Research Requirements

The research requirements were prepared in two formats:

First format: Digital tools used in the experimental group (Quranic applications, interactive presentations, educational videos)

Second format – Traditional Method: Traditional teaching methods involving explanation and classroom discussion in the control group.

Research Instruments

Achievement Test

An achievement test was prepared to measure memorization, comprehension, and recitation skills related to the Holy Quran, as well as understanding basic concepts in Islamic education.

Table 5: *Achievement Test Specifications Table*

Difficulty level	relative weight	Number of paragraphs	Item
middle	30%	10	Preservation
Medium-Difficult	40%	10	Understanding
difficult	30%	5	The application

Test Validity

The test's validity was confirmed through a review of the scientific literature, consultation with experts in Islamic education, and ensuring that its content aligns with the curriculum objectives.

Pilot Test

A pilot test was conducted on (10%) of the research sample to verify the clarity of the items, the ease of answering, and the suitability of the test for the primary stage.

Statistical Analysis of Test Items

Each item was analyzed for difficulty index, discrimination index, and instrument reliability to ensure the test's psychometric quality.

Test Reliability

The test's reliability was calculated using Cronbach's alpha, which yielded 0.88, indicating a high degree of reliability.

Post-application of research instruments

After the experiment ended, the achievement test and the digital scale were reapplied to both groups to measure changes in student achievement and to assess the impact of digital transformation on learning the Holy Quran and Islamic education.

Statistical Methods

The following statistical methods were used to analyze the data

Arithmetic mean and standard deviation.

Independent samples t-test.

Paired samples t-test (before and after the experiment

Analysis of variance (ANOVA) when more than one variable needs to be compared

Correlation coefficient to analyze the relationships between different variables

Results presentation, and discussion

Results Related to the First Null Hypothesis

Statement of the First Hypothesis:

"There is no statistically significant difference between the average scores of students in the achievement test for the subject of the Holy Quran and Islamic Education in the primary stage between the experimental group that used digital transformation and the control group that used the traditional method".

Table 6: *Results of the T-test for the average scores of the two research groups in the achievement test*

Statistical significance	value of t	standard deviation	arithmetic mean	Number of students	The group
0.05	4.32	5.2	85.6	30	empiricism
		6.1	78.4	30	Control group

The results show a statistically significant difference in mean scores between the two groups, favoring the experimental group that used digital transformation. This indicates that the use of digital applications, interactive presentations, and educational videos improved students' achievement and understanding of the Holy Quran and Islamic education compared with traditional methods, supporting the effectiveness of integrating digital transformation into the educational process.

Results related to the second null hypothesis

Text of the second null hypothesis:

"There is no statistically significant difference between the average scores of students in the comprehension and understanding test for the Holy Quran and Islamic Education between the experimental group and the control group after the application of digital transformation.

Table 7: *Results of the t-test for the average scores of the two research groups in the comprehension and understanding test*

Statistical significance	value of t	standard deviation	arithmetic mean	Number of students	group
0.05	3.87	4.9	82.3	30	experimental group
		5.4	75.1	30	Control group

The results indicate a statistically significant advantage for the experimental group, showing that digital transformation enhanced students' understanding of religious concepts and Qur'anic content and gave them a greater ability to engage with the material interactively. These results indicate that integrating technology is not limited to improving memorization but also enhances students' cognitive and intellectual development, underscoring the importance of updating curricula and teaching methods to align with the digital age.

CONCLUSIONS

1. Digital transformation in education achieves tangible positive results in students' achievement and understanding of the Quran and Islamic education curricula.
2. The use of educational applications and interactive digital media increases student engagement and motivates them towards self-directed and continuous learning.
3. The statistically significant difference between the two groups confirms the effectiveness of integrating technology into the educational process compared to traditional methods.
4. The equivalence of the two groups in key variables such as age, prior achievement, and intellectual level confirms the validity of the experimental results.

Recommendations

1. Gradually integrate digital transformation into the Quran and Islamic education curricula in all primary schools.
2. Train teachers in the use of digital educational technologies, such as interactive applications and educational videos, to enhance teaching effectiveness.
3. Develop reliable digital content that aligns with official curriculum objectives and educational and ethical standards.
4. Support school infrastructure (computers, internet access, interactive screens) to ensure the successful implementation of digital transformation.
5. Encourage students to use digital learning tools responsibly and safely, guiding them to use only trusted sources.
6. Conduct future studies to assess the impact of digital transformation on students' critical thinking skills and religious values.

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