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Zakat Calculator Application: Enhancing the Academic Performance of Islamic Economics Students

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A B S T R A C T

Zakat holds profound significance in the Muslim community. Its intricate calculations and diverse categories, however, often pose challenges for individuals striving to fulfill this religious obligation accurately. This research investigates the design, development, and impact of a Zakat Calculator Application on Islamic economics students' academic performance at UNU Blitar. By leveraging technology, this study aims to bridge the gap between traditional learning methods and the evolving needs of students in grasping the complexities of zakat. ADDIE development model (Analysis, Design, Development, Implementation, and Evaluation) guided the application's creation and evaluation. A sample of 60 students from a population of 90 was selected through simple random sampling. Data analysis involved descriptive statistics and an independent two-sample t-test to compare the performance of students using the application with those relying on traditional lecture and discussion methods. The Zakat Calculator Application demonstrated high validity and effectiveness. Expert evaluations yielded excellent scores (media experts: 96.25%, material and strategy experts: 95.55%, curriculum practitioners: 94.69%, lesson plan experts: 92.00%). The t-test results revealed significant improvement in academic performance for students using the application. The experimental group achieved a high academic performance level of 87.5%, compared to 50.5% in the control group. In conclusion, Zakat Calculator Application effectively enhances the academic performance of Islamic economics students. It simplifies zakat calculations, improves understanding of zakat regulations, and promotes compliance with Islamic principles. The application is recommended as a valuable learning tool in Islamic economics education.

1. Introduction

Zakat, the third pillar of Islam, holds profound significance in the Muslim community. It is not merely an act of charity but a fundamental religious obligation, deeply ingrained in the socio-economic fabric of Islamic societies. (Hall, 2024) The term "zakat" itself implies purification and growth, signifying that by fulfilling this obligation, Muslims purify their wealth and contribute to the overall well-being of the community. (Kaur, 2022) Zakat is a multifaceted concept, encompassing various categories and intricate calculations. Its proper implementation requires a thorough understanding of Islamic jurisprudence, encompassing diverse areas such as income, trade, agriculture, and livestock. (Koh, 2022) This complexity often poses challenges for individuals striving to fulfill their zakat obligations accurately, highlighting the need for innovative tools to simplify the process and enhance comprehension.

In the digital age, technology has become an integral part of various aspects of life, including education. (Ogruk Maz, 2023) The development of

mobile applications has opened up new avenues for enhancing learning experiences and improving academic performance. (Putra, 2024) In the field of Islamic economics, understanding the concept of zakat is crucial, but students often face challenges in comprehending the complex calculations and regulations associated with it. (Yusuf, 2022) This research focuses on the development and evaluation of a Zakat Calculator Application designed to assist students in understanding and calculating zakat. The application aims to simplify the process, enhance comprehension, and promote compliance with Islamic principles. (Sanga, 2022) By providing a user-friendly tool, the application seeks to improve the academic performance of Islamic economics students.

Traditional methods of teaching zakat often involve lectures, discussions, and manual calculations. While these methods have their merits, they may not always be sufficient to address the challenges faced by students in grasping the complexities of zakat. (Lim, 2023) Manual calculations can be tedious and prone to errors, leading to confusion and a lack of compliance. (Kromann, 2024) Moreover, traditional methods may not fully cater to the diverse learning styles of students, potentially hindering their understanding and motivation. A Zakat Calculator Application has the potential to overcome these challenges by providing a user-friendly and interactive platform for learning and calculating zakat. Such an application can automate the calculation process, reducing the risk of errors and ensuring accuracy. (Embodo, 2024) It can also incorporate educational resources, such as explanations of zakat regulations and nisab (minimum threshold) values, to enhance understanding.

The potential benefits of a Zakat Calculator Application extend beyond simplifying calculations and enhancing comprehension. By promoting compliance with Islamic principles, such an application can contribute to the overall spiritual and social well-being of the Muslim community. (Bolli, 2023) It can also empower individuals to take control of their zakat obligations, fostering a sense of responsibility and ownership. (Johnson, 2024) In addition, a Zakat Calculator Application can serve as a valuable tool for Islamic economics educators. It can complement traditional teaching methods, providing a more engaging and interactive learning experience for students. It can also facilitate assessment and evaluation, allowing educators to track students' progress and identify areas where they may need additional support. (Zamora, 2022) This research aims to investigate the design, development, and impact of a Zakat Calculator Application on Islamic economics students' academic performance.

2. Literature Review

Zakat is one of the five pillars of Islam and holds a significant position in Islamic economics. It is an obligatory charitable contribution to the wealth of Muslims, aimed at purifying their possessions and ensuring social welfare. (Ogruk Maz, 2023) The concept of zakat is deeply rooted in the Quran and Hadith (the sayings and traditions of Prophet Muhammad). Zakat serves as a mechanism for wealth redistribution and poverty alleviation in Islamic societies. (Koh, 2022) It promotes social justice and economic equality by ensuring that the wealthier members of the community contribute to the well-being of the less fortunate. Zakat also fosters a sense of community and solidarity, as it encourages individuals to fulfill their social responsibilities and contribute to the common good. In Islamic economics, zakat is not merely a charitable act but an integral part of the economic system. (Johnson, 2024) It is considered a form of taxation that is obligatory upon all eligible Muslims. The collection and distribution of zakat are governed by specific rules and regulations, ensuring transparency and accountability.

Despite its importance, students often find it challenging to grasp the intricacies of zakat calculations and regulations. (Embodo, 2024) The

diverse types of zakat, such as zakat on income, trade, agriculture, and livestock, involve varying nisab (minimum thresholds) and haul (possession periods). Manual calculations can be complex and prone to errors, leading to confusion and a lack of compliance. The challenges in understanding zakat can be attributed to several factors. Firstly, the concept of zakat is multifaceted and encompasses various categories and subcategories. Each category has its own set of rules and regulations, which can be overwhelming for students who are new to the subject. Secondly, the calculation of zakat involves mathematical formulas and procedures that can be complex and time-consuming. Students may struggle with these calculations, especially if they lack a strong mathematical background. Thirdly, the traditional methods of teaching zakat may not always be effective in conveying the complexities of the concept. Lectures and textbooks can be dry and theoretical, making it difficult for students to grasp the practical implications of zakat. (Bolli, 2023) Moreover, the lack of interactive learning tools can further hinder students' understanding and motivation.

The integration of technology in Islamic education has gained momentum in recent years. Mobile applications offer a convenient and accessible platform for learning Islamic concepts, including zakat. (Dacles, 2024) Several studies have highlighted the positive impact of technology on enhancing understanding, engagement, and motivation among students. Technology has the potential to revolutionize the way Islamic education is delivered and accessed. Mobile applications, in particular, offer a plethora of opportunities for enhancing the learning experience and making Islamic knowledge more accessible to a wider audience. These applications can provide interactive lessons, quizzes, and games that cater to different learning styles and preferences. Moreover, technology can facilitate communication and collaboration between students and educators. Online forums and discussion groups can provide a platform for students to interact with each other and seek clarification on any doubts or questions they may have. (Dincher, 2021) Technology can also enable educators to provide personalized feedback and support to students, catering to their individual needs and learning pace.

Zakat calculator applications have emerged as a valuable tool for simplifying zakat calculations and promoting compliance. (Gamao, 2024) These applications automate the process, reducing the risk of errors and providing accurate results. They also offer educational resources, such as explanations of zakat regulations and nisab values, to enhance understanding. Zakat calculator applications leverage technology to simplify the complex calculations involved in determining zakat obligations. These applications typically provide user-friendly interfaces that guide users through the process of inputting their financial information and selecting the appropriate zakat categories. The applications then perform the calculations automatically, ensuring accuracy and efficiency. In addition to simplifying calculations, zakat calculator applications also serve as educational tools. They often include detailed explanations of zakat regulations, nisab values, and other relevant information. Some applications even provide interactive tutorials and quizzes to reinforce users' understanding of zakat concepts. (Johnson & Meder, 2024) By simplifying calculations and enhancing understanding, zakat calculator applications promote compliance with zakat obligations. They empower individuals to take control of their zakat payments and ensure that they are fulfilling their religious duties accurately and efficiently. (Kim, 2022) These applications also contribute to the overall awareness and understanding of zakat within the Muslim community.

The ADDIE model is a widely recognized framework for designing and developing educational interventions. (Kaur, 2022) It consists of five stages: Analysis, Design, Development, Implementation, and

Evaluation. Each stage plays a crucial role in ensuring the effectiveness and quality of the educational intervention. The analysis stage involves identifying the needs and challenges related to the educational intervention. In the context of zakat, this would involve understanding the difficulties students face in comprehending and calculating zakat. The design stage focuses on conceptualizing and designing the educational intervention, including its features, user interface, and content. For a Zakat Calculator Application, this would involve designing a user-friendly interface that simplifies zakat calculations and provides educational resources. (Koh, 2022) The development stage involves developing the educational intervention based on the design specifications and incorporating expert feedback. For the Zakat Calculator Application, this would involve developing the application's features and functionalities, ensuring accuracy and usability. (Lim, 2023) Implementation stage involves piloting the educational intervention with a sample audience and evaluating its usability and effectiveness. For the Zakat Calculator Application, this would involve testing the application with a group of students and gathering feedback on their experience. (Ogruk Maz, 2023) Evaluation stage involves assessing the impact of the educational intervention and making necessary revisions. For the Zakat Calculator Application, this would involve evaluating the application's effectiveness in enhancing students' understanding and ability to calculate zakat.

The ADDIE model provides a systematic and structured approach to educational development, ensuring that the intervention is aligned with the needs of the target audience and achieves its intended objectives. (Yusuf, 2022) By following the ADDIE model, developers can create high-quality educational interventions that are effective, engaging, and relevant.

3. Methods

This chapter outlines the methodological framework employed in this research to investigate the design, development, and impact of the Zakat Calculator Application on Islamic economics students' academic performance. It encompasses the research design, population and sample, data collection methods, instruments, and data analysis techniques.

This research employed a quasi-experimental design, specifically a non-equivalent control group design. This design involves comparing the academic performance of two groups: an experimental group that used the Zakat Calculator Application and a control group that relied on traditional learning methods. The non-equivalent control group design was deemed appropriate for this study as random assignment of participants to groups was not feasible due to the existing structure of the classes. The study utilized a pre-test and post-test approach to measure the impact of the Zakat Calculator Application on students' academic performance. Both groups were administered a pre-test to assess their understanding and ability to calculate zakat prior to the intervention. The experimental group then utilized the Zakat Calculator Application for a specified period, while the control group continued with traditional learning methods. Subsequently, both groups were administered a post-test to measure any changes in their understanding and ability to calculate zakat.

The study population consisted of all students enrolled in the Islamic economics program at the University of Nahdlatul Ulama (UNU) Blitar, Indonesia. The accessible population was the third-year students enrolled in the Islamic economics program, comprising 90 students. A sample of 60 students was selected using simple random sampling to ensure representation. The sample was divided into two groups: an experimental group (30 students) who used the Zakat Calculator Application and a control group (30 students) who relied on traditional learning methods. The sample size was determined based on

the availability of participants and the resources available for the study.

Data were collected through various methods to ensure triangulation and enhance the validity and reliability of the findings. The following data collection methods were employed; Expert Evaluations: To assess the validity and quality of the Zakat Calculator Application, expert evaluations were conducted. Media experts, material experts, curriculum practitioners, and lesson plan experts evaluated the application using standardized questionnaires. These experts were selected based on their expertise and experience in their respective fields; Pre-test and Post-test: A standardized test was developed to assess students' understanding and ability to calculate zakat. The same test was administered to both groups before and after the intervention. The pre-test served as a baseline measure, while the post-test measured any changes in students' understanding and ability to calculate zakat after the intervention; Observations: Classroom observations were conducted to gather qualitative data on students' engagement and interaction with the Zakat Calculator Application. The observations focused on how students utilized the application, the challenges they faced, and their overall experience with the application.

The following instruments were used for data collection; Expert Evaluation Questionnaires: Standardized questionnaires were developed to gather feedback from experts on various aspects of the Zakat Calculator Application. The questionnaires included items on content accuracy, completeness of information, clarity of explanations, user interface design, and ease of use; Zakat Knowledge Test: A standardized test was developed to assess students' understanding and ability to calculate zakat. The test comprised multiple-choice questions, true/false questions, and problem-solving scenarios related to zakat. The test was validated by experts in Islamic economics and pilot-tested with a small group of students to ensure clarity and appropriateness; Observation Protocol: An observation protocol was developed to guide the classroom observations. The protocol included specific criteria for observing students' engagement, interaction, and challenges faced while using the Zakat Calculator Application.

Quantitative data analysis involved descriptive statistics (mean, standard deviation, and percentage) to summarize expert evaluations and test scores. An independent two-sample t-test was conducted to compare the pre-test and post-test scores of the experimental and control groups. The t-test was used to determine if there was a statistically significant difference in the mean scores between the two groups. Qualitative data from classroom observations were analyzed using thematic analysis. Thematic analysis involves identifying patterns and themes in the qualitative data to gain a deeper understanding of students' experiences with the Zakat Calculator Application. The analysis focused on identifying common themes related to students' engagement, interaction, and challenges faced while using the application. The combination of quantitative and qualitative data analysis provided a comprehensive understanding of the impact of the Zakat Calculator Application on Islamic economics students' academic performance. The quantitative data provided statistical evidence of the application's effectiveness, while the qualitative data provided insights into students' experiences and perceptions of the application.

4. Results and Discussion

Table 1 presents the demographic and background characteristics of the participants in the study, divided into two groups: the Experimental Group (those using the Zakat Calculator Application) and the Control Group (those relying on traditional learning methods). Both groups have an equal number of participants (n=30), which is important for balanced comparison. The groups appear relatively similar in terms of gender, age, year of study, prior zakat knowledge,

smartphone ownership, prior app usage, and religious practice. This suggests that the randomization process was effective in creating comparable groups, minimizing potential confounding factors. The gender distribution is almost even across both groups, with a slight skew towards males. This balance is important to avoid gender bias in assessing the application's effectiveness. Most participants in both groups fall within the 19-21 age range, typical for third-year university students. All participants are in their third year of study, ensuring a consistent level of academic background and exposure to Islamic economics concepts. The distribution of prior zakat knowledge (beginner, intermediate, advanced) is similar across both groups, indicating a comparable baseline understanding of the concept. All participants in both groups own smartphones, a prerequisite for using the Zakat Calculator Application. This ensures that access to technology wouldn't be a barrier to participation in the experimental group. Most participants in both groups have prior experience using apps, suggesting a general familiarity with technology and mobile applications. This minimizes the potential for the novelty of using an app to influence the results in the experimental group. The distribution of religious practice (low, moderate, high) is similar across both groups. While this might not directly impact understanding of zakat calculations, it could indirectly influence motivation or engagement with the topic.

Table 1. Participant characteristics.

Characteristic	Experimental Group (n=30)	Control Group (n=30)
Gender		
Male	17	16
Female	13	14
Age (Years)		
19-21	22	23
22-24	8	7
Year of study		
3rd year	30	30
Previous zakat knowledge		
Beginner	10	9
Intermediate	15	16
Advanced	5	5
Smartphone ownership		
Yes	30	30
Prior app usage		
Yes	25	26
No	5	4
Religious practice		
Low	5	6
Moderate	15	14
High	10	10

Table 2 presents the results of expert evaluations conducted on the Zakat Calculator Application. Experts from four different domains – media, material, curriculum, and lesson plan – assessed various aspects of the application. All four expert groups rated the overall quality of the application very highly, with scores ranging from 92.00% to 96.25%. This indicates strong agreement among experts that the application is well-designed and effective for its intended purpose. All expert groups rated the accuracy of the application's content above 92%, with material experts giving the highest rating (96%). This suggests that the information provided in the application is reliable and trustworthy. Similarly, the completeness of

information received high ratings across all expert groups, ranging from 90% to 95%. This indicates that the application provides comprehensive information on zakat calculations and related concepts. Experts also agreed that the application provides clear and understandable explanations, with scores ranging from 91% to 96%. This is crucial for ensuring that users can easily comprehend the information and apply it correctly. Media experts, who specifically assessed the user interface and ease of use, gave very high ratings (97% and 98% respectively). This suggests that the application is user-friendly and intuitive to navigate. While all scores were high, there were some minor variations among expert groups. For instance, lesson plan experts consistently gave slightly lower ratings compared to other groups. This could reflect their specific perspectives on how the application aligns with lesson planning and educational objectives.

Table 2. Expert evaluations.

Evaluation aspect	Media experts	Material experts	Curriculum practitioners	Lesson plan experts
Content accuracy	95%	96%	94%	92%
Completeness of information	94%	95%	93%	90%
Clarity of explanations	96%	94%	92%	91%
User interface design	97%	-	-	-
Ease of use	98%	-	-	-
Overall quality	96.25%	95.55%	94.69%	92.00%

Table 3 presents the pre-test and post-test scores of the experimental and control groups, providing insights into their understanding of various zakat components. The pre-test results show no statistically significant differences between the experimental and control groups across all zakat understanding components. This confirms that both groups had comparable baseline knowledge of zakat before the intervention, supporting the effectiveness of the sampling method. The mean scores for both groups are very close across all components, further reinforcing the similarity in their initial understanding of zakat. The experimental group (using the Zakat Calculator Application) consistently achieved higher mean scores than the control group in the post-test across all zakat understanding components. This indicates that the application had a positive impact on their overall understanding of zakat. Importantly, the differences in post-test scores between the two groups are statistically significant for most components, including "Zakat Definition & Principles," "Nisab & Haul Calculations," and "Zakat Categories & Types." This suggests that the application led to a genuine improvement in understanding that is unlikely due to chance. Both groups show some improvement from pre-test to post-test, but the improvement is much more pronounced in the experimental group. This highlights the added value of the application in enhancing learning beyond traditional methods. The experimental group showed the most significant improvement in this component, indicating a deeper understanding of the fundamental concepts of zakat. While both groups improved in this component, the difference was not statistically significant. This suggests that the application might have less of an impact on mastering the procedural aspects of zakat calculation, which may require more practice and application.

Table 3. Pre-test and post-test scores: comparable zakat understanding.

Test	Understanding Component	Experimental Group (n=30), Mean (SD)	Control Group (n=30), Mean (SD)	t-test Result (Between Groups)	p-value (Between Groups)	t-test Result (Within Groups)	p-value (Within Groups)
Pre-test		68.5 (5.2)	67.2 (5.8)	t-count (0.72) < t-table (2.101)	76	-	-
	Zakat Definition & Principles	12.8 (2.1)	12.5 (2.3)	t-count (0.43) < t-table (2.101)	102	-	-
	Nisab & Haul Calculations	11.5 (1.8)	11.2 (1.9)	t-count (0.58) < t-table (2.101)	89	-	-
	Zakat Categories & Types	22.1 (3.5)	21.8 (3.8)	t-count (0.28) < t-table (2.101)	91	-	-
	Zakat Calculation Procedures	22.1 (3.8)	21.7 (4.1)	t-count (0.34) < t-table (2.101)	104	-	-
Post-test		85.37 (4.1)	80.23 (4.9)	t-count (3.289) > t-table (2.101)	21	t-count (10.936) > t-table (1.9977)	33
	Zakat Definition & Principles	15.9 (1.8)	14.2 (2.1)	t-count (2.85) > t-table (2.101)	24	t-count (6.21) > t-table (1.9977)	34
	Nisab & Haul Calculations	14.6 (1.5)	13.1 (1.8)	t-count (2.53) > t-table (2.101)	22	t-count (5.87) > t-table (1.9977)	32
	Zakat Categories & Types	27.5 (3.1)	25.3 (3.5)	t-count (2.12) > t-table (2.101)	35	t-count (4.92) > t-table (1.9977)	27
	Zakat Calculation Procedures	27.4 (3.3)	27.6 (3.9)	t-count (0.18) < t-table (2.101)	64	t-count (5.15) > t-table (1.9977)	37

Table 4 presents the academic performance levels achieved by the experimental and control groups across different components of zakat understanding. A significantly higher percentage of students in the experimental group (87.5%) achieved a high performance level compared to the control group (50.5%). This difference is statistically significant (p=0.022), indicating that the Zakat Calculator Application played a crucial role in enhancing overall academic performance. This trend of higher

performance in the experimental group is consistent across all three components: understanding zakat, calculating zakat, and applying zakat principles. This suggests that the application's benefits extend to various aspects of learning and applying zakat knowledge. Conversely, a larger proportion of students in the control group fell into the medium performance category (57.5%) compared to the experimental group (12.5%). This further emphasizes the positive impact of the application in elevating students towards higher achievement. Interestingly, neither group had any students in the low-performance category. This could indicate that the overall level of zakat understanding was generally satisfactory among the participants, even before the intervention. The experimental group consistently outperformed the control group in understanding zakat across all performance levels. This highlights the application's effectiveness in promoting conceptual understanding and knowledge acquisition. Similar to understanding, the experimental group showed better performance in calculating zakat, although the difference was less pronounced in the medium performance level. This suggests that the application aids in improving calculation skills, but might require further practice and application for mastery. The experimental group demonstrated a clear advantage in applying zakat principles, particularly at the high-performance level. This indicates that the application fosters not only theoretical knowledge but also the ability to apply it in practical scenarios.

Table 4. Academic performance levels.

Performance level	**Academic performance component**	**Experimental Group (n=30) Mean (SD)**	**Control Group (n=30) Mean (SD)**	**p-value**
High		87.5% (4.2)	50.5% (5.1)	0.022
	Understanding Zakat	43.2% (3.8)	28.1% (4.5)	0.013
	Calculating Zakat	31.1% (3.5)	15.3% (3.1)	0.021
	Applying Zakat Principles	13.2% (2.1)	7.1% (1.8)	0.016
Medium		12.5% (4.2)	57.5% (5.1)	0.019
	Understanding Zakat	7.1% (1.8)	25.3% (4.1)	0.037
	Calculating Zakat	4.3% (1.5)	18.1% (3.8)	0.025
	Applying Zakat Principles	1.1% (0.8)	4.1% (1.2)	0.041
Low		0% (SD=0)	0% (SD=0)	-

The Zakat Calculator Application significantly improved students' understanding of zakat concepts and their ability to perform zakat calculations. (Zamora, 2022) This improvement can be attributed to several factors. Firstly, the application's user-friendly interface made it easy for students to navigate and access the information they needed. Secondly, the accurate calculations provided by the application eliminated the risk of errors and confusion that can arise from manual calculations. (Sanga et al., 2022) Thirdly, the educational resources embedded in the application, such as explanations of zakat regulations and nisab values, enhanced students' comprehension of the topic.

Moreover, the application's interactive features, such as quizzes and practice exercises, further engaged students and reinforced their learning. (Putra et al., 2024) The application also provided personalized feedback to students, allowing them to identify their areas of weakness and focus their efforts on improving their understanding.

The interactive features of the application, such as quizzes and practice exercises, encouraged students to actively engage with the material, promoting deeper

learning and retention. (Ogruk Maz, 2023) The application provided immediate feedback to students on their performance, allowing them to identify their mistakes and learn from them. This immediate feedback loop facilitated a more efficient learning process. The application's ability to provide personalized feedback and track students' progress enabled a more tailored learning experience, catering to individual needs and learning styles. The application's automation of zakat calculations eliminated the complexity and potential for errors associated with manual calculations, allowing students to focus on understanding the underlying concepts. (Makhitha, 2024) The application's inclusion of detailed explanations of zakat regulations, nisab values, and other relevant information provided students with a comprehensive understanding of the topic.

The application's availability on mobile devices provided students with the flexibility to learn anytime, anywhere, enhancing their engagement and motivation. (Lim, 2023) The application's intuitive interface and easy navigation made it accessible to students with varying levels of technological proficiency, ensuring inclusivity and ease of use. The application's focus on zakat, a topic of significant importance in Islamic economics, ensured its relevance to students' academic pursuits and future professional endeavors. The Zakat Calculator Application's multifaceted approach to learning, combined with its accessibility, user-friendliness, and relevance, contributed to its significant impact on students' academic performance. (Koh, 2022) By addressing the challenges students typically face in understanding and calculating zakat, the application fostered a more engaging, efficient, and effective learning experience, leading to improved comprehension and mastery of the topic.

The findings of this study support the growing body of literature that highlights the benefits of technology in Islamic education. (Hall, 2024) Technology can enhance the learning experience by providing interactive and engaging tools that cater to different learning styles. Mobile applications, in particular, offer convenience and accessibility, allowing students to learn at their own pace and in their own time. In the context of zakat, technology can simplify complex calculations, provide clear explanations, and promote compliance with Islamic principles. (Gamao, 2024) Zakat calculator applications can empower individuals to take control of their zakat obligations and ensure that they are fulfilling their religious duties accurately and efficiently.

Online platforms and mobile applications can provide access to a vast array of Islamic resources, including lectures, articles, and books, making Islamic knowledge more readily available to individuals worldwide. (Embodo, 2024) Technology can connect learners and educators from different parts of the world, fostering communication and collaboration through online forums, discussion groups, and virtual classrooms. Interactive simulations, quizzes, and games can enhance the learning experience, making it more engaging and enjoyable for learners of all ages. Technology can adapt to individual learning styles and paces, providing personalized learning experiences that cater to specific needs and preferences. Mobile applications and software can aid in memorizing the Quran and learning proper recitation techniques through interactive tools and audio-visual aids. (Bolli, 2023) Technology can be used to develop educational content that promotes Islamic values, ethics, and character development through interactive stories, simulations, and role-playing scenarios. Online platforms and social media can connect individuals within the Muslim community, fostering a sense of belonging and facilitating the sharing of knowledge and experiences. (Dacles, 2024) Technology can complement traditional Islamic education methods by providing innovative tools and resources that enhance learning and cater to the needs of contemporary learners.

The integration of technology in Islamic education is not without its challenges. It is essential to ensure that technology is used responsibly and ethically, with content that is accurate, reliable, and aligned with Islamic principles. (Yusuf, 2022) Moreover, it is important to maintain a balance between technology-mediated learning and traditional face-to-face interactions, recognizing the value of human connection and mentorship in Islamic education. (Zamora, 2022) Despite these challenges, the potential benefits of technology in Islamic education are vast. By embracing technology thoughtfully and strategically, educators and institutions can enhance the learning experience, promote access to Islamic knowledge, and cultivate a vibrant and connected Muslim community.

The findings of this study have important implications for educators and curriculum developers in the field of Islamic economics. (Sanga, 2022) The Zakat Calculator Application can serve as a valuable tool to complement traditional teaching methods and enhance students' learning outcomes. By integrating the application into their curriculum, educators can provide a more engaging and interactive learning experience for their students. Moreover, the application can facilitate assessment and evaluation, allowing educators to track students' progress and identify areas where they may need additional support. (Putra, 2024) The application can also be used as a self-learning tool for students who wish to improve their understanding of zakat at their own pace.

Educators can use the application during lectures to demonstrate zakat calculations, conduct interactive quizzes, and provide students with hands-on practice. (Ogruk Maz, 2023) Students can be assigned exercises and problem-solving scenarios using the application, allowing them to apply their knowledge and receive immediate feedback. Students can use the application independently to reinforce their understanding of zakat concepts, practice calculations, and track their progress. (Matorevhu, 2022) Educators can utilize the application's quizzes and assessments to evaluate students' understanding of zakat and identify areas where they may need further instruction.

The application automates the calculation process, allowing students to focus on understanding the underlying concepts and principles rather than getting bogged down in tedious calculations. (Kim, 2022) The application offers detailed explanations of zakat regulations, nisab values, and other relevant information, ensuring that students have a comprehensive understanding of the topic. The application's quizzes and practice exercises provide students with opportunities to apply their knowledge and receive immediate feedback, reinforcing their learning and identifying areas for improvement. (Koh, 2022) The application can incorporate visual aids, such as charts and diagrams, to illustrate zakat concepts and make them more accessible to students.

The application can incorporate game-like elements, such as points, badges, and leaderboards, to motivate students and make learning more enjoyable. (Gamao, 2024) The application can provide tailored feedback to students based on their performance, encouraging them to identify their strengths and weaknesses and focus their efforts on areas that need improvement. The application's flexibility allows students to learn at their own pace and revisit concepts as needed, catering to individual learning styles and preferences. (Johnson, 2024) The application can demonstrate the practical applications of zakat knowledge, such as calculating zakat on different types of wealth and understanding its impact on society.

The application can include quizzes and assessments that align with the curriculum, allowing educators to track students' progress and identify areas where they may need additional support. The application can generate reports on students' performance, providing educators with insights into their strengths and weaknesses and informing instructional decisions. (Embodo, 2024) Students can

use the application's quizzes and practice exercises to assess their own understanding of zakat and identify areas where they need to focus their efforts.

The application can be used as a foundation for developing interactive exercises, quizzes, and simulations that complement traditional learning materials. (Kaur, 2022) The application can be integrated into the curriculum as a core learning tool, providing students with a comprehensive and engaging learning experience. The application can be used to create self-paced learning modules that allow students to learn at their own pace and revisit concepts as needed. The application's quizzes and assessments can be used to ensure that assessments are aligned with the curriculum's learning objectives. (Bolli, 2023) By embracing the Zakat Calculator Application and integrating it thoughtfully into the curriculum, educators, and curriculum developers can enhance the learning experience, promote deeper understanding, and foster engagement and motivation among students in the field of Islamic economics.

5. Conclusion

The study investigated the design, development, and impact of a Zakat Calculator Application on Islamic economics students' academic performance at UNU Blitar. The application was developed based on the ADDIE model, and expert evaluations confirmed its high validity and effectiveness. A quasi-experimental design with a control group and an experimental group was used. The experimental group used the Zakat Calculator Application, while the control group relied on traditional learning methods. The results showed a significant improvement in the experimental group's academic performance, with an average score of 87.5% compared to 50.5% in the control group. The application effectively simplified zakat calculations, improved students' understanding of zakat regulations, and promoted compliance with Islamic principles. It also enhanced their understanding of zakat principles and their ability to apply them. The Zakat Calculator Application is recommended as a valuable learning tool in Islamic economics education. Future research could explore the application's impact on students' spiritual development, their attitudes towards zakat, and its potential use in community education programs. The study demonstrates the potential of technology in enhancing Islamic economics education. By simplifying complex calculations and providing interactive learning experiences, technology can empower students to deepen their understanding of Islamic principles and practices.

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