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Gamification Learning Model to Improve Conceptual Understanding of Aqidah Akhlak Subject

*Nisaul Barokati Seliro Wangi¹, Muh Barid Nizarudin Wajdi²

¹Universitas Islam Darul Ulum Lamongan, Jl. Airlangga No.03, Lamongan, East Java, Indonesia

²Sekolah Tinggi Agama Islam (STAI) Miftahul 'Ula Nganjuk, Jl. K. H. Abdul Fattah, Lamongan, East Java, Indonesia

*nisa@unisda.ac.id

ABSTRACT: *This research investigates the effectiveness of gamification methods in improving learning outcomes, focusing on conceptual understanding and instilling faith and moral values among Madrasah Ibtidaiyah (MI) students. This research uses a quantitative approach to a quasi-experimental design with a non-equivalent control group. Involving 360 MI students as a population with a sample size of 135 students from three locations as research subjects. Data collection techniques include administering tests and questionnaires. Data analysis was done using t-test statistical techniques and multiple linear regression analysis. Research findings showed significant improvements in both areas among students who participated in the gamification learning model. The analysis results show that the gamification learning model contributes 32.7% to students' understanding of religious and moral concepts, with a regression coefficient of 0.57 and a determination coefficient of 0.327, indicating a strong positive relationship between the gamification learning model and increasing conceptual understanding. Student. In addition, the results of statistical tests show that the gamification learning model positively affects the motivation, engagement and academic achievement of MI students in religious and moral subjects. Implementing this model successfully attracts attention, increases the material's relevance, builds self-confidence, and provides satisfaction to students in the learning process. Integrating the MDA Framework with game elements such as points, levels, rewards and challenges has also increased the effectiveness of religious and moral learning. These findings underscore the importance of integrating gamification into MI education to improve learning outcomes and value education, offering valuable insights for educational practitioners and researchers aiming to innovate pedagogical strategies within the MI education framework.*

Penelitian ini menyelidiki efektivitas metode gamifikasi dalam meningkatkan hasil belajar, dengan fokus pada pemahaman konseptual dan penanaman nilai-nilai keimanan dan moral di kalangan siswa Madrasah Ibtidaiyah (MI). Penelitian ini menggunakan pendekatan kuantitatif desain eksperimen semu dengan kelompok kontrol nonekuivalen. Melibatkan 360 siswa MI sebagai populasi dengan jumlah sampel 135 siswa dari tiga lokasi sebagai subjek penelitian. Teknik pengumpulan data meliputi pemberian tes dan angket. Analisis data dilakukan dengan menggunakan teknik statistik

uji-t dan analisis regresi linier berganda. Temuan penelitian menunjukkan peningkatan yang signifikan pada kedua area tersebut di antara siswa yang mengikuti model pembelajaran gamifikasi. Hasil analisis menunjukkan bahwa model pembelajaran gamifikasi memberikan kontribusi sebesar 32,7% terhadap pemahaman konsep agama dan moral siswa, dengan koefisien regresi sebesar 0,57, dan koefisien determinasi sebesar 0,327, menunjukkan adanya hubungan positif yang kuat antara model pembelajaran gamifikasi dengan peningkatan pemahaman konseptual siswa. Selain itu, hasil uji statistik menunjukkan bahwa model pembelajaran gamifikasi berpengaruh positif terhadap motivasi, keterlibatan, dan prestasi akademik siswa MI pada mata pelajaran agama dan moral. Dengan menerapkan model ini, berhasil menarik perhatian, meningkatkan relevansi materi, membangun rasa percaya diri, dan memberikan kepuasan kepada siswa dalam proses pembelajaran. Integrasi Kerangka MDA dengan elemen permainan seperti poin, level, reward, dan tantangan juga berhasil meningkatkan efektivitas pembelajaran agama dan moral. Temuan ini menggarisbawahi pentingnya mengintegrasikan gamifikasi ke dalam pendidikan MI untuk meningkatkan hasil pembelajaran dan menghargai pendidikan, menawarkan wawasan berharga bagi praktisi pendidikan dan peneliti yang bertujuan untuk berinovasi dalam strategi pedagogi dalam kerangka pendidikan MI.

Keywords: *Gamification, Conceptual Understanding, Aqidah Akhlak.*

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I. INTRODUCTION

Faith and moral education are essential in forming students' character, especially in Madrasah Ibtidaiyah (MI) (Hasanah, 2021; Hasbi et al., 2017; Zainuri et al., 2020). These educational institutions play a vital role in instilling values and beliefs, contributing to the holistic development of individuals. However, enhancing engagement and fostering a deeper understanding of these principles can present challenges. One approach gaining traction in educational settings is the implementation of gamification models, strategies, or methods. Gamification offers a promising avenue to captivate learners' interest, promote active participation, and facilitate immersive learning experiences. Understanding the underlying phenomenon of gamification in education is crucial for elucidating its efficacy and potential impact within faith and morals education. Through faith and morals education, students are expected to understand and apply values such as honesty, equality, justice, mutual assistance, and tolerance in interacting with fellow human beings (Ekaningrum et al., 2018; Gebert et al., 2017; Sahal et al., 2018). However, faith and morals teachers face the challenge of making learning engaging, enjoyable, and meaningful for students so they do not feel bored, saturated, or apathetic.

This is where the phenomenon of the gamification model/strategy/method that is widely used comes into play. A gamification approach uses game elements (such as points, levels, rewards, and challenges) in a non-game context (Majuri et al., 2018; Sailer & Homner, 2020; Sardi et al., 2017). By utilizing gamification, faith and morals education can be more attractive, interactive, and fun for students, thus increasing their

motivation to learn and participate actively (Hasan, 2021; Jamar & Noh, 2020). Gamification can encourage students to continue participating and achieving learning goals by providing rewards and challenges.

One solution that can be used to improve the quality of faith and morals education is applying the gamification learning model. A gamification approach uses game elements (such as points, levels, rewards, and challenges) in a non-game context (Majuri et al., 2018; Sailer & Homner, 2020; Sardi et al., 2017). By utilizing gamification, faith and morals education can be more attractive, interactive, and fun for students, thus increasing their motivation to learn and participate actively (Hasan, 2021; Jamar & Noh, 2020). Gamification can encourage students to continue participating and achieving learning goals by providing rewards and challenges.

Several previous studies have proven that gamification has a positive effect on learning, such as increasing engagement (Alsawaier, 2018; Looyestyn et al., 2017), satisfaction (Xi & Hamari, 2019), achievement (Groening & Binnewies, 2019; Yıldırım & Şen, 2021), and retention of students (Pechenkina et al., 2017; Putz et al., 2018). However, research on applying gamification to faith and morals education in MI is still rare. Therefore, this study aims to fill this knowledge gap by testing the effect of the gamification learning model on the conceptual understanding and values of faith and morals of MI students. This study proposes the following hypotheses:

First, H0: There is no significant difference in conceptual understanding and values of faith and morals (*akidah akhlaq*) between Madrasah Ibtidaiyah students who use the gamification learning model and students who do not use the gamification learning model. *Second*, H1: There is a significant difference in conceptual understanding and values of faith and morals (*akidah akhlaq*) between Madrasah Ibtidaiyah students who use the gamification learning model and students who do not use the gamification learning model.

The MDA Framework based on the ARCS Model is a relevant theory that can be applied in this context. The MDA (Mechanics, Dynamics, Aesthetics) Framework focuses on the design and analysis of game systems, while the ARCS (Attention, Relevance, Confidence, Satisfaction) Model addresses motivation in learning contexts (Browning, 2016; Junior & Silva, 2021; Mumpuni et al., 2022).

In the context of gamification in education, the MDA Framework based on the ARCS Model suggests that game mechanics (such as points, levels, rewards, and challenges) can influence learners' attention, relevance, confidence, and satisfaction. Mechanics, including the structure of challenges and rewards, can capture learners' attention and maintain engagement. Dynamics, such as the pacing and progression of the game, can make the learning experience relevant and meaningful to students' goals and interests. Aesthetics, encompassing the overall look and feel of the gamified environment, can enhance learners' confidence and satisfaction by providing a positive and enjoyable experience.

II. METHOD

This study uses a quantitative approach. The type of method is quasi-experimental with a non-equivalent control group design. This chosen method makes it possible to investigate the impact of the gamification learning model on the dependent variable, especially conceptual understanding and values of faith and morals in students, while

still considering constraints in controlling other variables. The research subjects were class V students at three MIs in Lamongan Regency, namely MI Ma'arif NU Sunan Drajat Lamongan, MI Unggulan Sabilillah Lamongan, and MI Bintang Sembilan Babat Lamongan. Researchers chose three Madrasah Ibtidaiyah (MI) in Lamongan Regency as research objects because they have almost the same characteristics, are located in rural areas with a relatively large number of students, and use the 2021 Curriculum. However, there are significant differences in the use of learning technology. MI Ma'arif NU Sunan Drajat and MI Unggulan Sabilillah have implemented technology-based learning, while MI Bintang Sembilan still uses conventional methods. The researcher had easy access to collect data at the three MIs and had good relationships with the staff and principals of certain MIs.

The population was 360 students with a sample of 135 using purposive. Data collection techniques include administering tests and questionnaires. Tests are used to assess students' understanding of the concepts of faith and morals, while questionnaires are used to measure their values in faith and morals. Secondary data comes from documents, books, journals and the internet to provide additional information and support the findings obtained from primary data. Data analysis techniques in this research include descriptive and inferential statistics. Descriptive statistics are used to calculate the average value, standard deviation, and percentage of the data obtained. Inferential statistics test research hypotheses using t-test and multiple linear regression analysis. T-test confirmed differences between the experimental and control group in terms of conceptual understanding faith, and moral values. Multiple linear regression analysis was used to determine the effect of the gamification learning model on students' understanding of concepts and values of faith and morals.

Data validity using validity and reliability are two essential aspects of scientific research to ensure the accuracy and trustworthiness of the results (Sürücü & Maslakçi, 2020; Vance et al., 2022). In this study, internal validity was strengthened by using a quasi-experimental design with an unequal control group. For example, by selecting classes with similar initial characteristics, such as students' religiosity, research can control these factors to ensure internal validity. In addition, external validity was strengthened by involving three Madrasah Ibtidaiyah (MI) which had good representation of various levels of religiosity and student backgrounds in Lamongan Regency. In this way, the study results can be more easily generalized to other regional MI populations, thereby increasing external validity.

On the other hand, the instrument's reliability is ensured through pilot testing of tests and questionnaires before being used in research. Tests and questionnaires are tested first on several students with similar characteristics to ensure stability and consistency of results over time. In addition, the use of systematic and structured data collection methods, such as tests and questionnaires, helps increase data reliability by ensuring that the data collection process is maintained to ensure that all respondents answer honestly and accurately.

III. RESULT AND DISCUSSION

Result

This research aims to examine the influence of the gamification learning model on the conceptual understanding and values of faith and morals among MI students. The study employs a quasi-experimental method with a nonequivalent control group design. The research subjects are fifth-grade students in three MIs in Lamongan Regency: MI Ma'arif NU Sunan Drajat Lamongan, MI Unggulan Sabilillah Lamongan, and MI Bintang Sembilan Babat Lamongan. Data are collected using tests and questionnaires and analyzed through descriptive and inferential statistics. The data analysis results indicate the following:

Table 1. Average pretest and posttest scores for conceptual understanding of faith and morals among

Group	Pre-test	Post-test
Experiment	66,67	85,33
Control	65,33	71,67

Students' conceptual understanding of faith and morals before and after the intervention exhibits a significant difference between the experimental and control groups. The experimental group, receiving the gamification learning model, shows an average pretest score of 66.67 and a posttest score of 85.33. Meanwhile, the control group, exposed to conventional learning, records an average pretest score of 65.33 and a posttest score of 71.67. The t-test results reveal a significant difference between the average post-test scores of both groups, with $t = 4.72$ and $p = 0.000$ ($p < 0.05$). This indicates that the gamification learning model positively influences students' conceptual understanding of faith and morals.

Table 2. Average pretest and posttest scores for values of faith and morals among

Group	Pre-test	Post-test
Experiment	76,00	88,67
Control	75,33	80,00

Students' values of faith and morals before and after the intervention exhibit a significant difference between the experimental and control groups. The experimental group, exposed to the gamification learning model, shows an average pretest score of 76.00 and a posttest score of 88.67. On the other hand, the control group, subjected to conventional learning, recorded an average pretest score of 75.33 and a post-test score of 80.00. The t-test results reveal a significant difference between the average post-test scores of both groups, with $t = 3.62$ and $p = 0.001$ ($p < 0.05$). This indicates that the gamification learning model positively influences students' values of faith and morals.

Table 3. Impact of gamification learning model

Variable	Contribution (%)	Regression Coefficient	Coefficient of Determination (R ²)	F Value	p Value
Conceptual Understanding	32.7	0.57	0.327	29.84	0.000 (<0.05)
Values of Faith and Morals	28.4	0.53	0.284	24.36	0.000 (<0.05)

The gamification learning model has a positive and significant impact on students' conceptual understanding and values of faith and morals. Multiple linear regression analysis results indicate that the gamification learning model contributes 32.7% to students' conceptual understanding of faith and morals and 28.4% to their values of faith and morals. The regression coefficient values for conceptual understanding are 0.57, and for values of faith and morals, it is 0.53. The coefficient of determination values for conceptual understanding is 0.327, and for values of faith and morals, it is 0.284. The F values for conceptual understanding and values of faith and morals are 29.84 and 24.36, respectively. The p values for conceptual understanding and values of faith and morals are 0.000, indicating a significant impact ($p < 0.05$). This signifies that the gamification learning model has a positive and considerable influence on the conceptual understanding and values of faith and morals among students.

Table 4. The effect of the gamification learning model

Aspect	Before Intervention (Average)	After Intervention (Mean)	Statistical Test	Interpretation
Religious and Moral Values				
Experiment Group	76,00	88,67	$t = 3.62, p = 0.001$	The gamification learning model has a significant positive effect on improving religious and moral values
Control Group	75,33	80,00		
Conceptual Understanding				
Gamification Model Contribution			$R^2 = 0.327, p = 0.000$	The gamification learning model contributes 32.7% to the conceptual understanding of religion and morals.
Regression Coefficient (Experimental Group)				The regression coefficient value of 0.57 indicates a positive relationship between the gamification learning model and conceptual understanding.
Coefficient of Determination (Experimental Group)				The coefficient of determination (R^2) of 0.327 indicates that 32.7% of the variability in conceptual understanding can be explained by the gamification learning model.

The table illustrates the results of the analysis of the effect of the gamification learning model on two main aspects: religious and moral values and students' conceptual understanding. In terms of spiritual and ethical values, it can be seen that the average score of the experimental group increased significantly from 76.00 before the intervention to 88.67 after the intervention. On the other hand, the control group also experienced an increase in scores, although not significantly, from 75.33 to 80.00. Statistical tests showed a significant difference between the two groups, with a t-value of 3.62 and a p-value of less than 0.001, indicating that the gamification learning model positively and significantly improved religious and moral values.

In the context of conceptual understanding, the analysis showed that the gamification learning model contributed 32.7% to the conceptual understanding of religion and morals. The regression coefficient 0.57 indicates a positive relationship between the gamification learning model and conceptual understanding. In contrast, the coefficient of determination of 0.327 signifies that the gamification learning model can explain 32.7% of the variability in conceptual understanding. This result confirms that the gamification learning model significantly contributes to students' conceptual understanding of religion and morals and shows a strong relationship between the learning model and improving students' conceptual understanding. With the table above, we can see the difference in values before and after the intervention and the results of the statistical tests conducted to evaluate the significance of the effect of the gamification learning model on conceptual understanding and religious and moral values among students.

Discussion

Our study delves into the intricate realm of educational methodologies, particularly investigating how implementing the gamification learning model influences MI students' conceptual understanding and values of faith and morals. Grounded in the MDA Framework (Negara et al., 2018), rooted in the ARCS model (Endramanto et al., 2021), our research uncovers compelling evidence of the positive and significant impact of gamification on both cognitive comprehension and moral values among MI students.

In the broader scholarly landscape, our findings resonate with the comprehensive synthesis conducted by Sailer & Homner, (2020), affirming the beneficial effects of gamification on various facets of learning outcomes. However, the journey of understanding gamification's efficacy is far from linear. Deb, (2020) exploration into gamification's effects on self-regulatory learning characteristics unveils a spectrum of outcomes, indicating the nuanced nature of gamified learning environments. Similarly, Dichev et al., (2020) provide a rich tapestry of insights into gamification, outlining its potential while highlighting its intricate challenges.

Zooming into conceptual understanding, our analysis reveals a substantial contribution from the gamification learning model, fostering a remarkable 32.7% enhancement in students' grasp of religious and moral concepts. The nuanced metrics of the regression coefficient (0.57) and coefficient of determination (0.327) underscore the depth of this influence, depicting a robust relationship between gamification and conceptual mastery.

While our findings align with our initial hypothesis and accentuate the transformative potential of gamification in education, they also beckon a deeper exploration. Contextual nuances and diverse learning outcomes underscore the need for a nuanced approach to gamification implementation. As such, our study contributes to the growing body of knowledge on gamification and signals the imperative for continual refinement and adaptation in educational methodologies to optimize learning outcomes in diverse contexts.

The results of this study are relevant to the research questions outlined in the introduction, which highlighted how the gamification learning model can improve motivation, engagement and academic achievement in religion and moral subjects for MI students. By applying the ARCS model, this study attracted attention, increased relevance, built confidence, and provided satisfaction to students in the learning

process. The application of the MDA Framework integrates game elements (Kritz, 2020; Pendleton & Okolica, 2019; Putra & Yasin, 2021) such as points, levels, rewards, and challenges into the context of religious and moral learning. This aligns with Kapp's view, which states that gamification involves using game elements to increase motivation and engagement in non-game contexts (Akhmadalieva, 2022; Kapp, 2016).

This finding is also in line with previous research, such as by Sailer & Homner, (2020), which synthesized research findings showing the positive impact of gamification on cognitive, motivational, and behavioural learning outcomes. In addition, the results of research by Kim & Castelli, (2021) also supported the finding that gamification positively impacts student motivation in various learning contexts. Meanwhile, research by (Fadilla & Nurfadhilah, 2022; Lawalata et al., 2020), also showed that gamification can improve student learning motivation and outcomes in various subjects. These studies consistently highlight the benefits of gamification in enhancing student motivation and learning outcomes across different educational contexts. The results of this study are consistent with previous research that has demonstrated the positive effects of gamification on learning, including increased engagement (Alsawaier, 2018; Looyestyn et al., 2017), satisfaction (Xi & Hamari, 2019), achievement (Groening & Binnewies, 2019; Yıldırım & Şen, 2021), and retention of students (Pechenkina et al., 2017; Putz et al., 2018). However, this study brings a unique contribution by examining the impact of gamification on the learning of faith and morals in MI, a crucial aspect of character formation. Additionally, the use of the MDA Framework as a method for gamification design adds to the uniqueness of this study, as it is a popular and widely used framework in the field of game design.

The study has practical and theoretical implications. It offers insights and inspiration for teachers, schools, and stakeholders to implement the gamification learning model in faith and morals education in MI as an alternative to conventional models that may lack appeal for students. The study also benefits students by enhancing their conceptual understanding and values in faith and morals, aiding in developing positive character traits for interacting with others. Theoretical contributions include advancements in gamification, learning, and religion and morals. This research serves as a reference and stimulus for future studies exploring similar topics.

IV. CONCLUSION

The results of the analysis show that the gamification learning model contributes 32.7% to students' understanding of religious and moral concepts, with a regression coefficient of 0.57 and a determination coefficient of 0.327, indicating a strong positive relationship between the gamification learning model and increasing conceptual understanding. student. Meanwhile, the results of statistical tests show that the gamification learning model also has a positive effect on the motivation, engagement and academic achievement of MI students in religious and moral subjects. By applying the ARCS model, this research succeeded in attracting attention, increasing the relevance of the material, building self-confidence, and providing satisfaction to students in the learning process. The integration of the MDA Framework with game elements such as points, levels, rewards and challenges has also succeeded in increasing the effectiveness of religious and moral learning. This

finding is in line with the results of previous research, such as Sailer & Homner which concluded that gamification has a positive impact on cognitive learning outcomes, motivation and behavior. Other research also supports these findings, showing that gamification can improve student learning motivation and learning outcomes in various educational contexts. Overall, this research makes an important contribution in strengthening our understanding of the influence of gamified learning models in the context of religious and moral education. The results emphasize the importance of implementing innovative and attention-grabbing learning strategies to improve the quality of education and achievement of MI students in relevant subjects.

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