

Application of Website-Based Tug-of-War Quiz Media to Increase Students' Learning Interest in Islamic Religious Education Subjects

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Abstract. This study describes the implementation of website-based Tug-of-War (Tarik Tambang) quiz media. It examines its effectiveness in increasing Grade VIII students' learning interest in Islamic Religious Education at SMP Pesantren Modern Datok Sulaiman (Girls' Division), Palopo City. The study used Classroom Action Research (CAR) following the Kemmis and McTaggart model and was conducted in two cycles, each consisting of two meetings. The subjects were 28 students in class VIII D. Data were collected through observations of teacher and student activities, a learning-interest questionnaire, and documentation, and then analyzed using descriptive quantitative methods. The results show that the implementation proceeded systematically through planning, action, observation, and reflection. Teacher activity improved from the "fairly good" category in Cycle I to "good-excellent" in Cycle II. Student activity, particularly in core activities, rose from 60.7% (poor) in Cycle I to 95.4% (excellent) in Cycle II. Students' average learning interest increased from 84.58% (highly interested) in Cycle I to 92.47% (highly interested) in Cycle II. All aspects of learning interest, enjoyment, attention, involvement, and attraction fell into the highly interested category. These findings indicate that website-based Tug-of-War quiz media creates an engaging, interactive learning atmosphere and effectively enhances students' interest in learning Islamic Religious Education.

Keywords: Tug-Of-War Quiz Media; Website; Learning Interest; Islamic Religious Education; Classroom Action Research.

1. Introduction

Education is a long-term investment crucial to a nation's civilizational sustainability. Through education, humans are not only equipped with basic skills to read, write, and count, but are also directed to develop their potential holistically, covering cognitive, affective, and psychomotor dimensions (Zaldie & Hanif, 2025). In Islamic Religious Education, junior high school learning aims to shape students' character, morals, and spiritual understanding so they can comprehensively understand Islamic teachings (Hidayati et al., 2026). However, the learning process in Islamic Religious Education often faces fundamental challenges, including low student interest. Interest is a key psychological factor that drives students to achieve learning goals (Murayama, 2022). When interest in learning is low, students' active involvement in the learning process also decreases, ultimately leading to suboptimal learning outcomes.

In practice, many schools still teach Islamic Religious Education using teacher-centered, conventional methods and use minimal learning media. This is strengthened by preliminary data at the Datok Sulaiman Modern Islamic Boarding School in Palopo City, where, based on the results of

the Final Semester Exam (UAS) of Islamic Religious Education semester 1 of the 2025/2026 school year, only 11 students (40.7%) have achieved completeness, while 16 students (59.3%) have not reached the target. This low learning outcome is attributed to limited student involvement, low participation in questions, and difficulty focusing during learning. Therefore, a learning innovation is needed that can bridge this gap, one of which is the use of technology-based interactive learning media that is relevant to the characteristics of the current digital generation (Yumna et al., 2024)

Based on the background that has been described, several fundamental problems have been identified in the learning of Islamic Religious Education in grade VIII of the Datok Sulaiman Modern Islamic Boarding School, Putri Section, Palopo City. The main problem appears to be low interest in learning among students in Islamic Religious Education subjects, which is reflected in the lack of active participation, low focus, and lack of enthusiasm of students during the learning process. This condition is exacerbated by the limited use of innovative learning media, as the learning process still relies on textbooks and whiteboards, which are less effective at attracting attention and motivating students. As a result, student learning outcomes are not optimal, as data show that more than half of students (59.3%) have not met the Learning Goal Achievement Criteria. In addition, teachers' lack of training and limited optimization of technology use in learning have prevented the potential of digital media, which is highly relevant to the characteristics of the current generation, from being utilized optimally. Therefore, the gap between students' needs for interesting learning and the reality of using conventional media is the main focus to be overcome in this study.

Learning interest is defined as a strong tendency and desire of students to follow the learning process, which is accompanied by feelings of pleasure and interest in the subject matter (Wahdi et al., 2024). Learning interest has several main indicators, including feelings of pleasure, student involvement, student attention, and student interest (Hidayaty et al., 2022; Lestari et al., 2021). To increase interest in learning, the right external stimulus is needed, one of which is learning media. Learning media conveys information designed to support teaching and learning goals (Kandia et al., 2023). Innovative, interactive learning media can make abstract learning more concrete, stimulate thinking, motivate students, and capture attention (Rahim et al., 2022).

One approach that can be used is Game-Based Learning. Traditional games such as tug-of-war have strong historical and cultural value and emphasize team cohesiveness (Febriza et al., 2026). Integrating traditional tug-of-war games into website-based digital media can create a more interactive and enjoyable learning experience. This web-based tug-of-war quiz media allows students to learn exploratively and collaboratively, where progress in the game is determined by the accuracy of students in answering questions related to the learning material (Bahar & Iriandy, 2025).

Several previous studies have examined the use of tug-of-war in learning, including Simpson & Feyerabend (2022) research shows that integrating tug-of-war games into interactive PowerPoint media effectively improves the learning outcomes of grade IV elementary school students, with an N-gain value of 0.57 (quite effective), and can significantly increase understanding of style concepts. Similarly, Suwasono et al., (2025) also show that using tug-of-war games in the Problem-Based Learning (PBL) model positively influences students' understanding of concepts in business materials and energy in grade XI of high school. Overall, these studies suggest that tug-of-war game elements can increase student involvement and understanding.

Based on previous research, several gaps can be identified. First, previous research has focused more on improving learning outcomes (D. et al., 2020) and conceptual understanding (Rahmah & Lubis, 2024) in science subjects (Physics/Science). Few studies have examined how tug-of-war media can increase students' interest in learning, especially in Islamic Religious Education. Second, tug-of-war media used in previous research is still based on presentation software (PowerPoint) or

physical formats; few interactive, web-based quiz applications that can be accessed directly have been developed. Third, previous research was conducted at the elementary school and high school levels. In contrast, research at the junior high school level, especially in the pesantren environment, remains limited.

This research is novel in three main ways. First, this research focuses on efforts to increase students' interest in learning, not just learning outcomes or understanding concepts. Learning interest is a crucial affective foundation in Islamic Religious Education learning, which has not been widely explored in the context of tug-of-war media. Second, the media used is a website-based tug-of-war quiz developed specifically for Islamic Religious Education learning. This media integrates traditional games with modern digital technology, creating a low-cost, interactive, and fun learning experience. Third, this research was conducted at the junior high school level in the Islamic boarding school environment, which has its own characteristics and learning culture, so the results of this research are expected to make a more contextual contribution to the development of Islamic Religious Education learning media in Indonesia, especially in the Eastern Indonesia region where there is still a lack of academic studies related to learning media innovation.

This study aims to describe the application of website-based Tug-of-War quiz media in learning Islamic Religious Education in grade VIII at Datok Sulaiman Modern Islamic Boarding School, Putri Section, Palopo City, and to determine the increase in students' interest in learning after the media is applied. Through these objectives, the research is expected to provide a complete picture of implementing web-based Tug-of-War quiz media and its impact on students' learning interests in Islamic Religious Education subjects.

2. Methods

This study uses the Classroom Action Research (CAR) approach, based on the Kemmis and McTaggart model. CAR was chosen because it aims to identify difficulties in the teaching and learning process and find appropriate solutions based on real classroom conditions (Orosz et al., 2023). This model is carried out cyclically and iteratively through four stages, namely planning, implementation, observation, and reflection. The research is conducted in two cycles, each consisting of two meetings, with the second cycle serving as a follow-up to address shortcomings and ensure consistent results from the previous cycle. This study involves 28 students in grade VIII D, SMP Pesantren Modern Datok Sulaiman Putri Section, Palopo City, during the odd semester of the 2026/2027 school year, specifically in August 2026, on Jl. Puang H. Daud, Tompotikka Village, Wara District, Palopo City, South Sulawesi Province.

The research procedure begins with the planning stage, where the researcher designs learning tools, prepares web-based Tug-of-War quiz media by entering questions and answer keys into Google Sheets that are connected to media platforms, and compiles observation sheets and learning interest questionnaires. During implementation, teachers follow the Learning Implementation Plan, use web-based Tug-of-War quiz media, divide students into several groups, and have them discuss and answer quizzes in turn. During the learning process, observers observe the activities of teachers and students using observation sheets that have been systematically arranged. Next, the reflection stage analyzes data from observations and questionnaires to evaluate the action's success and formulate improvements for the next cycle.

The data in this study were collected through three techniques, namely observation to observe teacher and student activities, a closed questionnaire with a Likert scale model of 4 alternative answers (Strongly Disagree, Disagree, Agree, Strongly Agree) which includes four indicators of learning interest (feelings of pleasure, student attention, student involvement, and student interest),

as well as documentation in the form of photos of learning activities and other supporting documents. The collected data are then analyzed using a quantitative descriptive method. The analysis of teacher and student activities is calculated using a formula and categorized based on Arikunto's criteria (in Pitria, 2022), namely 90%–100% (Very Good), 80%–89% (Good), 70%–79% (Quite Good), and 0%–69% (Not Good). The analysis of learning interest was calculated as a percentage and categorized into 80%–100% (Very Interested), 70%–79% (Interested), 60%–69% (Moderately Interested), 50%–59% (Less Interested), and 0%–49% (Very Not Interested), with the indicator of research success determined if at least 75% of students obtained a learning interest score in the interested category. To measure learning gains, pre-test and post-tests were used, and results were categorized as (High), (Medium), and (Low). $P = \frac{F}{N} N\text{-Gain} = \frac{S_{\text{post}} - S_{\text{pre}}}{S_{\text{maks}} - S_{\text{pre}}} g > 0,70, 3 < g < 0,7g < 0,3$

3. Results

Application of Website-Based Tug-of-War Quiz Media in Islamic Religious Education Learning

The application of web-based Tug-of-War quiz media in learning Islamic Religious Education in grade VIII D SMP Pesantren Modern Datok Sulaiman Putri Section of Palopo City was carried out through two cycles, with each cycle consisting of two meetings. Before the action was given, the researcher conducted pre-cycle observations and found that students' interest in learning was still relatively low, with an average percentage of 64% (the category of lack of interest), and most students had not reached the criteria for completeness.

In Cycle I, the learning process was carried out by applying a website-based Tug-of-War quiz media that had been designed through the integration of Google Sheets as a database of questions and answer keys. Observations of teacher and student activities in Cycle I showed an increase from the first meeting to the second, although several aspects still needed improvement, especially in the closing activities. Therefore, reflections and improvements were made in Cycle II, such as providing starter questions at the beginning of learning, stricter classroom management during the division of group tasks, and rewards for active groups. The results of observations of teacher and student activities in both cycles can be seen in Table 1 and Table 2 below.

Table 1. Comparison of Observation Results of Teacher and Student Activities in Cycle I and Cycle II

Observed Aspects	Teacher Activities Cycle I	Cycle II Teacher Activities	Cycle I Student Activities	Cycle II Student Activities
Introduction	75% (Pretty Good)	83.3% – 91.6% (Good – Very Good)	75% (Pretty Good)	83.3% – 91.6% (Good – Very Good)
Core	60% – 70% (Not Good – Quite Good)	80% – 95% (Good – Very Good)	60.7% – 75% (Not Good – Quite Good)	75% – 96.4% (Pretty Good – Very Good)
Closing	58.3% – 75% (Poor – Quite Good)	83.3% (Good)	58.3% – 66.6% (Poor)	83.3% – 91.6% (Good – Very Good)

Based on Table 1, the website-based Tug-of-War quiz media was implemented systematically and showed significant improvement from Cycle I to Cycle II. In Cycle II, almost all aspects of teacher and student activities reached the very good category, especially the core activities, which showed a significant increase in student active involvement from 60.7% (poor) to 96.4% (very good). This shows that the media can create a more directed, interactive, and encouraging learning atmosphere.

Increased Students' Learning Interest After the Implementation of Website-Based Tug-of-War Quiz Media

To address the second problem, students' learning interest was measured using a questionnaire with four indicators: pleasure, attention, involvement, and interest. The results of the student learning interest questionnaire in Cycle I and Cycle II are presented in Table 2 below.

Table 2. Comparison of Results of Student Learning Interest Questionnaire Cycle I and Cycle II

Learning Interest Indicators	Cycle I (%)	Category	Cycle II (%)	Category	Increase (%)
Feeling Happy	91,29	Very interested	95,31	Very interested	+4,02
Student Attention	85,04	Very interested	90,84	Very interested	+5,80
Student Engagement	76,11	Interested	89,28	Very interested	+13,17
Student Interest	88,09	Very interested	94,94	Very interested	+6,85
Average	84,58	Very interested	92,47	Very interested	+7,89

Based on Table 2, students' overall learning interest increased from Cycle I to Cycle II. The average student learning interest increased from 84.58% (very interested category) in Cycle I to 92.47% (very interested category) in Cycle II. The largest increase was in the student involvement indicator, which rose by 13.17% from the interested category (76.11%) in Cycle I to the very interested category (89.28%) in Cycle II. This shows that improvements made in Cycle II, such as better group management and rewards, increased students' active participation more evenly.

Furthermore, to see the distribution of the increase in students' learning interest individually, an N-Gain analysis was carried out on the questionnaire scores of Cycle I and Cycle II. The N-Gain results are categorized into three criteria: high, medium, and low. The distribution of the students' N-Gain category is presented in Table 3 below.

Table 3. Distribution of N-Gain Categories of Students' Learning Interest

Category N-Gain	Number of Students	Percentage (%)
High ($g > 0,7$)	9	32,14%
Medium ($0,3 < g < 0,7$)	12	42,86%
Low ($g < 0,3$)	7	25,00%
Total	28	100%

Based on Table 3, 9 students (32.14%) showed an increase in interest in learning in the high category, 12 students (42.86%) in the medium category, and 7 students (25.00%) in the low category. One special case involved a student with the initials N, who showed decreased interest in learning. However, this is not due to weakness in the media or learning strategies, but rather to non-academic factors, such as students' personal conditions during the research. Overall, these results show that using website-based Tug-of-War quiz media positively affects students' interest in learning, with most students (74.99%) in the medium-to-high category.

4. Discussion

This study found two main findings. First, the application of website-based Tug-of-War quiz media in learning Islamic Religious Education in class VIII D of the Datok Sulaiman Modern Islamic Boarding School in the Putri Section, Palopo City, was implemented systematically through two

CAR cycles and showed significant improvement in quality from Cycle I to Cycle II. In Cycle I, teacher and student activities were still in the low-to-quite-good category; in Cycle II, they increased to the good-to-very-good category, especially in core activities, which reached 96.4%. Second, the application of this media was proven to increase student interest in learning, as shown by the increase in the average percentage of learning interest questionnaires from 84.58% (very interested category) in Cycle I to 92.47% (very interested category) in Cycle II. The largest increase was in the student involvement indicator, which rose from 76.11% to 89.28%.

These findings indicate that the website-based Tug-of-War quiz media not only delivers material but also serves as a pedagogical instrument that can change class dynamics. Students who were previously passive and tended to rely on their groupmates, after improvements were made in Cycle II, became more active, focused, and fully involved in group discussions and in answering quizzes. Thus, it can be interpreted that the success of this media lies in its ability to create a competitive but collaborative learning atmosphere, thereby encouraging students to participate optimally.

This research's findings can be explained through learning motivation theory and learning media theory. According to learning motivation theory, external stimuli in the form of interesting learning media can arouse students' internal motivation (Hidayaty et al., 2022; Leitão et al., 2022). Website-based Tug-of-War quiz media presents material through competitive, fun games, which can stimulate students' curiosity, attention, and involvement. This aligns with Naphani and Ramli (2024), who state that interest is attention focused on an object or activity that involves emotional aspects, excitement, and a tendency to achieve something.

In addition, these findings support the theory of learning media, which states that media clarifies the presentation of material, overcomes space and time limitations, and increases student learning activity and motivation (Dita et al., 2021; Rahim et al., 2022). In this context, the website-based Tug-of-War quiz media has transformed Islamic Religious Education learning from abstract and textual to more concrete, visual, and interactive. Integrating traditional tug-of-war games into digital media also aligns with the principles of Game-Based Learning, where game elements create a fun and meaningful learning experience (Jarno et al., 2026a; Widyantoro et al., 2025).

The results align with Jarno et al. (2026), who found that integrating tug-of-war games into interactive PowerPoint media effectively improves the learning outcomes of grade IV elementary school students, with an N-gain value of 0.57 (quite effective). The study concludes that the media significantly improves students' understanding of style concepts. This study builds on these findings by showing that tug-of-war media also increases interest in learning, especially in Islamic Religious Education subjects, which have rarely been studied in the context of traditional game media.

In addition, this finding supports Suwasono et al. (2025), who found that using tug-of-war games as a tool in the Problem-Based Learning (PBL) model positively influences students' understanding of business materials and energy concepts in grade XI of high school. Both studies show that elements of tug-of-war games can increase student involvement and understanding. However, this study differs in several ways. For example, it focuses on increasing interest in learning, uses more interactive web-based media, and is set at the junior high school level within a pesantren environment.

This research has three main novelties. First, this research focuses on increasing students' interest in learning, not just learning outcomes or conceptual understanding. Learning interest is a crucial affective foundation in Islamic Religious Education learning, which has not been widely explored in the context of tug-of-war media. Second, the media used is a website-based tug-of-war quiz developed specifically for Islamic Religious Education learning. This media integrates

traditional games with modern digital technology, creating a low-cost, interactive, and fun learning experience. Third, this research was conducted at the junior high school level in the Islamic boarding school environment, which has its own characteristics and learning culture, so the results of this research are expected to make a more contextual contribution to the development of Islamic Religious Education learning media in Indonesia, especially in the Eastern Indonesia region where there is still a lack of academic studies related to learning media innovation.

Theoretically, this study supports the view that technology-based interactive learning media can effectively increase students' interest in learning, especially in subjects often considered abstract and less engaging, such as Islamic Religious Education. This finding also enriches the literature on traditional game-based learning media in religious education, which has been understudied. In addition, this study provides empirical evidence that integrating local wisdom (tug-of-war games) with digital technology (website-based) can create positive synergies in learning, making it a model for developing contextual, relevant learning media for the digital generation.

Practically, this study's results suggest that Islamic Religious Education teachers be more creative in choosing and developing learning media that align with students' characteristics and the subject matter. A website-based Tug-of-War quiz can be a fun, interactive, low-cost learning strategy. Teachers also need to manage classroom time effectively so these media-based activities stay on target and aligned with learning goals. In addition, schools can provide teacher training to develop similar learning media, so learning innovations are not only individual but part of the school culture. For students, this media is expected to increase motivation and awareness of independent learning, so learning does not rely only on the teacher's explanation but also builds understanding through interaction with peers.

5. Conclusion

Based on the results of the research and discussion, it can be concluded that the application of the website-based Tug-of-War quiz media in learning Islamic Religious Education in grade VIII of the Datok Sulaiman Modern Islamic Boarding School in the Putri Section of Palopo City took place systematically through the stages of planning, implementation, observation, and reflection in two cycles, which significantly increased the activities of teachers and students from the poor category to the very good category, especially in the core activities, which reached 96.4%. The application of this media was also proven to increase student interest in learning, which was shown by an average percentage increase from 84.58% (very interested category) in Cycle I to 92.47% (very interested category) in Cycle II, with the highest increase in student involvement indicators.

However, this study has limitations because it was conducted in only one class at one school over a relatively short period, so the results cannot be generalized widely, and the long-term impact is not yet known. Therefore, it is recommended that Islamic Religious Education teachers make this media an alternative to interactive and *low-cost* learning strategies while still paying attention to classroom management, for schools to facilitate training in the development of similar media, and for future researchers to conduct research with a wider scope, stricter design, and longer duration to confirm these findings.

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