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The Effect of Flashcard-Based Learning Media on Students' Learning Motivation and Tajweed Rule Application Skills: A Quasi-Experimental Study at MTs Al-Qur'an Harsallakum Bengkulu

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ABSTRACT
This study examined the effect of flashcard-based learning media on students' learning motivation and tajweed application skills among eighth-grade students at MTs Al-Qur'an Harsallakum Bengkulu. A quantitative approach with a quasi-experimental nonequivalent control group design was employed. The population comprised 75 eighth-grade students, from which 44 students in classes VIII B and VIII C were purposively selected using a nonprobability sampling technique. Data were collected through a Likert-scale questionnaire, a performance test, and documentation. Instrument validity and reliability were assessed using Pearson Product Moment correlation and Cronbach's Alpha, respectively. Data were analyzed using prerequisite tests, simple linear regression, independent samples t-tests, and the coefficient of determination (R^2). The findings indicated significant effects of flashcard-based learning media on learning motivation ($\beta = 1.036$, $p < 0.001$; $R^2 = 0.609$; Cohen's $d = 2.655$) and tajweed application skills ($\beta = 0.867$, $p < 0.001$; $R^2 = 0.572$; Cohen's $d = 3.120$). These findings suggest that flashcard-based learning media can support improvements in students' learning motivation and tajweed application skills.

1. INTRODUCTION

Qur'anic learning is an essential component of Islamic education. In particular, *tajweed* ensures accurate pronunciation and proper Qur'anic recitation. QS. Al-Muzzammil (73): 4 emphasizes the obligation of measured recitation (*tartil*). Therefore, students must understand and practically apply *tajweed* rules. Their application skills represent an important indicator of Qur'anic learning achievement. However, *tajweed* instruction at Madrasah Tsanawiyah still faces several challenges. Teacher-centered instruction may limit students' active participation and practical learning opportunities. Merla et al. (2025) emphasize active learning strategies for increasing student engagement. Similarly, Arsyad (2020) highlights instructional media's role in communicating learning content. These perspectives support varied instructional approaches for conceptual and practical subjects. These challenges were observed at MTs Al-Qur'an Harsallakum Bengkulu. Preliminary observations were conducted on November 11, 2025. Instruction mainly involved teacher explanations, note-taking, and turn-taking Qur'anic recitation. Some students appeared passive, sleepy, unenthusiastic, or lacked reading confidence. Preliminary assessments revealed difficulties distinguishing *mad silah, mad badal, mad tamkin,* and *mad farq*. School data further demonstrate students' Qur'anic reading difficulties. Among 75 eighth-grade students, only 10 demonstrated proficient reading abilities. The remaining 65 students required further improvement. These findings indicate that most students had not achieved expected proficiency. Learning motivation and instructional support therefore require further attention. Learning motivation influences students' willingness to participate and sustain learning activities. Mayasari et al. (2021) demonstrate visual media's relevance to learning motivation. In *tajweed* instruction, motivation supports participation, practice, and rule application. Therefore, engaging instructional approaches

may encourage students' learning motivation. Flashcards offer one alternative for supporting more engaging learning activities. They present concise information through visual cards, symbols, and illustrations. In *tajweed* instruction, cards can display *madd* rules and Qur'anic examples. They can also illustrate the corresponding duration of recitation. Such representations may help students distinguish rules before practicing recitation.

Arsyad (2020) explains how visual media present information more concretely. Novianty et al. (2025) examine visual media through Edgar Dale's Cone of Experience. Their discussion addresses visual media effectiveness in supporting language learning. These perspectives provide a basis for considering flashcards in *tajweed* instruction. The use of facilitative media also relates to Islamic educational values. QS. Al-Baqarah (2): 185 emphasizes ease rather than hardship. This principle provides a broader normative perspective for accessible education. Flashcards offer structured and visually accessible presentations of *tajweed* materials. Previous studies have examined flashcards across different educational contexts. Sidik et al. (2025) investigated flashcard games and Islamic Religious Education outcomes. Irada and Setiawan (2024) examined flashcards and *tajweed* learning outcomes. These studies provide relevant foundations for investigating flashcard-based instruction. However, both address outcomes different from the present study's combined focus. This study addresses an empirical gap through two complementary learning outcomes. First, it examines motivation within the affective learning domain. Second, it investigates *tajweed* application skills as practical performance. Third, it focuses on *mad silah, mad badal, mad tamkin,* and *mad farq*. These materials represent specific applications within Madrasah Tsanawiyah Qur'anic instruction. Methodologically, this study employs a quasi-experimental nonequivalent control group design. This design compares groups receiving different instructional conditions without random assignment (Han, J. W., Park, J., & Lee, H., 2022). It provides a comparative basis for evaluating flashcard-based learning media. The findings are expected to contribute empirical evidence to Qur'anic education. They may also inform teachers' selection of instructional media. Accordingly, this study addresses two research questions. First, does flashcard-based learning media affect students' learning motivation? Second, does it affect students' *tajweed* application skills? Both questions concern eighth-grade students at MTs Al-Qur'an Harsallakum Bengkulu. Therefore, this study aims to analyze both effects.

2.METHODS

Research Design

This study employed a quantitative approach with a quasi-experimental design. Specifically, it used a nonequivalent control group design. The study examined flashcard-based learning media and two learning outcomes. These outcomes comprised learning motivation and *tajweed* application skills. Flashcard-based learning media served as the independent variable (X). Learning motivation (Y_1) and *tajweed* application skills (Y_2) served as dependent variables. The design compared an experimental group with a control group. Participants were not randomly assigned to these groups. Instead, the study involved two existing eighth-grade classes. The comparison focused on outcomes following different instructional treatments.

Population and Sample

The study population comprised 75 eighth-grade students at MTs Al-Qur'an Harsallakum Bengkulu. Participants were selected through nonprobability purposive sampling. The sample consisted of classes VIII B and VIII C. Together, these classes included 44 students. Class VIII [B/C] served as the experimental group. Class VIII [C/B] served as the control group. The experimental group received flashcard-based *tajweed* instruction. The control group received conventional teacher-led instruction. The teacher explained the tajweed rules orally and provided examples. Students listened, took notes, and practiced Qur'anic recitation individually. The teacher corrected

students' recitation and clarified the learning materials. This allocation followed the school's existing classroom arrangement.

Treatment Procedures and Learning Duration

The treatment was implemented during *tajweed* learning sessions. The experimental group used flashcards covering four *mad* rules. These rules included *mad silah, mad badal, mad tamkin,* and *mad farq*. Each flashcard presented [describe information, examples, symbols, or illustrations]. The teacher introduced the cards, explained their contents, and guided student practice. Students then identified the rules and applied them during recitation. The control group studied the same materials through. Both groups received instruction covering the same *tajweed* topics. The learning duration was three weeks, spanning February to March. Each group attended two instructional sessions. Each session lasted approximately 45 minutes. The treatment took place between February and March 2026.

Data Collection and Research Instruments

Data were collected through questionnaires, performance tests, and documentation. Students' learning motivation was measured using a 24-item Likert-scale questionnaire, while their practical application of *tajweed* rules was assessed using a performance test consisting of 15 items. Instrument validity was examined using Bivariate Pearson (Product Moment Pearson) correlation, with the calculated correlation coefficients compared against the critical *r*-table value of 0.361 at the 5% significance level. The results indicated that 19 of the 24 learning motivation questionnaire items were valid, while five items were invalid and excluded from the analysis. All 15 items of the *tajweed* performance test were found to be valid. Instrument reliability was assessed using Cronbach's Alpha. Based on the reliability table reported in the thesis, the coefficient was 0.884 for the learning motivation instrument (19 items) and 0.962 for the *tajweed* performance test (15 items), indicating high reliability for both instruments.

Data Analysis

Data analysis was conducted using IBM SPSS. Normality, homogeneity, and linearity tests examined the analysis prerequisites. Simple linear regression examined the relationships between flashcard media and each outcome. Independent samples *t*-tests compared outcomes between the experimental and control groups. The coefficient of determination (R^2) indicated the proportion of outcome variation explained by the model. Statistical significance was evaluated using [$p < 0.05$].

3.RESULTS AND DISCUSSION

Results

Assumption Testing Results

Before conducting the hypothesis tests, statistical assumption testing was performed to determine the suitability of the data for parametric analysis. The tests included normality, homogeneity of variance, and linearity. The Shapiro–Wilk test indicated that the significance values for learning motivation (Y_1) and the ability to apply tajwid rules (Y_2) were 0.448 and 0.312, respectively. Both values exceeded the 0.05 significance threshold, indicating that the data did not significantly deviate from a normal distribution. The homogeneity test using Levene's Test also showed significance values above 0.05 for both dependent variables: 0.087 for learning motivation and 0.180 for the ability to apply tajwid rules. These findings indicate that the variances between the experimental and control groups were homogeneous. Furthermore, the linearity test indicated a statistically significant linear component in the relationships between the flashcard learning media variable and both dependent variables ($p < 0.001$). The deviation-from-linearity results should also be considered to establish whether the linearity assumption is fully satisfied. Overall, the normality and homogeneity results supported the use of parametric statistical procedures. The regression

analysis was subsequently conducted to examine the relationships between flashcard learning media and the two learning outcomes.

Regression Analysis and Hypothesis Testing

Simple linear regression analysis was conducted to examine the relationship between the use of flashcard learning media (X) and two learning outcomes: learning motivation (Y_1) and the ability to apply tajwid rules (Y_2).

Table 1. Summary of Simple Linear Regression Results

Statistical indicators	Learning Motivation (Y_1)	Tajwid Application Skills (Y_2)
Constant (B)	-23.695	-17.516
Regression coefficient (B)	1.036	0.867
Standardized Beta	0.780	0.756
t-value	8.088	7.492
Significance	<0.001	<0.001
R	0.780	0.756
R^2	0.609	0.572

Source: Research data, processed using SPSS.

The regression analysis revealed a positive and statistically significant relationship between flashcard learning media and students' learning motivation. The regression coefficient was 1.036 ($t = 8.088$, $p < 0.001$), indicating that an increase in the flashcard media score was associated with an increase in the learning motivation score. The standardized beta coefficient of 0.780 further indicated a strong positive relationship. Similarly, flashcard learning media demonstrated a positive and statistically significant relationship with students' ability to apply tajwid rules. The regression coefficient was 0.867 ($t = 7.492$, $p < 0.001$), with a standardized beta coefficient of 0.756. This finding suggests that higher scores on the flashcard learning media variable were associated with better tajwid application skills. The coefficients of determination further indicated that the regression model explained 60.9% of the variation in learning motivation ($R^2 = 0.609$) and 57.2% of the variation in tajwid application skills ($R^2 = 0.572$). The remaining variation may be associated with other factors not included in the regression models.

Differences Between Experimental and Control Groups

To examine differences in learning outcomes following the intervention, independent-samples t-tests were conducted on the post-test scores of the experimental and control groups.

Table 2. Independent-Samples t-Test Results for Post-Test Scores

Outcome variable	Mean difference	t-value	df	p-value	Interpretation
Learning motivation (Y_1)	27.909	8.805	42	<0.001	Significant
Tajwid application skills (Y_2)	25.364	10.346	42	<0.001	Significant

Source: Research data, processed using SPSS.

The independent-samples t-test revealed a statistically significant difference in learning motivation between the experimental and control groups ($t = 8.805$, $df = 42$, $p < 0.001$). The mean difference of 27.909 points indicates that the experimental group achieved a higher average post-test score than the control group. A similar result was observed for tajwid application skills. The independent-samples t-test yielded a t-value of 10.346 ($df = 42$, $p < 0.001$), with a mean difference of 25.364 points. This result indicates that students in the experimental group performed significantly better than those in the control group after the instructional intervention. These findings provide statistical evidence of differences between the two groups following the implementation of flashcard-based instruction. However, the magnitude of within-group improvement from pre-test to post-test should be examined separately to establish the extent of score changes over time.

Effect Size Analysis

To assess the practical magnitude of the differences between the experimental and control groups, Cohen's d was calculated.

Table 3. Effect Size of Flashcard Learning Media

Outcome variable	Cohen's d	95% Confidence Interval	Effect magnitude
Learning motivation	2.655	1.828–3.464	Very large
Tajwid application skills	3.120	2.221–4.001	Very large

Source: Research data, processed using SPSS.

The effect size analysis demonstrated substantial differences between the experimental and control groups. For learning motivation, Cohen's d was 2.655, indicating a very large effect. Meanwhile, the effect size for tajwid application skills was 3.120, also indicating a very large effect. These results suggest that the differences observed between the two groups were not only statistically significant but also substantial in practical magnitude. Nevertheless, the effect sizes should be interpreted in conjunction with the descriptive pre-test and post-test results to provide a more comprehensive understanding of the intervention's effectiveness.

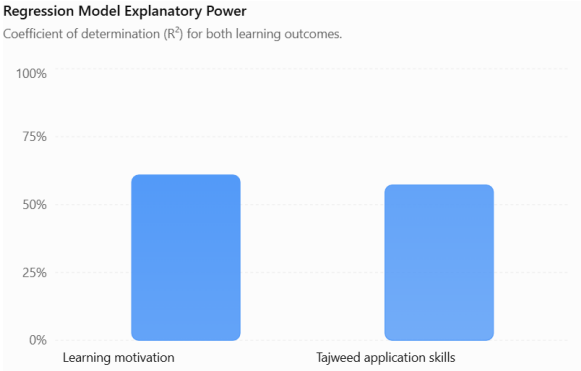


Figure 1. Regression Model Explanatory Power

The motivation model explained 60.9% of the variance in scores, while the tajweed skills model explained 57.2%. The remaining variance was associated with factors outside the models. These R^2 values do not establish that flashcards caused changes of those percentages.

Discussion

The Effect of Flashcard-Based Learning Media on Students' Learning Motivation

The findings indicate a positive relationship between flashcard use and students' learning motivation. The regression model explained 60.9% of motivation score variation. The post-test comparison also showed significantly higher motivation in the experimental group. These findings suggest that flashcards support students' engagement during Islamic Religious Education learning. However, the quasi-experimental design limits definitive causal interpretations. Initial motivation differences cannot be excluded because descriptive pre-test results remain unreported. Deci and Ryan (2013) explain motivation through autonomy, competence, and relatedness. Flashcard activities may support these needs through active recognition and matching exercises. Mayasari et al. (2021) emphasize motivation as an internal drive sustaining learning. Maslow (2023) also highlights comfort, safety, and self-esteem in motivation. Arsyad (2020) explains how visual media make learning messages more concrete. Muharam et al. (2024), Latifah and Lazulva (2020), Hasyifa et al. (2022), Safarulaili et al. (2025), and Triaswari et al. (2025) support interactive learning's motivational value. Nevertheless, novelty, teacher encouragement, peer interaction, and classroom conditions may also influence motivation. Teachers should therefore combine flashcards with supportive interaction and varied learning activities.

The Effect of Flashcard-Based Learning Media on Students' Ability to Apply Tajweed Rules

The findings indicate a positive relationship between flashcard use and practical *tajweed* application skills. The regression model explained 57.2% of the variation in students' performance scores. The experimental group also achieved significantly higher post-test scores than the control group. These findings suggest that visual prompts support students' recognition and application of *tajweed* rules. However, post-test differences alone cannot establish individual improvement from

baseline. Prior reading ability, practice frequency, attendance, and teacher guidance may also influence performance. Meara (2022) explains learning through associations between visual symbols and sounds. Flashcards may connect written *tajweed* rules with their corresponding recitation examples. Kasmar and Anwar (2021) emphasize repeated practice in Qur'anic learning. Bloom's psychomotor taxonomy describes skill development through observation, imitation, and independent performance. Yuli et al. (2024), drawing on Skinner's behaviorism, explain reinforcement through repeated learning responses. Bruner (1966) supports presenting abstract concepts through concrete representations. Previous studies by Amaliyah and Arifin (2026), Irada and Setiawan (2024), and Annur et al. (2024) support flashcards' role in *tajweed* learning. Rizqullah et al. (2023), Maulana, Fatimah, and Rohmah (2024), Habibi et al. (2026), and Rohmah (2024) emphasize repetition, retention, and pronunciation accuracy. Hasyifa et al. (2022), Safarulaili et al. (2025), and Triaswari et al. (2025) also report increased engagement through interactive learning. These findings support integrating visual media with teacher modelling and direct recitation practice.

4.CONCLUSION

This study found that flashcard-based learning media was positively associated with students' learning motivation and tajweed application skills. These findings were obtained from eighth-grade students at MTs Al-Qur'an Harsallakum Bengkulu. Simple linear regression and independent-samples t-tests showed statistically significant results. The motivation model explained 60.9% of score variance, while the tajweed skills model explained 57.2%. These findings indicate promising results within the specific research context. The findings suggest that flashcards may support student engagement and understanding of tajweed rules. Their visual presentation may also help students recognize and apply tajweed rules during recitation. However, these results should not be interpreted as evidence of universal effectiveness. The study involved a limited sample and two existing classes without random assignment. Therefore, other factors may have contributed to the observed differences. These factors may include students' prior abilities, classroom conditions, and teacher guidance. In practice, teachers may consider flashcards as an alternative instructional medium for Qur'an and Hadith lessons. Their use should be combined with teacher explanations, modelling, and direct recitation practice. Future studies should involve larger samples and more diverse educational settings. Researchers may also examine digital flashcards and other interactive learning technologies. Further investigations using stronger experimental designs could provide more robust evidence.

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