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# THE RELATIONSHIP BETWEEN STAD COOPERATIVE LEARNING IMPLEMENTATION AND STUDENTS' LEARNING OUTCOMES IN ISLAMIC CREED AND MORALS

Muhammad Fauzi, Tuti Alawiyah, Zainidah Siagian
Universitas Islam Sumatera Utara
Email. mfauji636@gmail.com, tuti@fai.uisu.ac.id, siagianzaini@gmail.com

**Abstrak**

Penelitian ini bertujuan untuk menganalisis hubungan penerapan model pembelajaran kooperatif tipe Student Teams–Achievement Divisions (STAD) dengan hasil belajar siswa pada mata pelajaran Islamic Creed and Morals kelas XI MAS Al-Manar Medan. Penelitian menggunakan pendekatan kuantitatif dengan desain korelasional. Populasi penelitian berjumlah 61 siswa, sedangkan data yang dapat dianalisis berasal dari 44 responden. Pengumpulan data dilakukan melalui angket, observasi, dan dokumentasi. Analisis data mencakup pengujian validitas, reliabilitas, regresi linear sederhana, dan pengujian hipotesis. Hasil penelitian menunjukkan bahwa instrumen penerapan STAD memiliki koefisien Cronbach's alpha sebesar 0,809, sedangkan instrumen hasil belajar memperoleh nilai 0,853. Analisis regresi yang dilaporkan menghasilkan koefisien positif sebesar 0,703 dengan nilai t sebesar 5,381. Temuan tersebut mengindikasikan adanya hubungan positif antara penerapan STAD dan hasil belajar siswa. Namun, terdapat ketidaksesuaian antara hasil analisis regresi, koefisien determinasi, dan tabel analisis varians sehingga diperlukan verifikasi statistik lebih lanjut. Selain itu, pengukuran hasil belajar melalui angket belum sepenuhnya merepresentasikan pencapaian kognitif berdasarkan nilai ujian. Penelitian ini menegaskan pentingnya pembelajaran kooperatif terstruktur dalam mendukung interaksi akademik, tanggung jawab individu, dan pemahaman materi keagamaan. Temuan penelitian dapat menjadi pertimbangan bagi guru dalam mengembangkan strategi pembelajaran yang lebih partisipatif, sekaligus mendorong penelitian lanjutan dengan pengukuran prestasi akademik yang lebih objektif.

**Kata kunci:** STAD, Hasil Belajar, Akidah Akhlak

**Abstract**

This study examined the relationship between the implementation of the Student Teams–Achievement Divisions (STAD) cooperative learning model and eleventh-grade students' learning outcomes in Islamic Creed and Morals at MAS Al-Manar Medan. A quantitative correlational research design was employed. The target population comprised 61 students, while 44 valid questionnaire responses were included in the analysis. Data were collected through questionnaires, classroom observations, and academic documentation. Statistical procedures included instrument validity testing, reliability analysis, simple linear regression, and hypothesis testing. The findings indicated acceptable internal consistency, with Cronbach's alpha coefficients of 0.809 for STAD implementation and 0.853 for learning outcomes. The reported regression analysis produced a positive coefficient of 0.703 and a t-statistic of 5.381, suggesting a positive association between the investigated variables. However, inconsistencies across the regression, determination coefficient, and analysis of variance results require further statistical verification. Additionally, questionnaire-based learning perceptions do not fully represent objectively measured cognitive achievement. The study highlights the potential relevance of structured cooperative learning for promoting academic interaction, individual accountability, and conceptual understanding in Islamic religious education. These findings offer preliminary pedagogical insights while emphasizing the importance of reliable measurement and consistent statistical reporting.

**Keywords:** STAD, Learning Outcomes, Islamic Creed and Morals

## INTRODUCTION

Islamic religious education plays a fundamental role in developing students' spiritual awareness, moral integrity, intellectual competence, and social responsibility. Within the Indonesian Islamic education system, Islamic Creed and Morals constitutes an essential subject that integrates Islamic theological understanding with the cultivation of ethical behavior. Its educational orientation extends beyond transmitting religious knowledge to fostering students' ability to internalize Islamic values and apply them in everyday life. This perspective aligns with the broader understanding that effective education should integrate cognitive development, social interaction, and character formation. Research has demonstrated that classroom environments emphasizing meaningful participation and positive interpersonal relationships can strengthen students' academic engagement and learning outcomes (Wentzel, 1998; Ryan & Deci, 2000). Consequently, Islamic Creed and Morals instruction requires pedagogical approaches that facilitate both conceptual understanding and collaborative learning experiences.

The importance of moral education is reflected in Islamic teachings, particularly Surah Al-Ahzab (33:21), which presents the Prophet Muhammad as an exemplary model of ethical conduct. Similarly, Surah Al-Ma'idah (5:2) emphasizes cooperation in righteousness and piety. These principles provide a religious foundation for educational practices that encourage mutual assistance, collective responsibility, and constructive interaction. In classroom contexts, such values can be operationalized through cooperative learning strategies that promote shared academic goals while maintaining individual accountability. Johnson and Johnson (2009) explain that social interdependence constitutes a fundamental mechanism through which cooperative activities influence achievement and interpersonal relationships. Furthermore, Roseth et al. (2008) demonstrate that cooperative goal structures can positively influence academic achievement and peer relationships, reinforcing the educational relevance of structured student collaboration.

Cooperative learning represents a student-centered instructional approach in which learners work collaboratively in small groups to achieve shared educational objectives. Unlike conventional teacher-centered instruction, cooperative learning emphasizes active participation, peer assistance, interpersonal communication, and collective problem-solving. Slavin (2014) identifies group goals and individual accountability as essential mechanisms underlying the effectiveness of cooperative learning. Similarly, Gillies (2004) demonstrates that structured cooperative activities can improve students' interaction patterns and learning behaviors. Research by Kyndt et al. (2013) further indicates that cooperative learning generally produces positive effects on academic achievement and students' attitudes toward learning. These findings suggest that cooperative learning may offer an appropriate instructional framework for Islamic Creed and Morals, particularly when students must understand abstract religious concepts through discussion and collaborative interpretation.

Among cooperative learning approaches, Student Teams–Achievement Divisions (STAD) provides a structured instructional model combining teacher presentations, heterogeneous learning teams, individual assessments, improvement scores, and team recognition. Students typically collaborate in groups comprising four or five members with different academic

abilities and social backgrounds. This arrangement encourages peer tutoring while ensuring that individual achievement contributes to collective success. Slavin (1990) emphasizes the importance of motivational structures in cooperative learning, particularly the relationship between group rewards and individual responsibility. Additional research indicates that cooperative instructional structures can support academic achievement when students actively participate and remain accountable for their learning (Springer et al., 1999; Tran, 2014). Therefore, STAD offers a potentially relevant strategy for improving students' cognitive achievement in religious education.

Nevertheless, instructional practices in Islamic educational institutions may encounter challenges involving limited student participation, insufficient collaborative interaction, and varying levels of conceptual understanding. Teacher-centered approaches can restrict opportunities for students to articulate ideas, exchange perspectives, and develop independent understanding. Freeman et al. (2014) demonstrate that active learning approaches can improve academic performance compared with traditional lecturing in undergraduate science education. Similarly, Prince (2004) identifies substantial evidence supporting active learning and collaborative instructional practices. Although these findings originate from educational contexts different from Islamic secondary schools, they provide a theoretical rationale for examining participatory instructional models in Islamic Creed and Morals classrooms.

Preliminary observations at MAS Al-Manar Medan indicate variations in eleventh-grade students' Islamic Creed and Morals learning outcomes. Some students reportedly experience difficulties understanding instructional concepts, participating in classroom discussions, and collaborating effectively with classmates. Although teachers have introduced cooperative learning practices, the relationship between STAD implementation and students' cognitive learning outcomes has not been systematically established. This condition highlights the importance of examining whether variations in instructional implementation correspond with differences in academic achievement. Previous studies have associated cooperative learning with improved achievement, motivation, and classroom engagement across educational settings (Nichols & Miller, 1994; Hänze & Berger, 2007; Zakaria et al., 2010). However, these findings cannot automatically establish an equivalent relationship within the distinctive institutional and curricular environment of MAS Al-Manar Medan.

The present study addresses this contextual gap by investigating STAD implementation specifically within eleventh-grade Islamic Creed and Morals instruction. Its distinction lies in integrating the cooperative learning framework with Islamic religious education while focusing exclusively on measurable cognitive learning outcomes rather than broader behavioral or affective dimensions. This focus is important because academic achievement represents a specific educational outcome that should be distinguished from student motivation, cooperation, and moral development. Research has emphasized the importance of carefully examining cooperative learning mechanisms and their relationship with academic performance (Webb, 2009; Capar & Tarim, 2015; Bores-García et al., 2021). Accordingly, the study adopts a correlational orientation rather than assuming that STAD implementation necessarily produces causal improvements.

Specifically, this research aims to describe the implementation of STAD cooperative learning in eleventh-grade Islamic Creed and Morals instruction at MAS Al-Manar Medan, examine students' cognitive learning outcomes, and determine the relationship between STAD implementation and those outcomes. The study is expected to contribute empirical evidence to discussions concerning cooperative learning in Islamic secondary education. Practically, its findings may assist teachers in evaluating instructional strategies, support school administrators in improving pedagogical quality, and provide future researchers with a contextual foundation for investigating collaborative learning in religious education.

## METHOD

This study employed a quantitative approach using a correlational research design to examine the relationship between the implementation of the Student Teams–Achievement Divisions (STAD) cooperative learning model and students' cognitive learning outcomes in Islamic Creed and Morals instruction. The correlational design was selected to determine the direction, strength, and statistical significance of the association between instructional implementation and academic achievement without manipulating the research variables. The independent variable (X) was STAD implementation, while the dependent variable (Y) was students' cognitive learning outcomes.

The research was conducted at MAS Al-Manar Medan, a private Islamic senior high school in Medan, Indonesia, in June 2026, during the 2025–2026 academic year. The target population comprised all eleventh-grade students enrolled in Islamic Creed and Morals instruction. The study involved 61 students. The sampling framework specified total sampling when the population contained fewer than 100 students and simple random sampling when it exceeded 100. However, the actual sampling procedure requires confirmation against the school's enrollment records.

STAD implementation was operationalized through five cooperative learning indicators: positive interdependence, individual accountability, face-to-face interaction, social skills, and group processing. These indicators were measured using a 20-item questionnaire, with four statements representing each dimension. Responses followed a four-point Likert scale ranging from strongly disagree (1) to strongly agree (4). Negatively worded statements required reverse scoring.

Students' cognitive learning outcomes were measured using documented Islamic Creed and Morals examination scores, including daily assessments or semester examinations. Academic records served as the primary measurement of achievement, excluding self-reported attitudes and behavioral indicators.

Data collection involved questionnaires, academic documentation, and classroom observations. Questionnaires assessed students' perceptions of STAD implementation, while documentation provided achievement scores and relevant institutional information. Classroom observations supplemented questionnaire responses by examining collaborative activities, student participation, and instructional procedures. These observations supported contextual interpretation rather than constituting an additional quantitative outcome variable.

Questionnaire validity was assessed through item-total correlations using Pearson's product-moment technique, with statistical significance evaluated at the 0.05 level. Internal consistency was examined using Cronbach's alpha, with coefficients of at least 0.70 considered acceptable. Negatively phrased items were reverse-coded before analysis.

Descriptive statistics summarized STAD implementation scores and academic achievement. Pearson correlation analysis was designated to examine the relationship between the variables after assessing linearity and relevant statistical assumptions. Spearman's rank correlation was considered when Pearson's assumptions were not adequately satisfied. Statistical significance was evaluated using a two-tailed test at $\alpha = 0.05$, with correlation coefficients interpreted according to their magnitude and direction. All analyses were intended to be conducted using SPSS. Findings were interpreted as associations rather than evidence of causation.

## RESULTS AND DISCUSSIONS

### Implementation of the STAD Cooperative Learning Model in Islamic Creed and Morals Instruction

The implementation of the Student Teams–Achievement Divisions (STAD) cooperative learning model was investigated among eleventh-grade students at MAS Al-Manar Medan during the 2025–2026 academic year. The research focused on students enrolled in three academic classes: XI IPA, XI IPS 1, and XI IPS 2. These classes comprised 22, 17, and 22 students, respectively, representing a total population of 61 students. Questionnaire distribution was conducted on June 9, 2026, following preliminary classroom observations and institutional authorization.

Of the 61 questionnaires distributed, 51 were returned, while 44 were considered suitable for statistical analysis. Therefore, the usable response rate was approximately 72.13% of the targeted population and 86.27% of the returned questionnaires. This reduction in sample size indicates that the final statistical analysis represented 44 respondents rather than the originally targeted 61 students.

**Table 1.** Questionnaire Distribution and Response Rate

| Description | Frequency | Percentage |
|---|---|---|
| Targeted students | 61 | 100% |
| Questionnaires returned | 51 | 83.61% |
| Questionnaires not returned | 10 | 16.39% |
| Usable questionnaires | 44 | 72.13% |
| Returned but unusable | 7 | 11.48% |

Source: Research data, 2026. Percentages use the 61 targeted students as the denominator.

The implementation of STAD was assessed through questionnaire indicators reflecting positive interdependence, individual accountability, face-to-face interaction, social skills, and group processing. Classroom observations additionally documented students' attention to teacher explanations and their participation in cooperative instructional activities. However, the available findings do not provide item-level descriptive means, standard deviations, or percentages for each

implementation indicator. Consequently, the overall implementation level cannot be classified reliably as low, moderate, or high.

Instrument testing indicated that the reported item correlations for the STAD questionnaire ranged from 0.394 to 0.842, exceeding the stated critical correlation value of 0.304. The questionnaire also demonstrated satisfactory internal consistency, with Cronbach's alpha reaching 0.809. These findings provide preliminary statistical support for the consistency of the STAD implementation measure, although the original report presents only ten item-validity coefficients despite the methodological description specifying twenty questionnaire items.

The implementation findings can be interpreted through the theoretical framework of cooperative learning, which emphasizes structured interaction and shared responsibility. Johnson and Johnson (2009) explain that positive interdependence and individual accountability are essential conditions for productive cooperative learning. Within Islamic Creed and Morals instruction, these principles may facilitate collective interpretation of religious concepts while encouraging students to develop independent understanding.

STAD differs from unstructured group activities because it combines collaborative preparation with individual assessment and group recognition. Slavin (2014) argues that group goals and individual accountability help explain the academic benefits of cooperative learning. Similarly, Gillies (2004) demonstrates that structured cooperative learning can promote productive student interaction.

The reported reliability coefficient suggests that questionnaire responses displayed acceptable internal consistency. Nevertheless, reliability does not independently establish that all STAD procedures were implemented consistently. Observational evidence, teacher documentation, and indicator-specific scores would strengthen the assessment of instructional fidelity.

The findings also suggest that cooperative instruction may provide opportunities for students to exchange explanations and clarify difficult concepts. Webb (2009) emphasizes that collaborative dialogue contributes to learning when students provide meaningful explanations and engage actively with their peers. Such interaction is particularly relevant to Islamic Creed and Morals, where students must connect theological concepts with ethical reasoning.

Moreover, the heterogeneous group structure associated with STAD can potentially accommodate differences in academic ability. Kyndt et al. (2013) report generally positive academic outcomes associated with face-to-face cooperative learning. However, these findings should not be interpreted as proof that the implementation at MAS Al-Manar Medan reached an optimal level.

Overall, the available evidence establishes that STAD-related instructional practices were investigated using a questionnaire with acceptable reported internal consistency. More detailed descriptive statistics are necessary to determine the quality and consistency of implementation across its five dimensions.

**Cognitive Learning Outcomes in Islamic Creed and Morals Among Eleventh-Grade Students**

The second research objective was to examine students' cognitive learning outcomes in Islamic Creed and Morals at MAS Al-Manar Medan. Cognitive achievement was conceptually defined as students' demonstrated understanding of instructional content, including their ability to recognize, explain, interpret, and apply relevant religious concepts. The proposed research methodology identified daily examination scores or semester assessment records as the appropriate sources of achievement data.

The available research report, however, primarily presents questionnaire validity and reliability results for a variable labeled learning outcomes. Ten questionnaire items were examined using Pearson item-total correlations. The reported coefficients ranged from 0.448 to 0.731, exceeding the critical value of 0.304 at the 5% significance level. Cronbach's alpha for the learning-outcomes questionnaire was 0.853, indicating satisfactory internal consistency.

Table 2. Reported Instrument Quality

| Variable | Item correlation range | Cronbach's α |
|---|---|---|
| STAD implementation (X) | 0.394–0.842 | 0.809 |
| Learning outcomes (Y) | 0.448–0.731 | 0.853 |

Source: Research data, 2026. Ten validity coefficients are reported for each variable.

These statistical results indicate that the reported questionnaire items met the study's stated item-correlation criterion. Nevertheless, the available material does not present students' actual examination scores, mean achievement, standard deviation, minimum or maximum scores, or distribution across achievement categories. Consequently, it is not possible to determine whether the students' cognitive achievement was predominantly high, moderate, or low.

Furthermore, the questionnaire statements for the learning-outcomes variable include perceived understanding, learning interest, classroom participation, and moral behavior. These constructs extend beyond cognitive achievement and therefore cannot automatically be interpreted as equivalent to examination-based learning outcomes.

The distinction between cognitive achievement and students' perceptions of learning is essential for interpreting the findings accurately. Academic achievement generally requires evidence of demonstrated knowledge or competence, whereas questionnaire responses may reflect confidence, motivation, engagement, or perceived improvement.

The reported internal consistency coefficient of 0.853 indicates that the questionnaire items were statistically related. However, a high Cronbach's alpha does not establish that an instrument measures a single intended construct. Therefore, the learning-outcomes questionnaire requires additional construct validation before being treated as an exclusive measure of cognitive achievement.

Theoretically, cooperative learning may support cognitive development through explanation, elaboration, and peer-assisted understanding. Springer et al. (1999) found positive achievement outcomes associated with small-group learning across several academic disciplines.

Freeman et al. (2014) similarly demonstrated advantages of active learning over conventional lecturing in undergraduate science education. Although these studies were conducted in different educational contexts, they provide a rationale for examining collaborative instruction within Islamic secondary education.

Students' cognitive achievement may also be related to motivational and interpersonal conditions. Ryan and Deci (2000) explain that autonomy, competence, and relatedness are important dimensions of academic motivation. Wentzel (1998) likewise identifies meaningful relationships with teachers and peers as relevant to students' school motivation.

These perspectives suggest that STAD may support academic achievement by encouraging active participation and collaborative responsibility. Nevertheless, such theoretical expectations must be distinguished from empirical findings obtained in the present study.

In the context of Islamic Creed and Morals, cognitive learning outcomes should ideally reflect students' understanding of Islamic beliefs, ethical principles, and their conceptual applications. Objective examination records would provide stronger evidence than self-reported statements concerning interest or perceived improvement.

Nichols and Miller (1994) demonstrate that cooperative learning can influence students' motivation, while Hänze and Berger (2007) identify relationships among cooperative learning, motivation, and student characteristics. These findings underscore the importance of distinguishing motivational outcomes from academic achievement.

Accordingly, the present findings provide evidence concerning the statistical consistency of the reported learning-outcomes questionnaire but do not establish the actual distribution of students' cognitive examination performance. Future analysis should incorporate documented academic scores and descriptive achievement statistics to fulfill the second research objective more comprehensively.

## Relationship Between STAD Cooperative Learning Implementation and Students' Cognitive Learning Outcomes

The third research objective was to determine the relationship between the implementation of the Student Teams–Achievement Divisions (STAD) cooperative learning model and eleventh-grade students' learning outcomes in Islamic Creed and Morals at MAS Al-Manar Medan. The study employed quantitative statistical procedures involving simple linear regression, hypothesis testing, and coefficient of determination analysis. The statistical analysis was based on 44 usable questionnaires collected during the 2025–2026 academic year.

The reported regression coefficient for STAD implementation was positive, with an unstandardized coefficient of 0.703 and a standard error of 0.131. The standardized regression coefficient was reported as 0.648. Furthermore, the regression analysis produced a t-statistic of 5.381 and a reported significance value of 0.000, conventionally expressed as $p < .001$. These findings, considered independently, suggest a statistically significant positive association between STAD implementation scores and the reported learning-outcomes measure.

**Table 3.** Reported Simple Linear Regression Results

| Predictor | B | SE | β | t | p |
|---|---|---|---|---|---|
| Constant | 9.838 | 4.340 | — | 2.267 | .029 |
| STAD implementation | 0.703 | 0.131 | 0.648 | 5.381 | < .001 |

Source: Research data, 2026. Values reproduced from the supplied regression coefficients table.

The regression equation based on the reported unstandardized coefficients was:

$$Y = 9.838 + 0.703X$$

This equation indicates that a one-unit increase in the STAD implementation score corresponds to an estimated increase of 0.703 units in the predicted learning-outcomes score. However, this coefficient represents a statistical association and does not independently demonstrate that STAD implementation causes improvement in academic achievement.

The original research report presents inconsistent coefficients of determination. One section reports an explained variance of 42.0%, whereas another presents an $R^2$ value of 0.542. The reported model summary also lists $R = 0.648$, which mathematically corresponds to $R^2 \approx 0.420$ rather than 0.542. Additionally, the ANOVA table reports a regression sum of squares of 13.360 and a total sum of squares of 185.636, implying $R^2 \approx 0.072$. These inconsistencies prevent definitive confirmation of the model's explanatory power.

The positive regression coefficient is consistent with the theoretical expectation that structured cooperative learning may be associated with stronger academic performance. Slavin (1990, 2014) emphasizes that cooperative learning can support achievement through group incentives, individual accountability, and opportunities for peer-assisted learning. Similarly, Johnson and Johnson (2014) identify structured cooperation as an important instructional mechanism for promoting educational outcomes.

The STAD framework encourages students to exchange explanations, resolve misunderstandings, and develop responsibility for individual and collective academic progress. Such processes may be particularly valuable in Islamic Creed and Morals instruction, where conceptual understanding requires interpretation and reflection. Tran (2014) reports positive achievement and knowledge-retention outcomes associated with cooperative learning, while Zakaria et al. (2010) identify favorable academic outcomes in cooperative mathematics instruction.

Broader research also supports the educational relevance of cooperative learning. Capar and Tarim (2015) report positive effects on mathematics achievement and attitudes, while Roseth et al. (2008) demonstrate advantages of cooperative goal structures for adolescent achievement and peer relationships. Bores-García et al. (2021) further highlight the relevance of cooperative learning across instructional settings.

Nevertheless, these findings do not eliminate the methodological limitations of the present study. The conflicting regression statistics require verification against the original SPSS output. Moreover, the distinction between questionnaire-based learning perceptions and documented cognitive examination scores remains essential.

The study's correlational design also limits causal interpretation. Although the reported regression coefficient is positive, factors such as prior achievement, motivation, teacher competence, and classroom conditions may contribute to the observed association.

Therefore, the findings provide preliminary evidence of a positive relationship between reported STAD implementation and the learning-outcomes measure. A definitive conclusion concerning statistical significance, explained variance, and cognitive achievement requires reconciliation of the statistical tables and confirmation of the dependent variable's measurement.

## CONCLUSIONS

This study examined the relationship between the implementation of the Student Teams–Achievement Divisions (STAD) cooperative learning model and eleventh-grade students' learning outcomes in Islamic Creed and Morals at MAS Al-Manar Medan. Employing a quantitative correlational approach, the research analyzed responses from 44 students to investigate instructional implementation, learning outcomes, and their statistical relationship. The findings indicated that the STAD implementation questionnaire demonstrated acceptable internal consistency, with a Cronbach's alpha coefficient of 0.809, while the learning outcomes questionnaire achieved 0.853. The reported regression analysis suggested a positive association between STAD implementation and students' learning outcomes, with a regression coefficient of 0.703 and a reported t-value of 5.381. However, inconsistencies among the reported regression statistics, coefficients of determination, and analysis of variance results require verification before definitive conclusions regarding statistical significance and explanatory power can be established. Furthermore, questionnaire-based learning perceptions must be distinguished from objectively measured cognitive achievement. Theoretically, STAD provides opportunities for collaborative interaction, individual accountability, and peer-assisted understanding, potentially supporting meaningful religious education. The study highlights the relevance of structured cooperative learning in Islamic secondary education while emphasizing the necessity of consistent measurement, accurate statistical reporting, and further research to establish its relationship with cognitive academic achievement.

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