



THE USE OF JOYFUL LEARNING TO IMPROVE STUDENTS' MOTIVATION AND MATHEMATICS LEARNING OUTCOMES IN AN ELEMENTARY SCHOOL

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ABSTRAK

Penelitian ini bertujuan meningkatkan motivasi dan hasil belajar matematika siswa melalui pendekatan Joyful Learning di SD Negeri 24 Banda Aceh. Penelitian menggunakan metode penelitian tindakan kelas yang melibatkan 27 siswa kelas II. Penelitian dilaksanakan dalam dua siklus, dengan setiap siklus meliputi tahap perencanaan, tindakan, observasi, dan refleksi. Data diperoleh melalui tes hasil belajar serta observasi terhadap partisipasi dan motivasi siswa selama pembelajaran. Hasil penelitian menunjukkan adanya peningkatan hasil belajar matematika setelah penerapan pendekatan Joyful Learning. Nilai rata-rata siswa meningkat dari 70,1 pada kondisi awal menjadi 80,8 pada Siklus I dan 86,5 pada Siklus II. Hasil observasi juga menunjukkan peningkatan perhatian, partisipasi, antusiasme, dan keberanian siswa dalam mengikuti kegiatan pembelajaran. Siswa semakin aktif mengerjakan latihan dan menunjukkan pemahaman yang lebih baik terhadap materi penjumlahan dan pengurangan bilangan dua angka. Temuan tersebut menunjukkan bahwa Joyful Learning dapat menciptakan kegiatan belajar yang lebih menyenangkan sekaligus mendukung peningkatan hasil belajar dan partisipasi siswa. Pendekatan ini dapat digunakan sebagai salah satu alternatif pembelajaran matematika di sekolah dasar.

Kata Kunci: Joyful Learning, motivasi belajar, hasil belajar matematika, sekolah dasar, penelitian tindakan kelas.

ABSTRACT

This study aimed to improve students' motivation and mathematics learning outcomes through the Joyful Learning approach at SD Negeri 24 Banda Aceh. The study employed classroom action research involving 27 second-grade students. The research was conducted in two cycles, with each cycle consisting of planning, action, observation, and reflection. Data were collected through learning outcome tests and observations of students' participation and learning motivation. The findings showed a positive improvement in students' mathematics learning outcomes after the implementation of Joyful Learning. The average score increased from 70.1 in the preliminary condition to 80.8 in Cycle I and 86.5 in Cycle II. Classroom observations also indicated increased student attention, participation, enthusiasm, and willingness to respond during learning activities. Students became more actively involved in completing exercises and demonstrated better understanding of two-digit addition and subtraction. These findings



indicate that Joyful Learning can provide a more engaging learning experience while supporting improvements in mathematics achievement and student participation. The approach is recommended as an alternative strategy for elementary mathematics learning, particularly when teachers combine enjoyable activities with clear instructional objectives and appropriate classroom management.

Keywords: *Joyful Learning, learning motivation, mathematics learning outcomes, elementary school, classroom action research.*

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INTRODUCTION

Teachers play an important role in developing learning environments that encourage students to participate actively in classroom activities. Their responsibility extends beyond delivering instructional material because classroom interaction, teaching strategies, and emotional conditions can influence students' willingness to learn. Learning motivation is particularly important because students who are interested in classroom activities are more likely to participate, respond to questions, complete learning tasks, and persist when they encounter difficulties. Previous research has reported a positive relationship between teaching variation, learning motivation, and mathematics achievement among elementary school students (Setiyaningsih & Sunarso, 2020).

Elementary school students have different levels of readiness, interest, and learning needs. A classroom dominated by teacher explanations may not provide sufficient opportunities for children to explore ideas, communicate their understanding, and participate in learning activities. Mathematics may present an additional challenge because some students perceive numerical operations as difficult when instruction relies heavily on explanation and individual written exercises. Research involving elementary school students has shown that learning interest and instructional media are positively associated with mathematics achievement (Rusdiyanah & Bektiningsih, 2021).

Learning motivation refers to the internal and external forces that encourage students to initiate, maintain, and direct their learning activities toward particular goals. Motivation can be reflected through students' willingness to participate, attention to instruction, persistence in completing tasks, and enthusiasm during classroom activities. When these characteristics are weak, students may have difficulty using their academic abilities effectively. Therefore,



instructional strategies should provide opportunities for students to experience achievement while participating in activities that are appropriate for their developmental characteristics.

One approach that can be used to create such learning conditions is *Joyful Learning*. The approach emphasizes enjoyable classroom activities, positive interaction, active participation, and learning experiences that reduce unnecessary tension. Rather than separating enjoyment from academic achievement, *Joyful Learning* incorporates games, movement, questions, simple challenges, learning media, and collaborative activities into instructional sequences. A recent systematic review of joyful learning in mathematics found that the approach has frequently been applied at the elementary level and is associated with student motivation, participation, and more positive experiences in mathematics learning (Gunawan et al., 2026).

The relevance of *Joyful Learning* is particularly strong for younger elementary students. Children at this level benefit from concrete activities and opportunities to interact with learning materials and peers. Previous classroom action research has demonstrated that joyful learning can improve students' motivation and mathematics achievement. Lestari (2012), for example, reported increases in students' readiness, attention, enthusiasm, and mathematics achievement after the implementation of joyful learning. Similar findings were reported in another classroom action research study involving elementary school students, in which joyful learning was associated with improved motivation and achievement in mathematics.

More recent studies have continued to report the potential of joyful learning for mathematics instruction. Yuliani and Kaltsum (2026) found that joyful mathematics learning supported positive motivational responses and active engagement among elementary students, particularly when concrete materials and game-based activities were incorporated. The study also emphasized the importance of classroom management because differences in students' learning pace may become more visible during enjoyable and interactive activities.

The preliminary observation conducted at SD Negeri 24 Banda Aceh identified several learning problems in Grade II. Classroom activities were still largely teacher-directed, while some students showed limited attention and participation during mathematics lessons. Several students were reluctant to respond to questions or express their ideas, and enthusiasm during individual tasks was also limited. These conditions indicated the need for an instructional



approach that could increase students' involvement while maintaining attention to the mathematical objectives.

The present study therefore applied *Joyful Learning* to mathematics instruction for Grade II students at SD Negeri 24 Banda Aceh. The study focused on classroom improvement through two action cycles and examined changes in students' mathematics learning outcomes together with classroom observations of participation and enthusiasm. The study aimed to determine whether the implementation of *Joyful Learning* could improve the learning process and mathematics achievement of Grade II students in learning two-digit addition and subtraction.

METHOD

Research Design

This study employed Classroom Action Research (CAR). The research was designed to improve classroom instruction through systematic cycles of planning, action, observation, and reflection. Two cycles were conducted. Each cycle consisted of instructional activities using *Joyful Learning*, classroom observation, assessment, and reflection for subsequent improvement.

Research Setting and Participants

The research was conducted at SD Negeri 24 Banda Aceh, located on Jalan Tengku Tanoh Abee No. 1, Lampineung, Kuta Alam District, Banda Aceh City. The participants were 27 Grade II students. The class was selected because preliminary observations indicated limited student participation and enthusiasm during mathematics instruction.

Research Procedure

The research began with an initial assessment to identify students' mathematics achievement before the intervention. The instructional intervention was then implemented in two cycles.

During Cycle I, the teacher prepared the lesson plan, student worksheets, learning activities, observation instruments, and achievement tests. *Joyful Learning* activities were incorporated into the lessons through interactive questioning, enjoyable classroom activities, guided exercises, and opportunities for students to participate directly in solving mathematical problems. Student participation and responses during the lessons were observed.



Following Cycle I, the researcher and teacher reviewed the learning process and assessment results. Several students still experienced difficulties in completing mathematical exercises, while classroom participation was not yet evenly distributed. These findings were used to improve the activities implemented in Cycle II.

Cycle II retained the main instructional content, namely two-digit addition and subtraction, but the learning activities were adjusted based on the difficulties identified during Cycle I. More opportunities were provided for students to participate in exercises, respond to questions, and complete learning tasks. Observation was conducted throughout the learning process, followed by an achievement test at the end of the cycle.

Data Collection

Data were obtained through classroom observation and mathematics achievement tests. Observation was used to record students' participation, attention, enthusiasm, and involvement during classroom activities. Achievement tests were administered before the intervention and at the end of each cycle. Documentation was also used to record classroom activities and students' learning results.

Data Analysis

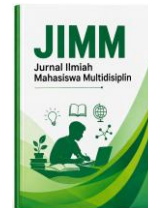
The quantitative data were analyzed descriptively by calculating the mean score and the percentage of students achieving the school's minimum mastery criterion. The percentage of mastery was calculated by dividing the number of students who achieved the required score by the total number of students and multiplying the result by 100.

The classroom observation data were interpreted descriptively by examining changes in students' attention, participation, enthusiasm, and involvement across the research cycles. The research was considered successful when classroom participation improved and the predetermined level of learning mastery was achieved.

RESULTS

Students' Initial Mathematics Achievement

The initial assessment was conducted before the implementation of *Joyful Learning*. The assessment involved 27 Grade II students and focused on two-digit addition and subtraction.

**Table 1. Initial Mathematics Achievement**

Indicator	Initial Condition
Highest score	98
Lowest score	55
Mean score	70.1
Students achieving mastery	38%
Students not achieving mastery	62%

The initial results showed that the highest score was 98 and the lowest score was 55. The class mean was 70.1, while only 38% of students achieved the school's mastery criterion. The remaining 62% had not yet reached the required level. These findings indicated that improvement was needed in both classroom participation and mathematics achievement.

Cycle I

Following the implementation of *Joyful Learning* in Cycle I, students showed more positive responses during mathematics lessons. Classroom observations indicated that students appeared more interested in the activities and were more willing to listen to explanations and answer questions. Nevertheless, several students still needed assistance when completing exercises, and participation was not yet consistent across the class.

Table 2. Mathematics Achievement in Cycle I

Indicator	Cycle I
Highest score	98
Lowest score	70
Mean score	80.8
Students achieving mastery	88%
Students not achieving mastery	12%

The results demonstrate a substantial improvement compared with the initial assessment. The mean score increased from 70.1 to 80.8. The percentage of students achieving mastery increased from 38% to 88%. The lowest score also increased from 55 to 70, whereas the highest score remained 98.

The improvement suggests that the learning activities introduced during Cycle I provided students with greater opportunities to participate in mathematics learning. However, because several students had not yet achieved mastery, the intervention was continued into Cycle II.



Cycle II

Cycle II was conducted after reviewing the results of Cycle I. The same mathematical material was retained, while the learning activities were refined to provide students with greater opportunities to participate in exercises and classroom interaction.

Observation during Cycle II indicated stronger participation than in the previous cycle. Students appeared more attentive during explanations, participated more actively in learning activities, and demonstrated greater confidence when completing mathematical tasks. The students also showed enthusiasm during exercises and were able to complete the assessment at the end of the cycle.

Table 3. Mathematics Achievement in Cycle II

Indicator	Cycle II
Highest score	100
Lowest score	75
Mean score	86.5
Students achieving mastery	100%
Students not achieving mastery	0%

The mean score increased from 80.8 in Cycle I to 86.5 in Cycle II. The highest score increased from 98 to 100, while the lowest score increased from 70 to 75. Most importantly, all 27 students achieved the mastery criterion at the end of Cycle II.

Comparison Across the Research Stages

Table 4. Comparison of Mathematics Achievement

Indicator	Initial Condition	Cycle I	Cycle II
Highest score	98	98	100
Lowest score	55	70	75
Mean score	70.1	80.8	86.5
Mastery	38%	88%	100%
Non-mastery	62%	12%	0%

The comparison demonstrates a consistent improvement across the three stages. The class mean increased by 10.7 points from the initial assessment to Cycle I and by a further 5.7 points in Cycle II. Overall, the mean score increased by 16.4 points from 70.1 to 86.5.

The percentage of students achieving mastery increased from 38% before the intervention to 88% in Cycle I and 100% in Cycle II. The lowest score increased from 55 to 75, while the highest score increased from 98 to 100. These findings indicate that the improvement



was not limited to high-performing students because the lower end of the score distribution also increased.

DISCUSSION

The findings demonstrate that the implementation of *Joyful Learning* was followed by improvements in students' mathematics achievement and classroom participation. The class mean increased from 70.1 before the intervention to 80.8 in Cycle I and 86.5 in Cycle II. At the same time, mastery increased from 38% to 88% and eventually reached 100%. The classroom observations also indicated that students became more attentive, willing to answer questions, and active in completing learning activities.

These findings are consistent with earlier research on joyful learning in elementary mathematics. Lestari (2012) reported improvements in students' motivation and mathematics achievement following the implementation of joyful learning. A previous study involving Grade V students also found increases in students' readiness, attention, willingness to complete exercises, and mathematics achievement following the use of joyful learning.

The improvement can be understood from the learning characteristics promoted by *Joyful Learning*. When students are given opportunities to interact, respond, solve problems, and participate in activities that are emotionally positive, mathematics lessons can become less intimidating. This is particularly relevant for younger students, who often benefit from concrete activities and direct participation. Recent research on joyful mathematics learning has similarly reported increased enthusiasm and active engagement when concrete materials and game-based activities are incorporated into instruction (Yuliani & Kaltsum, 2026).

The findings also support research showing that variation in teaching and learning motivation are associated with mathematics achievement. Setyaningsih and Sunarso (2020) reported a strong positive relationship between teacher teaching variation, student motivation, and mathematics achievement among elementary school students. In the present study, the introduction of more varied classroom activities was accompanied by greater student involvement and higher mathematics scores.

The results should nevertheless be interpreted carefully. This study used classroom action research involving a single class of 27 students and did not include a comparison group.



Therefore, the increase in achievement cannot be interpreted as evidence that *Joyful Learning* alone caused the improvement. Other factors, including repeated exposure to the mathematical material, teacher adjustment, students' familiarity with the assessment format, and additional practice, may also have contributed to the observed changes.

Classroom implementation also presented several practical challenges. An enjoyable classroom atmosphere can increase student movement and interaction, which requires careful classroom management. Limited learning media and instructional time may also restrict the variety of activities that can be implemented. Recent research has highlighted similar challenges, particularly differences in students' learning pace during game-based and interactive mathematics activities (Yuliani & Kaltsum, 2026).

Despite these limitations, the present findings suggest that *Joyful Learning* can be a useful instructional approach for improving participation and mathematics achievement among Grade II students. Its effectiveness depends not simply on making lessons entertaining, but on connecting enjoyable activities with clear mathematical objectives, appropriate practice, teacher guidance, and systematic assessment.

IMPLICATIONS

The findings have practical implications for elementary school teachers. *Joyful Learning* can be incorporated into mathematics lessons through simple games, interactive questioning, collaborative exercises, concrete learning materials, and activities that encourage students to respond directly to mathematical problems. The activities should remain aligned with learning objectives rather than focusing solely on entertainment.

Schools can support this approach by providing teachers with opportunities to develop interactive learning activities and by encouraging the use of simple, accessible instructional media. For future research, a more structured motivation scale combined with observation and achievement tests would provide stronger evidence concerning the relationship between students' motivation and mathematics achievement.

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