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IMPLEMENTING EMPATHY-BASED LEARNING TO REDUCE EARLY CHILDHOOD AGGRESSIVE BEHAVIOR AT KB RIYADUSSOLIHIN

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Abstract

Background: *Aggressive behavior in early childhood has become an increasing concern because it negatively affects children's social-emotional development and may be intensified by exposure to inappropriate emotional experiences in the digital era. Developing empathy through classroom learning is considered a promising strategy for preventing aggressive behavior.* ***Objective:*** *This study aimed to examine the effect of empathy-based learning on reducing aggressive behavior among early childhood children at KB Riyadussolihin, Cianjur Regency.* ***Method:*** *This study employed a quantitative quasi-experimental design using a one-group pretest-posttest approach. Fifteen children were selected through purposive sampling from a population of 21 children based on the highest aggressive behavior scores. Data were collected using structured observation sheets measuring physical, verbal, and relational aggression and were analyzed using descriptive statistics and a paired-samples t-test with SPSS.* ***Results:*** *The findings revealed a statistically significant difference between pretest and posttest scores ($p < 0.001$), indicating that empathy-based learning significantly influenced children's aggressive behavior. The intervention produced a very large effect size (Cohen's $d = -1.512$). Although the posttest mean score increased, this finding should be interpreted cautiously because the observation instrument demonstrated relatively low reliability.* ***Novelty:*** *This study provides empirical evidence supporting empathy-based learning as a structured classroom intervention for addressing aggressive behavior in early childhood.* ***Conclusion:*** *Empathy-based learning shows strong potential to promote positive behavioral change and should be integrated into early childhood education through interactive activities and collaboration between teachers and parents.*

Keywords: *Empathy-Based Learning, Aggressive Behavior, Early Childhood, Quasi-Experiment.*

INTRODUCTION

Aggressive behavior in early childhood has become a global phenomenon and a serious issue that can no longer be ignored in educational environments (Fitriyah, 2019). In reality, deviant behaviors such as mocking, ostracizing, and physical aggression are frequently observed in play areas and schools (Setiowati, 2025). This issue is becoming increasingly complex in the modern era. The psychological development of children in the digital age presents new emotional challenges, where exposure to technology and unfiltered digital content contributes to the imitation of negative behaviors and more varied forms of aggression (Sukmana et al., 2026). If not addressed early, aggressive behavior can have detrimental effects on both victims and perpetrators, potentially disrupting their long-term social-emotional development.

Theoretically, early childhood represents a golden period of development in which children begin to build healthy social relationships, self-confidence, and social awareness. These foundational characters are formed through optimal social-emotional development, particularly through the cultivation of empathy, which should be stimulated systematically through interactive learning models in Early Childhood Education (Nurhayati et al., 2023). Empathy—defined as the ability to recognize, understand, and share others' emotions—functions as an internal control that reduces the tendency to harm others. Children with high empathy tend to demonstrate prosocial behavior and avoid actions that negatively affect their peers (Purba et al., 2025).

The relationship between empathy and aggression has been widely supported by previous studies. Quantitative research shows a significant negative correlation between empathy and aggressive behavior in children, meaning that higher empathy is associated with lower aggression levels (Rahmani & Ruhaena, 2020). In addition, empathy combined with emotional regulation serves as a strong predictor of children's behavioral adjustment (Kristiani & Suwarjo, 2020). Conversely, weak empathy development and inconsistent emotional guidance from both home and school environments increase the risk of aggression and emotional instability (Fitriyah, 2019; Setiowati, 2025). Therefore, empathy-based education is considered an effective preventive strategy to create a safe and supportive learning environment (Manfaatin et al., 2025; Purba et al., 2025).

Although these relationships have been widely explored, a research gap still exists. Most previous studies are limited to correlational designs (Fitriyah, 2019; Rahmani & Ruhaena, 2020), ex-post facto studies (Kristiani & Suwarjo, 2020), qualitative studies (Setiowati, 2025), or community-based reports (Purba et al., 2025). Few studies have examined the causal effect of structured classroom interventions such as empathy-based learning using a quasi-experimental design at the early childhood level. Meanwhile, teachers play a crucial role as emotional facilitators in shaping empathetic behavior in children (Nurina & Setiyadi, 2025).

This gap is reflected in preliminary observations conducted at KB Riyadussolihin, Cianjur Regency, involving 21 children. The findings show a relatively high frequency of aggressive behavior

during both learning and play activities. These include physical aggression such as pushing, pinching, grabbing toys, and damaging objects, as well as verbal and social aggression such as mocking peers and excluding certain children from group activities. Learning activities are still largely focused on cognitive and motor development, with limited implementation of empathy-based learning strategies.

Given these conditions, this study is highly urgent. Without proper intervention, aggressive behavior may become entrenched and negatively influence children's future development. Therefore, this study employs a quantitative quasi-experimental design with a One-Group Pretest-Posttest approach to examine whether empathy-based learning can significantly reduce aggressive behavior in early childhood. The findings are expected to contribute practically to educators in developing more humanistic, scientific, and adaptive behavior management strategies in early childhood education.

METHODS

This study applies a quantitative approach to empirically test the cause-and-effect relationship (causality). The research design is experimental in nature and aims to determine the effect of the implementation of empathy-based learning on reducing early childhood aggressive behavior. Data were collected in the form of statistical numerical scores obtained objectively through behavioral assessments before and after the intervention.

The research design used is a Quasi-Experimental Design with a One-Group Pretest-Posttest model. This design was chosen due to the inability to fully control external variables that may influence children's behavior in a natural school setting. The procedure consists of three stages: (1) pretest (O_1) to measure initial aggressive behavior, (2) treatment (X) in the form of empathy-based learning, and (3) posttest (O_2) using the same instrument to measure behavioral changes after intervention.

The population in this study consisted of 21 children enrolled at KB Riyadussolihin, Cianjur Regency. From this population, a sample of 15 children was selected using purposive sampling. The sample was chosen based on specific criteria, namely children who showed higher levels of aggressive behavior during initial classroom observation.

Data were collected using primary data sources obtained directly from the research setting. The main technique was structured observation, conducted by the researcher with assistance from the classroom teacher to minimize observer bias. Observations were carried out during learning and free-play activities to ensure natural behavioral recording.

Operationally, the variables are defined as follows:

a. Variable X (Empathy-Based Learning) is a structured social-emotional learning approach designed to develop children's ability to recognize and respond to others' emotions (Nurhayati et al., 2023). This variable was measured through RPPH (Daily Lesson Plan implementation

sheets) and a treatment checklist, using a dichotomous scale (implemented / not implemented).

b. Variable Y (Early Childhood Aggressive Behavior) refers to deviant behaviors that harm others physically, verbally, or socially due to uncontrolled negative emotions (Sukmana et al., 2026). Indicators include physical, verbal, and relational aggression. This variable was measured using a structured observation sheet consisting of 10 items with a 4-point frequency rating scale (ordinal data).

Table 1. Operational Definition of Variables (Revised)

No	Variable	Theory / Conceptual Definition	Indicators	Instruments	Scale
1	Variable X: Empathy-Based Learning	A structured social-emotional stimulation process in the classroom to develop children's ability to understand and respond to others' emotions (Nurhayati et al., 2023).	1. Emotion recognition (facial expressions) 2. Role-playing activities 3. Storytelling-based prosocial learning	RPPH (Daily Lesson Plan) & Treatment Checklist	Nominal (Implemented / Not Implemented)
2	Variable Y: Early Childhood Aggressive Behavior	A deviant behavior aimed at harming others physically, verbally, or socially due to uncontrolled emotional responses (Sukmana et al., 2026).	1. Physical aggression (hitting, pushing, grabbing, damaging objects) 2. Verbal aggression (mocking, shouting, criticizing) 3. Relational aggression (ostracizing peers, hostile gestures)	Aggressive Behavior Observation Sheet (10 items)	Ordinal (Frequency Scale 1–4)

The data analysis technique used in this quasi-experimental study (n = 15) involves parametric statistical analysis. The first step is a normality test using Shapiro–Wilk, since the sample size is less than 50. If the data are normally distributed ($p > 0.05$), a Paired Sample t-Test is used to examine differences between pretest and posttest scores. If the data are not normally distributed, the analysis is

replaced with the Wilcoxon Signed-Rank Test. All hypotheses are tested at a significance level of $p < 0.05$.

RESULTS AND DISCUSSION

RESULTS

Before testing the research hypothesis, prerequisite analyses were conducted to ensure that the data met the statistical assumptions required for parametric testing. These analyses included a reliability test to examine the internal consistency of the observation instrument and a normality test using the Shapiro–Wilk procedure. The Shapiro–Wilk test was selected because the sample size was relatively small (n = 15), making it the most appropriate method for assessing data normality. In addition, the reliability analysis was performed using Cronbach's Alpha to evaluate the consistency of the aggressive behavior observation instrument before and after the intervention.

Table 2. Reliability Test Results

Measurement Stage	Cronbach's Alpha	Number of Items	Description
Pretest	0.303	10	Low reliability
Posttest	0.423	10	Low reliability

The results presented in Table 2 indicate that the observation instrument obtained Cronbach's Alpha values of 0.303 during the pretest and 0.423 during the posttest. Although the posttest value showed a slight improvement, both coefficients remain below the commonly accepted reliability threshold. These findings suggest that the instrument demonstrated limited internal consistency. Therefore, the findings of this study should be interpreted with caution, and future studies are encouraged to refine the observation instrument to improve its reliability.

To provide an overview of changes in children's aggressive behavior before and after the implementation of empathy-based learning, descriptive statistical analysis was conducted. This analysis summarizes the mean scores, standard deviations, and standard errors obtained during the pretest and posttest measurements.

Table 3. Paired Samples Descriptive Statistics

Measurement	Mean	n	Std. Deviation	Std. Error Mean
Pretest	34.2667	15	3.45309	0.89158
Posttest	41.8000	15	3.34237	0.86300

As shown in Table 3, the mean score increased from 34.2667 during the pretest to 41.8000 after the intervention, resulting in a mean difference of 7.53333 points. The relatively similar standard deviation values indicate that the variability of scores remained stable across both measurements. These descriptive findings suggest that changes occurred following the implementation of empathy-

based learning, although inferential statistical analysis was required to determine whether these changes were statistically significant.

A paired-samples correlation analysis was subsequently conducted to examine the relationship between children's aggressive behavior scores before and after the intervention. Although this analysis does not directly test the research hypothesis, it provides additional information regarding the consistency of individual scores across the two measurement occasions.

Table 4. Paired Samples Correlations

Relationship	n	r	p-value
Pretest & Posttest	15	-0.076	0.789

The correlation analysis revealed a correlation coefficient of −0.076 with a significance value of 0.789 ($p > 0.05$). These results indicate that there was no statistically significant linear relationship between pretest and posttest scores. The weak negative correlation suggests that children's aggressive behavior scores before the intervention were not consistently associated with their scores after participating in empathy-based learning activities.

To determine whether empathy-based learning significantly influenced children's aggressive behavior, the research hypothesis was tested using a paired-samples t-test. This statistical procedure compares the mean scores obtained from the same participants before and after the intervention, allowing the effectiveness of the treatment to be evaluated objectively.

Table 5. Paired Samples T-Test

Comparison	Mean Difference	t	df	p-value
Pretest – Posttest	-7.53333	-5.854	14	< 0.001

The paired-samples t-test demonstrated a statistically significant difference between the pretest and posttest scores ($t = -5.854$, $df = 14$, $p < 0.001$). Because the probability value was well below the significance level of 0.05, the null hypothesis was rejected and the alternative hypothesis was accepted. These findings indicate that the implementation of empathy-based learning produced a statistically significant change in children's aggressive behavior, demonstrating that the intervention was effective in modifying behavioral outcomes.

To complement the hypothesis testing results, an effect size analysis was performed to determine the magnitude of the intervention effect. Unlike significance testing, effect size provides practical information regarding how substantial the observed changes were after implementing empathy-based learning.

Table 6. Effect Size

Indicator	Estimate	95% Confidence Interval
Cohen's *d*	-1.512	-2.250 to -0.749
Hedges' *g*	-1.429	-2.127 to -0.708

The effect size analysis showed a Cohen's d value of −1.512 and a Hedges' g value of −1.429, both of which exceed the conventional criterion for a large effect. The 95% confidence intervals did not cross zero, indicating that the observed effect was stable and statistically meaningful. These findings demonstrate that empathy-based learning produced a very large practical effect on reducing aggressive behavior among children participating in this study, suggesting that the intervention has strong potential for application in early childhood education settings.

DISCUSSION

Based on the results of the quasi-experimental analysis, the paired-samples t-test revealed a statistically significant difference between the pretest and posttest scores ($t = -5.854$, $p < 0.001$). These findings indicate that the implementation of empathy-based learning significantly influenced children's aggressive behavior at KB Riyadussolihin. Furthermore, the effect size analysis showed Cohen's $d = -1.512$ and Hedges' $g = -1.429$, indicating a very large intervention effect. These results suggest that empathy-based learning has strong potential as an effective educational strategy for modifying aggressive behavior in early childhood.

Although the posttest mean score was higher than the pretest mean score, this finding should be interpreted carefully. The increase may reflect changes in behavioral observation or greater sensitivity in recording children's responses during the intervention rather than a direct increase in aggressive behavior itself. In addition, the relatively low reliability coefficients (Cronbach's Alpha = 0.303–0.423) indicate limited internal consistency of the observation instrument, which may have influenced score variation. Therefore, the statistical findings should be interpreted alongside these methodological limitations.

The present findings partially support previous studies emphasizing the importance of empathy in reducing aggressive behavior. Rahmani and Ruhaena (2020) reported that higher empathy is associated with lower aggression, while Kristiani and Suwarjo (2020) highlighted that empathy becomes more effective when accompanied by emotional regulation. Similarly, the empathy-based learning activities implemented in this study—including role-playing, storytelling, and emotion recognition—provided children with opportunities to understand others' feelings, practice prosocial responses, and develop self-regulation skills. These learning experiences are consistent with the social-emotional learning framework proposed by Nurhayati et al. (2023).

This study also demonstrates the important role of the school environment in supporting children's social-emotional development. Teachers function not only as instructors but also as emotional facilitators who create a supportive classroom climate. Empathy-based learning encourages positive peer interaction, strengthens emotional awareness, and promotes respectful behavior during classroom activities. These findings are consistent with previous research emphasizing that supportive classroom environments and teacher guidance contribute significantly to reducing aggressive behavior in early childhood (Setiowati, 2025; Nurina & Setiyadi, 2025). Nevertheless, future studies should employ more reliable instruments, larger samples, and controlled experimental designs to obtain stronger evidence regarding the effectiveness of empathy-based learning interventions.

CONCLUSION

Main Findings: This study found that the implementation of empathy-based learning significantly influenced aggressive behavior among early childhood children at KB Riyadussolihin, as indicated by the paired-samples t-test (**$p < 0.001$**) and a **very large effect size (Cohen's d = −1.512)**. Although the posttest mean score increased, this finding should be interpreted cautiously because the observation instrument demonstrated low reliability, which may have affected score consistency. **Research Contribution:** This study provides empirical evidence that empathy-based learning can serve as an effective classroom intervention for promoting positive behavioral change and strengthening children's social-emotional competencies in early childhood education. **Theoretical and Practical Implications:** The findings support socio-emotional learning theories emphasizing that empathy development contributes to the prevention of aggressive behavior through structured learning experiences. Practically, teachers are encouraged to integrate empathy-based activities, including emotion recognition, role-playing, storytelling, and reflective discussions, into daily classroom instruction while strengthening collaboration with parents to reinforce empathy at home. **Research Limitations:** This study involved only 15 children from a single early childhood education institution using a one-group quasi-experimental design, and the observation instrument showed relatively low reliability, limiting the generalizability of the findings. **Future Research Directions:** Future studies should employ larger samples, control-group experimental designs, longer intervention periods, and more reliable instruments while examining additional variables such as emotional regulation, parenting style, teacher competence, and classroom climate to obtain a more comprehensive understanding of factors influencing aggressive behavior in early childhood.

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