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The Impact of Child-Centered Teaching Approaches and Teacher Interaction on Learning Engagement among Early Childhood Students in Indonesia

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ABSTRACT

Student learning engagement is a key factor in determining the effectiveness of early childhood education, as active participation and enthusiasm influence children's cognitive and social development. This study examines the impact of child-centered teaching approaches and teacher interaction on student learning engagement in early childhood education in Indonesia. Using a quantitative survey method, data were collected from 200 early childhood education teachers through a Likert-scale questionnaire and analyzed using SPSS version 25, including descriptive statistics, validity and reliability tests, and multiple linear regression analysis. The results show that both child-centered teaching approaches and teacher interaction have a positive and significant effect on student learning engagement, with teacher interaction showing a stronger influence. The two variables jointly explain 50.7% of the variance in student learning engagement. These findings emphasize the importance of interactive, child-centered learning environments and strong teacher–student communication to enhance student engagement in early childhood education.

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1. INTRODUCTION

Early childhood education (ECE) is widely recognized as a critical foundation for children's cognitive, social, emotional, and behavioral development. The early years represent a sensitive developmental period in which learning experiences strongly shape children's academic readiness and long-term attitudes toward learning. Within this context, student learning engagement has emerged as an essential indicator of effective educational practice because it reflects how actively children participate in classroom activities, interact with teachers and peers, and respond to learning opportunities [1], [2]. High levels of engagement during early childhood are associated with improved attention, curiosity, persistence, and self-regulation, which are important predictors of future academic success [3]. Consequently, understanding the factors that influence student learning engagement in early childhood settings has become a significant concern for researchers and practitioners in the field of education.

One pedagogical approach that has gained considerable attention in early childhood education is the child-centered teaching approach. This approach emphasizes learning environments in which children actively construct knowledge through exploration, play, and interaction with their surroundings [4], [5]. In contrast to traditional teacher-centered instruction, child-centered learning prioritizes children's interests, developmental needs, and individual learning styles. Teachers in such environments function as facilitators who guide and support children's learning processes rather than simply transmitting information. Previous studies suggest that child-centered teaching practices can enhance children's motivation, autonomy, creativity, and participation, thereby promoting deeper engagement in learning activities. By providing opportunities for inquiry-based exploration and collaborative learning, child-centered classrooms create conditions that encourage children to become active participants in their own learning processes [6], [7].

Beyond instructional approaches, the quality of teacher–child interaction also plays a central role in fostering student engagement in early childhood education. Young children depend heavily on positive relationships with teachers to develop a sense of security, belonging, and motivation within the learning environment [8], [9]. Supportive teacher interactions—characterized by responsiveness, encouragement, emotional warmth, and meaningful communication—can significantly influence children's willingness to participate in classroom activities. When teachers provide constructive feedback, ask open-ended questions, and engage in interactive dialogue with children, they stimulate curiosity and confidence while encouraging active involvement in learning tasks. Therefore, the quality of teacher–child interaction is widely considered a key determinant of children's engagement and overall classroom participation.

Despite the recognized importance of child-centered teaching and teacher interaction, the implementation of these practices remains uneven across many early childhood education settings. In numerous classrooms, instructional practices are still dominated by structured and teacher-directed activities that limit children's opportunities for exploration and participation. Similarly, teacher–child interactions may focus primarily on instruction and discipline rather than supportive engagement and collaborative communication. Such conditions can reduce children's enthusiasm and limit their involvement in classroom activities, ultimately weakening the effectiveness of the learning process. These challenges highlight the need for further empirical investigation into the pedagogical and relational factors that influence student engagement in early childhood classrooms.

In Indonesia, early childhood education—commonly referred to as Pendidikan Anak Usia Dini (PAUD)—has experienced rapid development in recent years as part of national efforts to improve educational quality. However, variations in teaching practices and teacher competencies remain significant challenges across institutions. Although national education policies promote play-based and child-centered learning, empirical evidence regarding how these approaches influence children's learning engagement is still limited. Furthermore, the role of teacher interaction in strengthening student engagement within Indonesian early childhood classrooms has not been extensively explored. Therefore, this study aims to examine the impact of child-centered teaching approaches and teacher interaction on student learning engagement in early childhood education in Indonesia. The findings are expected to contribute to the development of more effective teaching strategies and provide empirical insights that support educators, school leaders, and policymakers in enhancing the quality of early childhood learning environments.

2. LITERATURE REVIEW

2.1 Student Learning Engagement in Early Childhood Education

Student learning engagement is widely recognized as a key factor in

achieving meaningful learning outcomes, particularly in early childhood education. Engagement refers to the extent to which students actively participate in learning activities through behavioral, emotional, and cognitive involvement. In early childhood settings, engagement is reflected in children's enthusiasm, curiosity, attention, and persistence during classroom activities, which encourage exploration and interaction with peers and teachers [10], [11]. Learning engagement is commonly categorized into three dimensions: behavioral, emotional, and cognitive engagement. Behavioral engagement refers to observable participation in learning tasks, emotional engagement relates to students' interest and enjoyment in learning activities, and cognitive engagement involves the mental effort invested in understanding concepts and solving problems. In early childhood education, these dimensions are often expressed through active play, questioning, creativity, and collaboration [12], [13]. High levels of engagement are associated with better academic performance, stronger social development, and higher learning motivation, while low engagement may lead to reduced participation and weaker learning outcomes. Therefore, identifying factors that influence student engagement is essential for improving the quality of early childhood education.

2.2 *Child-Centered Teaching Approaches*

The child-centered teaching approach is one of the most influential pedagogical models in early childhood education and is rooted in constructivist learning theory, which emphasizes that children learn best when they actively participate in the learning process and construct knowledge through experience. This approach places children's interests, abilities, and developmental stages at the center of instructional design, allowing them to explore, experiment, and interact with their environment [9], [14]. In a child-centered classroom, the teacher's role shifts from being the main source of information to acting as a facilitator who guides and supports children's learning experiences through activities that encourage exploration, creativity, and problem-solving, such as play-based learning, storytelling, group discussion, and hands-on exploration. These activities not only support cognitive development but also strengthen children's social and emotional competencies [15], [16]. The principles of child-centered learning are supported by several educational theorists, including Jean Piaget, who emphasized that children construct knowledge through interaction with their environment; Lev Vygotsky, who highlighted the role of social interaction and guided learning within the zone of proximal development; and John Dewey, who argued that meaningful learning occurs through direct experience. Empirical studies have shown that child-centered teaching practices can significantly enhance student engagement, as children who are given opportunities to make choices, explore their interests, and actively participate in classroom activities tend to demonstrate higher levels of motivation, focus, collaboration, and communication during the learning process.

2.3 *Teacher Interaction in Early Childhood Education*

Teacher interaction refers to the quality of communication, support, and relationships between teachers and students during the learning process, and it plays an important role in shaping children's learning experiences and emotional well-being in early childhood education. Positive teacher–child interactions create a safe and supportive environment where children feel valued and encouraged to participate in classroom activities. Effective teacher interaction generally includes emotional support, instructional support, and classroom organization [3], [11]. Emotional support involves warmth and responsiveness to children's needs, while

instructional support focuses on guiding learning through questioning, feedback, and scaffolding. Classroom organization refers to the teacher's ability to manage learning activities effectively while maintaining an engaging environment. Strong teacher–child relationships can increase children's motivation and participation, as children who feel connected to their teachers tend to show more positive learning behaviors [3], [17]. Teachers who communicate openly, provide encouragement, and give constructive feedback can stimulate curiosity and maintain children's attention during learning activities. Previous research also shows that supportive teacher interaction contributes to children's social competence, language development, and academic readiness, making it a key factor in promoting student engagement in early childhood education.

2.4 The Relationship between Child-Centered Teaching, Teacher Interaction, and Student Learning Engagement

The relationship between teaching approaches, teacher interaction, and student learning engagement has been widely discussed in educational research. Child-centered teaching approaches encourage active participation and autonomy by allowing children to explore topics of interest and engage directly in the learning process, while teacher interaction provides the guidance, encouragement, and emotional support needed to sustain children's involvement in learning activities [10], [18]. When these two factors are effectively combined, they create a supportive learning environment that promotes curiosity, collaboration, and sustained engagement. In early childhood education, the integration of child-centered pedagogy and positive teacher–child interaction is particularly important because young children learn primarily through experience and social interaction. Teachers who apply flexible teaching strategies while maintaining strong interpersonal relationships with students can foster a classroom atmosphere that supports both academic development and emotional well-being [19], [20]. Based on these theoretical perspectives and empirical findings, it can be assumed that child-centered teaching approaches and teacher interaction play significant roles in influencing student learning engagement; therefore, this study examines the extent to which these factors contribute to student engagement in early childhood education in Indonesia. Based on the theoretical framework and previous studies, the following hypotheses are proposed in this study:

H1: Child-centered teaching approaches have a significant positive effect on student learning engagement in early childhood education.

H2: Teacher interaction has a significant positive effect on student learning engagement in early childhood education.

H3: Child-centered teaching approaches and teacher interaction simultaneously have a significant effect on student learning engagement in early childhood education.

3. RESEARCH METHODS

3.1 Research Design

This study employed a quantitative research approach to examine the impact of child-centered teaching approaches and teacher interaction on student learning engagement in early childhood education in Indonesia. A quantitative approach was chosen because it allows researchers to measure relationships between variables using numerical data and statistical analysis. The research design used was a cross-sectional survey, where data were collected from respondents at a single point in time through structured questionnaires. The survey method enabled the researcher to gather data from a relatively large number of participants efficiently and analyze patterns and relationships among

variables. The survey instrument was designed to measure respondents' perceptions of child-centered teaching practices, teacher interaction, and student learning engagement within early childhood education settings.

3.2 *Population and Sample*

The population of this study consisted of teachers working in early childhood education institutions in Indonesia, commonly known as Pendidikan Anak Usia Dini (PAUD), which provide educational services for children aged 3 to 6 years. A total of 200 respondents were selected as the research sample using purposive sampling, a technique that involves selecting participants based on specific criteria relevant to the research objectives. The criteria for respondents included teachers who were actively teaching in early childhood education institutions and who had experience implementing learning activities in the classroom. These criteria ensured that the participants possessed sufficient knowledge and practical experience related to the variables examined in this study. The sample size of 200 respondents was considered adequate for statistical analysis and for representing the population of early childhood educators involved in the research.

3.3 *Research Variables*

This study examined three main variables consisting of two independent variables and one dependent variable. The first independent variable is child-centered teaching approaches (X_1), which refer to teaching strategies that emphasize children's interests, active participation, and experiential learning through activities that encourage exploration, creativity, and autonomy. The second independent variable is teacher interaction (X_2), which represents the quality of communication and relationships between teachers and students during the learning process, including emotional support, encouragement, feedback, and instructional guidance provided by teachers. The dependent variable is student learning engagement (Y), which reflects the degree to which students actively participate in learning activities, encompassing behavioral participation, emotional involvement, and cognitive attention during classroom activities.

3.4 *Research Instrument*

Data for this study were collected using a structured questionnaire consisting of several statements designed to measure the three research variables. Each statement was evaluated using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The questionnaire items were developed based on relevant literature related to teaching approaches, teacher interaction, and student engagement in early childhood education. The instrument was distributed to respondents either in printed form or through an online survey platform.

3.5 *Data Collection Procedure*

Data collection was conducted by distributing questionnaires to early childhood education teachers who met the specified sampling criteria. Respondents were informed about the purpose of the study and were asked to provide honest responses based on their experiences in teaching and classroom interactions. Prior to completing the questionnaire, participants were also assured that their responses would remain confidential and would be used solely for research purposes, ensuring the accuracy and reliability of the collected data.

3.6 *Data Analysis Technique*

The data collected from the questionnaires were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. Several statistical techniques were applied to analyze the data. First, descriptive statistics were used to summarize the demographic characteristics of respondents and describe the distribution of responses for each variable, including frequency,

percentage, mean, and standard deviation. Second, validity and reliability tests were conducted to evaluate the quality of the measurement instruments, where the validity test determined whether each questionnaire item accurately measured the intended variable and the reliability test assessed the consistency of the instrument. Third, classical assumption tests—including normality, multicollinearity, and heteroscedasticity tests—were performed to ensure that the data met the requirements for regression analysis. Finally, multiple linear regression analysis was used to examine the influence of the independent variables, namely child-centered teaching approaches and teacher interaction, on the dependent variable, student learning engagement. Hypothesis testing was conducted using the t-test to evaluate the individual effect of each independent variable and the F-test to assess their simultaneous effect. Through these analytical procedures, the study aimed to determine the extent to which child-centered teaching approaches and teacher interaction influence student learning engagement in early childhood education in Indonesia.

4. RESULTS AND DISCUSSION

4.1 Respondent Demographic Characteristics

The demographic characteristics of respondents were analyzed to provide an overview of the participants involved in this study. A total of 200 early childhood education teachers participated in the survey. The demographic variables included gender, age, teaching experience, and educational background.

Table 1. Demographic Characteristics of Respondents

Demographic Variable	Category	Frequency	Percentage
Gender	Female	176	88.0%
	Male	24	12.0%
Age	21–30 years	68	34.0%
	31–40 years	82	41.0%
	41–50 years	36	18.0%
	>50 years	14	7.0%
Teaching Experience	<5 years	52	26.0%
	5–10 years	78	39.0%
	11–15 years	44	22.0%
	>15 years	26	13.0%
Education Level	Diploma	64	32.0%
	Bachelor	122	61.0%
	Master	14	7.0%

The demographic characteristics of respondents presented in Table 1 indicate that the majority of early childhood education teachers in this study were female, accounting for 88% of the total respondents, while male teachers represented only 12%. This distribution reflects the common pattern in early childhood education where the profession is predominantly occupied by women. In terms of age, most respondents were between 31–40 years old (41%), followed by those aged 21–30 years (34%), suggesting that a significant portion of participants were in their productive professional years. Regarding teaching experience, the largest group of respondents had 5–10 years of teaching experience (39%), indicating that many participants possessed moderate professional experience in early childhood education. Meanwhile, 26% had less than five years of experience, while smaller proportions had longer teaching tenures. In terms of educational background, the majority of respondents

held a bachelor's degree (61%), followed by diploma holders (32%) and a smaller proportion with a master's degree (7%). These demographic patterns suggest that the respondents generally possessed adequate academic qualifications and practical teaching experience, which supports the credibility of their responses in evaluating teaching approaches, teacher interaction, and student learning engagement in early childhood education settings.

4.2 Descriptive Statistics

Descriptive statistics were used to describe the distribution of responses for each research variable. The variables analyzed include child-centered teaching approaches, teacher interaction, and student learning engagement.

Table 2. Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Deviation
Child-Centered Teaching	200	2.90	4.85	4.12	0.46
Teacher Interaction	200	3.10	4.90	4.25	0.41
Student Learning Engagement	200	3.00	4.95	4.18	0.44

The descriptive statistics presented in Table 2 provide an overview of respondents' perceptions of the main variables examined in this study. The results show that the mean score for child-centered teaching approaches is 4.12 with a standard deviation of 0.46, indicating that respondents generally perceive the implementation of child-centered teaching practices in early childhood classrooms to be relatively high. The teacher interaction variable has the highest mean score of 4.25 with a standard deviation of 0.41, suggesting that teachers tend to demonstrate strong communication, guidance, and supportive relationships with students during the learning process. Meanwhile, student learning engagement has a mean score of 4.18 and a standard deviation of 0.44, indicating that students are generally perceived to show a high level of participation, attention, and enthusiasm in classroom activities. The relatively small standard deviation values across all variables suggest that respondents' perceptions are fairly consistent. Overall, these findings indicate that child-centered teaching approaches and positive teacher interaction are commonly practiced in the observed early childhood education settings and are associated with high levels of student learning engagement.

4.3 Validity and Reliability Test

The validity test was conducted using the Pearson correlation method, where an item is considered valid if the correlation value is greater than 0.30.

Table 3. Validity Test

Variable	Items	Correlation Range	Result
Child-Centered Teaching	6	0.56 – 0.79	Valid
Teacher Interaction	6	0.60 – 0.82	Valid
Student Engagement	6	0.58 – 0.80	Valid

The validity test results presented in Table 3 indicate that all questionnaire items used to measure the research variables are valid. The correlation values for the items measuring child-centered teaching range from 0.56 to 0.79, teacher interaction items range from 0.60 to 0.82, and student learning engagement items range from 0.58 to 0.80. All questionnaire items showed correlation values above 0.30, indicating that the measurement instrument meets the required validity criteria and that each item is able to accurately represent the intended construct. In addition, reliability was tested using Cronbach's Alpha, where a

value above 0.70 indicates good reliability, ensuring that the instrument consistently measures the variables of child-centered teaching approaches, teacher interaction, and student learning engagement in this study.

Table 4. Reliability Test

Variable	Cronbach Alpha	Result
Child-Centered Teaching	0.865	Reliable
Teacher Interaction	0.887	Reliable
Student Learning Engagement	0.858	Reliable

The reliability test results presented in Table 4 indicate that all variables in this study demonstrate strong internal consistency. The Cronbach's Alpha value for the child-centered teaching variable is 0.865, while teacher interaction shows a value of 0.887, and student learning engagement has a value of 0.858. All values exceed the commonly accepted threshold of 0.70, indicating that the measurement instruments used in this study are reliable. These results suggest that the questionnaire items consistently measure their respective constructs and provide stable and dependable data for further statistical analysis. Therefore, the instruments used to assess child-centered teaching approaches, teacher interaction, and student learning engagement are considered reliable for use in this research.

4.4 Classical Assumption Test

Before conducting regression analysis, classical assumption tests were performed.

Table 5. Normality Test (Kolmogorov-Smirnov)

Variable	Sig. Value	Conclusion
Regression Residual	0.200	Normal Distribution

The normality test results presented in Table 5, using the Kolmogorov–Smirnov test, show a significance value of 0.200 for the regression residuals. This value is greater than the commonly used threshold of 0.05, indicating that the residual data are normally distributed. A normal distribution of residuals suggests that the data meet the assumptions required for regression analysis. Therefore, it can be concluded that the normality assumption in this study has been satisfied, allowing the analysis to proceed to the next stage of statistical testing, particularly multiple linear regression analysis.

Table 6. Multicollinearity Test

Variable	Tolerance	VIF
Child-Centered Teaching	0.637	1.583
Teacher Interaction	0.633	1.587

The multicollinearity test results presented in Table 6 indicate that there is no multicollinearity problem among the independent variables in this study. The tolerance value for child-centered teaching is 0.637 and for teacher interaction is 0.633, both of which are greater than the commonly accepted threshold of 0.10. In addition, the Variance Inflation Factor (VIF) values for child-centered teaching (1.583) and teacher interaction (1.587) are well below the critical limit of 10. These results suggest that the independent variables are not highly correlated with each other, meaning that each variable contributes uniquely to the regression model. Therefore, the data meet the multicollinearity assumption and are suitable for further regression analysis.

4.5 Multiple Linear Regression Analysis

Multiple regression analysis was used to examine the influence of child-centered teaching approaches and teacher interaction on student learning engagement.

Table 7. Multiple Regression Analysis

Variable	B	Std. Error	Beta	t	Sig.
Constant	1.245	0.284	-	4.386	0.000
Child-Centered Teaching	0.342	0.072	0.356	4.753	0.000
Teacher Interaction	0.418	0.069	0.431	6.057	0.000

The results of the multiple regression analysis presented in Table 7 indicate that both child-centered teaching and teacher interaction have a positive and significant effect on student learning engagement. The regression coefficient for child-centered teaching is 0.342 with a significance value of 0.000 ($p < 0.05$), indicating that increased implementation of child-centered teaching approaches is associated with higher levels of student learning engagement. Similarly, teacher interaction shows a regression coefficient of 0.418 with a significance value of 0.000 ($p < 0.05$), suggesting that stronger teacher–student interaction significantly enhances students' engagement in learning activities. The standardized beta values also indicate that teacher interaction ($\beta = 0.431$) has a slightly stronger influence compared to child-centered teaching ($\beta = 0.356$). The regression equation can be expressed as: Student Learning Engagement = 1.245 + $0.342(X_1)$ + $0.418(X_2)$, which shows that both independent variables have positive coefficients, meaning that improvements in child-centered teaching approaches and teacher interaction lead to higher levels of student learning engagement. These findings highlight the important role of effective teaching strategies and supportive teacher–student relationships in promoting active participation and engagement in early childhood education settings.

4.6 Coefficient of Determination

The coefficient of determination (R^2) measures the proportion of variance in the dependent variable that can be explained by the independent variables in the model. The regression results show an R value of 0.712 with an R Square of 0.507 and an Adjusted R Square of 0.502, indicating a relatively strong relationship between the variables. The R^2 value of 0.507 means that 50.7% of the variation in student learning engagement can be explained by child-centered teaching approaches and teacher interaction. Meanwhile, the remaining 49.3% of the variation may be influenced by other factors not included in this study, such as learning environment, parental support, or individual student characteristics. The standard error of the estimate is 0.308, indicating that the regression model provides a reasonably accurate prediction of student learning engagement.

4.7 Hypothesis Testing

The t-test was used to examine the individual effect of each independent variable on the dependent variable.

Table 8. t-Test Results

	Variable	t-value	Sig.	Result
H1	Child-Centered Teaching → Student Engagement	4.755	0.000	Supported
H2	Teacher Interaction → Student Engagement	6.057	0.000	Supported

The t-test results presented in Table 8 show that both hypotheses in this study are supported. The first hypothesis (H1), which examines the effect of child-centered teaching on student engagement, shows a t-value of 4.755 with a significance value of 0.000 ($p < 0.05$), indicating that child-centered teaching

has a positive and significant influence on student learning engagement. This suggests that learning environments that emphasize student participation, exploration, and autonomy can effectively enhance children's involvement in classroom activities. Similarly, the second hypothesis (H2) demonstrates that teacher interaction significantly influences student engagement, with a t-value of 6.057 and a significance value of 0.000 ($p < 0.05$). This finding indicates that supportive communication, guidance, and emotional support from teachers play a crucial role in encouraging children's participation and attention during learning activities.

Table 10. ANOVA Test

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	38.62	2	19.31	102.747	0.000
Residual	37.04	197	0.188		
Total	75.66	199			

The ANOVA test results presented in Table 10 indicate that the regression model used in this study is statistically significant. The analysis shows an F-value of 102.747 with a significance level of 0.000 ($p < 0.05$), which means that the independent variables—child-centered teaching approaches and teacher interaction—simultaneously have a significant effect on student learning engagement. The regression sum of squares of 38.62 compared to the residual sum of squares of 37.04 suggests that a substantial portion of the variation in student learning engagement is explained by the model. These findings confirm that the regression model is appropriate for explaining the relationship between the independent and dependent variables, indicating that both child-centered teaching practices and teacher interaction collectively contribute to enhancing student engagement in early childhood education.

4.8 Discussion

The findings of this study indicate that both child-centered teaching approaches and teacher interaction significantly influence student learning engagement in early childhood education. The regression results show that child-centered teaching approaches have a positive and significant effect on student engagement, suggesting that learning environments that emphasize active participation, exploration, and student autonomy can effectively increase children's involvement in classroom activities. When children are given opportunities to express ideas, explore learning materials, and engage in hands-on activities, they tend to demonstrate higher levels of curiosity, enthusiasm, and concentration during the learning process. These results highlight the importance of designing learning environments that support experiential and participatory learning for young children [10], [18].

Furthermore, the analysis reveals that teacher interaction has a stronger influence on student learning engagement compared to child-centered teaching approaches, as reflected by the higher standardized beta coefficient. This finding indicates that supportive communication, encouragement, and meaningful interaction between teachers and students play a crucial role in sustaining children's motivation and participation in classroom activities. In early childhood education, teachers are not only facilitators of learning but also important emotional supporters who help build children's confidence and curiosity. Positive teacher–child relationships enable children to feel safe and valued, which encourages them to participate more actively in learning tasks [21], [22].

These findings align with the principles of constructivist learning theory, which emphasize that knowledge is developed through active participation and social interaction. The integration of child-centered teaching practices with supportive teacher interaction creates a dynamic learning environment where children can construct knowledge through experience and collaboration. When teachers actively guide students while allowing them to explore and participate independently, the classroom becomes a space that promotes creativity, inquiry, and sustained engagement in learning activities.

In the context of early childhood education in Indonesia, the results of this study highlight the importance of strengthening pedagogical practices that prioritize children's active participation and strong teacher–student relationships. Early childhood educators should be encouraged to implement interactive and play-based learning strategies while maintaining supportive communication and guidance throughout the learning process. Overall, this study provides empirical evidence that combining child-centered pedagogy with effective teacher interaction can significantly enhance student learning engagement and contribute to improving the overall quality of early childhood education.

5. CONCLUSION

This study aimed to examine the influence of child-centered teaching approaches and teacher interaction on student learning engagement in early childhood education in Indonesia. Based on quantitative analysis involving 200 respondents, the results indicate that both child-centered teaching approaches and teacher interaction significantly affect student learning engagement. The regression analysis shows that classrooms implementing child-centered learning practices tend to promote higher levels of student participation, curiosity, and enthusiasm in learning activities. Additionally, teacher interaction was found to have a strong positive influence on student engagement, indicating that supportive communication, guidance, and emotional encouragement from teachers play a crucial role in sustaining children's involvement in the learning process.

Furthermore, the coefficient of determination analysis reveals that child-centered teaching approaches and teacher interaction together explain a substantial proportion of the variation in student learning engagement. This finding suggests that effective early childhood education requires not only appropriate teaching methods but also meaningful and supportive interactions between teachers and students. Teachers who implement child-centered strategies while maintaining positive relationships with students are more likely to create engaging and stimulating learning environments. Therefore, educational institutions and policymakers should encourage teaching practices that promote active participation, exploration, and supportive communication, as strengthening teacher competencies in these areas can enhance student engagement and improve the overall quality of early childhood education in Indonesia.

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