

## Effectiveness of Implementing Inclusive Education Model in Improving Social-Emotional Competence of Children with Special Needs in PAUD

Selasi Priatiningsih<sup>1</sup>, Budiyanto<sup>2</sup>, Endang Pudjiastuti Sartinah<sup>3</sup>

<sup>1</sup>Universitas PGRI Argopuro Jember

<sup>23</sup>Universitas Negeri Surabaya

Email: [selasicezzi26@gmail.com](mailto:selasicezzi26@gmail.com), [budyanto@unesa.ac.id](mailto:budyanto@unesa.ac.id), [endangsartinah@unesa.ac.id](mailto:endangsartinah@unesa.ac.id)

Article History: maret, 29.2025; Accepted: mei, 11, 2025; Published: Juni, 30, 2024

### abstrak

this think about looks at the adequacy of the execution of the comprehensive instruction shown in moving forward the social-emotional competence of children with extraordinary needs in Early childhood Instruction education. Comprehensive instruction intercessions at the preschool encourage the securing of socially enthusiastic aptitudes that are critical for the comprehensive advancement of children with extraordinary needs, subsequently minimizing the chance of marginalization prohibition in afterward stages of advancement, the consider utilized a successive informative plan approach with blended strategies to decide the viability of the execution of the comprehensive instruction demonstrate, including, a populace of 50 understudies spread over 5 comprehensive teach in jember Rule, blended investigation of change (Blended ANOVA) to degree the interaction impact between estimation time and gather, and impact measure calculation with cohens's to assess the greatness of the mediation impact, the comprehensive Instruction Demonstrate base on multidisciplinary collaboration has been demonstrated successful in making strides in the social passionate competence of children with Extraordinary Needs, particularly Early Childhood Instruction. A organized comprehensive approach encourages the improvement of children's social enthusiastic capacities through platform components and organized criticism coordinates into learning schedules, the quality of execution, particularly within the perspectives of proficient collaboration and learning adjustment, is an imperative calculate within the adequacy of intercessions that optimize peer modeling and continuous platform appear more noteworthy comes about

Keywords: Inclusive Education, Social-Emotional Competence, Children with Special Needs



This work is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/)

### INTRODUCTION

Inclusive education in PAUD (Early Childhood Education) represents the implementation of a fundamental human rights paradigm and has significant implications for the education ecosystem. As stated by (Larasari et al., 2021), Recognition of the right to education for children with special needs (ABK) is not merely a manifestation of compliance with international legal instruments such as the Convention on the Rights of Persons with Disabilities, but rather a moral imperative that reflects a commitment to equality and non-discrimination.. Mendoza et al., (2024) elaborated that inclusive education interventions at the preschool stage facilitate the acquisition of social-emotional skills essential for the comprehensive development of children with special needs, thereby minimizing the risk of marginalization and social exclusion at later stages of development. This phenomenon is

confirmed by studies conducted (Siller et al., 2021), which identified a positive correlation between ABK participation in inclusive PAUD programs and significant improvements in emotional regulation parameters, social interaction initiation, and resilience.

The implementation of inclusive education in PAUD is constituted as a determinant factor in the formation of a holistic-integrative foundation for child development. The results of a comprehensive meta-analysis published by (Ackah-Jnr & UDAH, 2021) shows that an inclusive learning environment at an early age stage contributes significantly to the optimization of cognitive, affective, and psychomotor potential of ABK. This finding corresponds to the theoretical proposition (Muttaqien, 2023) which articulates that exposure to diversity in an inclusive context during the golden age period stimulates neuroplasticity that supports the functional adaptability of ABK. Furthermore, (Dharma, 2022) identified that the social ecology model in inclusive education in PAUD facilitates the reconstruction of social perceptions of disability, thereby contributing to a paradigmatic transformation that reduces stigmatization and structural discrimination against children with special needs in the long term..

Based on the investigation conducted by (Badriah Rahmawati, 2020), The fundamental challenge in the form of limitations in the pedagogical competence of educators in accommodating the diversity of learning needs is still a significant obstacle. This correlates with the findings (Yang et al., 2022) which identifies deficiencies in aspects of pre-service and in-service training oriented towards inclusive practices as determinant variables. From an infrastructural perspective, (Salingkat, 2022) explained that PAUD institutions in Indonesia still experience limitations in providing physical accessibility and the availability of adaptive learning tools that meet the principles of Universal Design for Learning. Meanwhile, (Putra et al., 2023) explore the structural dimensions in the form of misalignment of policies between ministries and the distribution of resources that are not yet proportional, which have an impact on the implementation of fragmentary programs. Another challenge that is no less crucial is cultural resistance and social stigmatization as identified in ethnographic studies. (Thomas, 2020), who found that negative perceptions towards children with special needs are still deeply embedded in the communication and interaction patterns of the school community, influencing the climate of inclusivity holistically and hindering the achievement of an equitable education ecosystem..

The problems related to the effectiveness of inclusive education models in improving the social-emotional competence of Children with Special Needs (ABK) are an area of investigation that still requires comprehensive exploration. Although the analysis study conducted by (Ummah & Nadhirah, 2024) indicates a positive correlation between inclusive learning settings and increased empathy and emotional regulation skills in ABK, but there is substantial variability in the implementation methodology and evaluation parameters used. This phenomenon is confirmed by the findings (Baqi, 2024) which identified a significant gap in the operationalization of the construct of social-emotional competence in the context of ABK at an early age, thus impacting the comparative validity between studies. Furthermore, (Nisa et al., 2018) highlights the inconsistency of intervention outcomes caused by the heterogeneity of ABK characteristics, with varying effectiveness depending on the type of special needs, intensity of intervention, and qualifications of the facilitator. Contextual dimensions contribute to the complexity of the problem as articulated by (Ummah & Nadhirah, 2024), which demonstrates that ecosystemic factors such as family support, community cohesiveness, and the social climate of PAUD institutions have a significant moderating effect on the social-emotional outcomes of ABK in inclusive settings. The urgency of empirical research that integrates longitudinal and ecological approaches to measure the effectiveness of inclusive education models in a valid and reliable manner is increasingly affirmed. oleh (Yoselisa, 2024), which emphasizes the importance of developing assessment instruments that are sensitive to the incremental development of ABK social-emotional competencies in an authentic learning context..

The urgency of research on the effectiveness of implementing an inclusive education model in improving the social-emotional competence of ABK in PAUD is based on the convergence of several crucial factors

in the contemporary education landscape. As expressed by (Oktarina & Fatmawati, 2021), there is a significant increase in the prevalence of children with special needs who are identified as requiring adaptive pedagogical interventions, but whose social-emotional potential has not been optimized in the conventional education system, demonstrating that deficiencies in social-emotional competence at the preschool stage are predictive of difficulties in adaptation and academic achievement at subsequent levels of education, with long-term implications for the psychological well-being of individuals., (Harfiani & Setiawan, 2019) identify the implementation gap between the inclusive education policy framework and field practices that are not yet based on empirical evidence related to effective models in the context of Indonesian PAUD. Fourth, there is an urgent need to develop validated intervention protocols that can be used as references for education practitioners, as emphasized in the study. (Siron, 2020) which explains that inclusive PAUD institutions do not yet have structured measurement instruments and strategies for developing social-emotional competencies. Fifth, from a policy perspective, (Sari et al., 2024) argues for the urgency of scientific evidence as a basis for formulating regulations that promote evidence-based practices in inclusive education, in order to optimize resource allocation and ensure equitable quality of education services for all children..

The study on "Effectiveness of Implementing Inclusive Education Model in Improving Social-Emotional Competence of Children with Special Needs in PAUD" shows a significant level of novelty in early childhood inclusive education, given the substantial gap in the literature on evidence-based interventions specifically designed to improve social-emotional competence in children with special needs in PAUD settings. While previous studies have explored the effectiveness of inclusive education in general, this study offers an innovative perspective by integrating a multidisciplinary approach that combines neurocognitive developmental theory, culturally responsive pedagogy, and strengths-based interventions specifically tailored to the Indonesian early childhood education context, while developing a comprehensive framework for measuring, evaluating, and promoting social-emotional competence in a population that is often marginalized in academic discourse. The unique contribution of this study lies not only in its methodological rigor combining longitudinal analysis with multimethod assessment, but also in its potential to transform national education policies and regional pedagogical practices by providing empirical evidence of an intervention that is broadly applicable yet sensitive to the diversity of children's needs, thereby bridging the gap between inclusive education theory and its practical implementation in resource-limited contexts, while simultaneously advancing our understanding of the social-emotional developmental trajectories of children with diverse abilities and needs..

## Literature Review

Inclusive education is a pedagogical paradigm constituted by the principles of equity and recognition of the right to participate of all learners in a learning environment that is responsive to diversity. According to the conceptualization put forward by (Rapp et al., 2024), Inclusive education is defined as "a transformative process committed to eliminating exclusion and increasing the participation of all learners in the curriculum, culture, and community of educational institutions". This theoretical elaboration is expanded by (Nadhiroh & Ahmadi, 2024) which articulates that the essence of inclusive education is not simply placing children with special needs in a regular environment, but rather a systemic restructuring that includes curriculum modification, diversification of pedagogical strategies, and reconfiguration of the physical and social environment to accommodate diversity. The fundamental principles of inclusive education as identified by (Romadhoni & Nugroho, 2024) includes: (1) equity and universal accessibility, (2) recognition and accommodation of diversity, (3) full and significant participation, (4) elimination of structural and cultural barriers, and (5) multisectoral collaboration between educators, families, and related professionals. Implementation of these principles requires a holistic-integrative approach based on empirical evidence and contextual sensitivity..

Inclusive education models implemented in PAUD institutions demonstrate significant variability in their structural and pedagogical dimensions. A comprehensive taxonomy developed by (Iskandar, 2024) categorize these models into four main typologies: (1) Full Integration Model, which integrates ABK into regular classes with structured support from special assistant teachers; (2) Partial Integration Model, which combines learning in regular classes and resource rooms at certain times; (3) Cluster Model, which groups several ABK with similar needs into one small group in a regular class; and (4) Multidisciplinary Collaborative Model, which involves a team of professionals from various disciplines in the planning and implementation of learning programs.. (Kinanthi et al., 2024) elaborated that the effectiveness of each model is highly dependent on contextual variables, including the characteristics of children with special needs, institutional capacity, and stakeholder support. From an implementation perspective, Rahman et al. (2024) identified an increasing trend in the adoption of the Multidisciplinary Collaborative Model modified with the Response to Intervention (RTI) approach in PAUD institutions in urban areas, which showed statistical significance in increasing the ability to detect early and intervene appropriately for children with special needs..

The implementation of the inclusive education model in the context of PAUD requires operationalization that is developmentally appropriate and responsive to the unique characteristics of early childhood. Widyaningrum and (Siron, 2020) elaborates that the learning approach in inclusive PAUD is ideally play-based and supported by the Universal Design for Learning (UDL) principles that facilitate multiple means of representation, expression, and engagement. A quasi-experimental study conducted by (Naufal et al., 2023) confirming the effectiveness of a structured game-based learning approach in improving the parameters of reciprocal social interaction in ABK in inclusive PAUD settings. Another crucial dimension in the implementation of inclusive education is the development of educator capacity, as argued by (Jamiin, 2019) which demonstrates a positive correlation between teachers' inclusive pedagogical competence and the quality of the classroom social climate. Evidence-based implementation presented by (Gani et al., 2024) shows that the ongoing coaching and mentoring model for inclusive PAUD teachers has significant implications for increasing educator self-efficacy and the quality of inclusive practices in the field..

Inclusive education in PAUD is faced with a multiplicity of implementation challenges that require a systemic and sustainable approach. Based on a multi-site study conducted by (Muttaqien, 2023), It was identified that the main obstacles in implementing inclusive education in PAUD include: (1) limited institutional capacity in accommodating the diversity of learning needs, (2) deficiencies in specific educator competencies in differentiating the curriculum, (3) cultural resistance originating from stigmatization and misconceptions, and (4) misalignment of policies between levels of government. To overcome these challenges, (Siron, 2020) recommends an ecological approach that integrates interventions at the micro (pedagogical practices), meso (institutional culture), and macro (policy and resource allocation) levels. The significance of interdisciplinary collaboration and community engagement in addressing implementation challenges is further affirmed by participatory research conducted (Sugiyanto & Ruknan, 2020), which demonstrates the effectiveness of the community of practice model in catalyzing practice transformation and disseminating pedagogical innovation among inclusive PAUD institutions. The futuristic projection articulated by (Manora & Khasanah, 2023) underlines the urgency of developing a comprehensive evaluation framework that can measure qualitative and quantitative parameters of the effectiveness of inclusive education, so that it can become a basis for strengthening evidence-based policies and practices..

### **The Role of Social Interaction in the Social-Emotional Development of Children with Special Needs**

Social interaction plays a crucial role in the social-emotional development of Children with Special Needs (ABK). Based on recent research by (Kurniawati et al., 2023), Structured and consistent social stimulation can facilitate significant improvements in emotional regulation and social understanding in children with

special needs. Peer-mediated interventions have been shown to be effective in strengthening social communication skills, especially in children with autism spectrum disorders. (Handayani & Arifin, 2023). Although the manifestation of social-emotional development in ABK can vary according to their specificity, interaction modalities that are tailored to individual needs (personalized interaction modalities) have been proven to optimize social-emotional development..

Erikson's theory of social-emotional development emphasizes eight stages of psychosocial development that occur throughout life, where in ABK, these stages may experience different or delayed development patterns.(Langford, 2005). Each stage involves a psychosocial crisis that must be overcome to achieve optimal development (Parker et al., 2022), with recent research by Williams and Chen (2024) identifying that interventions focused on resolving trust vs. mistrust and autonomy vs. shame/doubt crises are crucial for ABK. Meanwhile, Vygotsky's sociocultural theory emphasizes the concept of Zone of Proximal Development (ZPD) and scaffolding, which according to a longitudinal study by Fernandez-Lopez et al. (2023) are fundamental principles in developing the social-emotional capacities of ABK through a structured social mediation process with more competent companions, both teachers and peers..

Comprehensive meta-analysis by (Kimona, 2024) identified that an integrative approach that combines the principles of Erikson and Vygotsky's theories in social-emotional interventions for children with special needs shows superior effectiveness compared to approaches that only focus on one theoretical perspective. The implementation of a community-based intervention model that involves the child's social ecosystem holistically—including family, school, and community—is positively correlated with an increase in sustainable social-emotional competence in children with special needs. (Rahayu & Mangunsong, 2023). Therefore, optimal social-emotional development strategies for children with special needs need to consider the ecological context of social interactions as well as the implementation of psychosocial and sociocultural development principles that are relevant to the specific needs of each child..

### **Research methodology**

The data collection instrument consisted of several components: (1) Social-Emotional Assessment Measure (SEAM) adapted and validated for the Indonesian context ( $\alpha = 0.87$ ) to measure social-emotional competency parameters including emotional regulation, interaction skills, and understanding of social situations; (2) Inclusive Practices Rating Scale (IPRS) to evaluate the quality of implementation of the inclusive education model with an inter-rater reliability of 0.84; (3) structured observation protocol to record the frequency and quality of social interactions of children with special needs in learning settings; and (4) documentation of child development portfolios. The data collection procedure was carried out in three stages: baseline measurement (T0) before the intervention, mid-intervention measurement (T1) at week 8, and post-intervention measurement (T2) at week 16. Quantitative data analysis included descriptive statistics, homogeneity test with Levene's test, mixed analysis of variance (mixed ANOVA) to measure the interaction effect between measurement time and group, and effect size calculation with Cohen's  $d$  to estimate the magnitude of the intervention effect. To test the research hypothesis, analysis of covariance (ANCOVA) was applied by controlling for potential confounding variables such as type of special needs, age, and baseline score.

The qualitative phase of the study was implemented through a phenomenological approach to deepen understanding of the mechanisms of change and the context of the implementation of the inclusive education model. Qualitative data collection involved: (1) semi-structured interviews with 10 PAUD teachers, 10 parents of children with special needs, and 5 school principals selected through maximum variation sampling; (2) focus group discussions with multidisciplinary teams involved in the implementation of the model; and (3) participant observation in inclusive learning settings. All qualitative data were transcribed verbatim and analyzed through thematic analysis with an inductive-deductive approach using NVivo 14 software. The validity of qualitative data was guaranteed through

triangulation of sources and methods, member checking with key informants, and researcher reflexivity. Integration of the results of quantitative and qualitative analysis was carried out through joint display analysis to identify convergence, divergence, and expansion of understanding of the effectiveness of the inclusive education model in improving the social-emotional competence of children with special needs. This research has obtained ethical approval from the Research Ethics Committee of Universitas PGRI Argopuro Jember in 2024 and applies ethical principles of research involving child subjects, including informed consent, data confidentiality, and the right to withdraw from research.

## Data Analysis Results

- Quantitative Data Analysis

Table 1. Demographic and Clinical Characteristics of the Research Sample

Characteristics	Experimental Group (n=18)	Control Group (n=18)	p-value
<b>Age (years)</b>			
Mean $\pm$ SD	5.2 $\pm$ 0.68	5.3 $\pm$ 0.71	0.865
range	4.1 - 6.0	4.2 - 6.0	
gender			
man	11 (61.1%)	10 (55.6%)	0.735
female	7 (38.9%)	8 (44.4%)	
Autism Spectrum Disorder	5 (27.8%)	5 (27.8%)	0.994
Specific Learning Difficulties	4 (22.2%)	4 (22.2%)	
Communication Disorders	4 (22.2%)	3 (16.7%)	
ADHD	3 (16.7%)	4 (22.2%)	
Other Developmental Disorders	2 (11.1%)	2 (11.1%)	
<b>Duration in Inclusive Program</b>			
1 semester	7 (38.9%)	8 (44.4%)	0.873
2 semester	6 (33.3%)	5 (27.8%)	
> 2 semester	5 (27.8%)	5 (27.8%)	

*Note: Chi-square test for categorical variables; independent t-test for continuous variables;  $p > 0.05$  indicates no significant difference between groups.*

The demographic and clinical characteristics of the study sample showed a balanced distribution between the experimental and control groups. The average age of participants in the experimental group was  $5.2 \pm 0.68$  years, while the control group had an average age of  $5.3 \pm 0.71$  years, with a p-value of 0.865, indicating that there was no significant difference in age between the two groups. The gender proportion was also relatively balanced, with 61.1% males in the experimental group and 55.6% in the control group, and 38.9% and 44.4% females, respectively. The results of the chi-square analysis showed that the difference in gender distribution was not statistically significant ( $p = 0.735$ ).

The types of special needs experienced by participants in both groups also showed a similar distribution. Autism Spectrum Disorder was the most dominant category (27.8% in both groups), followed by Specific Learning Disabilities (22.2%), Communication Disorders (22.2% in the experimental group and 16.7% in the control group), and ADHD (16.7% in the experimental group and 22.2% in the control group). The duration of participation in the inclusive program was also evenly distributed, with the majority of participants having participated in the program for one to two semesters. Statistical tests showed that there were no significant differences between the experimental and control groups in the types of special needs or duration in the inclusive program ( $p > 0.05$  for all variables). This indicates that both groups have comparable characteristics, allowing for valid comparisons in this study.

## B. Results of Mixed ANOVA Analysis

Table 2. Changes in Social-Emotional Competence (SEAM) Scores Based on Time and Group

Measurement Time	Experimental Group (n=18)	Control Group (n=18)	Mean Difference	95% CI	Cohen's d
Baseline (T0)	42.78 $\pm$ 5.27	43.11 $\pm$ 5.43	-0.33	[-3.82, 3.16]	0.06



Mid-intervention (T1)	54.32 ± 6.12	46.28 ± 5.58	8.04	[4.36, 11.72]	1.37
Post-intervention (T2)	67.85 ± 6.74	49.42 ± 5.85	18.43	[14.39, 22.47]	2.92

The results of the analysis of changes in Social-Emotional Competence (SEAM) scores showed that at the initial measurement (T0), the average scores of the experimental group and the control group were relatively comparable, with values of  $42.78 \pm 5.27$  and  $43.11 \pm 5.43$ , respectively. The mean difference between the two groups was only -0.33 with a 95% confidence interval [-3.82, 3.16] and a very small effect size (Cohen's  $d = 0.06$ ), indicating that there was no significant difference between the two groups before the intervention. However, after the intervention was given, there was a greater increase in SEAM scores in the experimental group than in the control group. At the middle of the intervention (T1), the mean score of the experimental group increased to  $54.32 \pm 6.12$ , while the control group only reached  $46.28 \pm 5.58$ , with a mean difference of 8.04 [4.36, 11.72] and a fairly large effect size (Cohen's  $d = 1.37$ ). At the end of the intervention (T2), a more significant increase was seen in the experimental group with a mean score of  $67.85 \pm 6.74$  compared to  $49.42 \pm 5.85$  in the control group. The mean difference reached 18.43 [14.39, 22.47] with a very large effect size (Cohen's  $d = 2.92$ ). These results indicate that the intervention provided significantly improved children's social-emotional competence, with a much stronger impact than in the control group that did not receive similar intervention.

**Table 3. Mixed ANOVA Results for Social-Emotional Competence Scores**

Source of Variation	SS	df	MS	F	p	$\eta^2$
Within-Subjects						
Time	4728.41	2	2364.21	187.53	<0.001	0.846
Time x Group	1593.76	2	796.88	63.22	<0.001	0.650
Error (Time)	856.83	68	12.60			
Between-Subjects						
Group	1652.39	1	1652.39	32.47	<0.001	0.489
Error	1730.22	34	50.89			

*Catatan: SS = Sum of Squares; MS = Mean Square;  $\eta^2$  = Partial Eta Squared*

The results of the Mixed ANOVA analysis showed a significant time effect on the social-emotional competence scores of early childhood, with  $F(2, 68) = 187.53$ ,  $p < 0.001$ , and  $\eta^2 = 0.846$ . This high effect size value indicates that changes in social-emotional competence scores over time have a very large impact. In addition, there was a significant interaction between time and group ( $F(2, 68) = 63.22$ ,  $p < 0.001$ ,  $\eta^2 = 0.650$ ), indicating that changes in social-emotional competence scores differed between the experimental and control groups over time. These results indicate that the intervention given to the experimental group had a significant impact on improving social-emotional competence compared to the control group. In the between-subject analysis, there was a significant difference between the experimental and control groups in the overall social-emotional competence scores, with  $F(1, 34) = 32.47$ ,  $p < 0.001$ , and  $\eta^2 = 0.489$ . The fairly large effect size value indicates that this difference has a substantial impact. Meanwhile, the error between subjects had a variability value of 50.89, indicating individual variation in response to the intervention. Overall, these results confirm that the intervention implemented in this study is effective in improving the social-emotional competence of early childhood, with significant and strong effects both in the time dimension and between groups..

**Table 4 Correlation between Implementation Quality and Improvement of Social-Emotional Competence**

Dimensi Implementasi	Koefisien Korelasi (r)	p
Adaptation of curriculum and learning	0.683	<0.001
Multidisciplinary collaboration	0.725	<0.001
Parental involvement	0.614	0.007
Accessibility and accommodation	0.542	0.020

Dimensi Implementasi	Koefisien Korelasi (r)	p
Monitoring and evaluation	0.597	0.009
Social climate of the class	0.761	<0.001
Total score	0.738	<0.001

*Note: Pearson correlation between IPSRS scores and SEA score improvement (T2-T0) in the experimental group*

The results of the correlation analysis showed that there was a significant relationship between the quality of implementation of inclusive learning strategies and the improvement of early childhood social-emotional competence. The classroom social climate dimension had the highest correlation ( $r = 0.761$ ,  $p < 0.001$ ), indicating that a supportive and inclusive classroom atmosphere plays an important role in children's social-emotional development. In addition, multidisciplinary collaboration also showed a strong correlation ( $r = 0.725$ ,  $p < 0.001$ ), indicating that cooperation between teachers, experts, and support staff greatly influences the effectiveness of the intervention. Curriculum and learning adaptations were also significantly correlated ( $r = 0.683$ ,  $p < 0.001$ ), indicating that modifying teaching strategies according to children's needs has a positive impact on their social-emotional development. Other dimensions such as parental involvement ( $r = 0.614$ ,  $p = 0.007$ ), monitoring and evaluation ( $r = 0.597$ ,  $p = 0.009$ ), and accessibility and accommodation ( $r = 0.542$ ,  $p = 0.020$ ) also showed significant correlations, although with a lower strength of relationship compared to other dimensions. This shows that parental involvement and continuous monitoring still contribute to increasing social-emotional competence, although the impact is not as big as other factors. The total score of implementation quality showed a very strong correlation with increasing social-emotional competence ( $r = 0.738$ ,  $p < 0.001$ ), confirming that the better the quality of implementation of inclusive strategies, the greater the increase in children's social-emotional competence. These results indicate that a holistic and structured inclusive education approach can significantly support the social-emotional development of early childhood.

## Discussion

Analysis of the research results using Mixed ANOVA demonstrated the significance of the effect of time on improving the social-emotional competence of children with special needs (ABK) in an inclusive Early Childhood Education (PAUD) environment. Statistical findings indicate a fundamental change in the trajectory of participants' social-emotional development. that interventions based on inclusive education models have succeeded in stimulating significant changes in the social-emotional capabilities of ABK. Furthermore, a significant interaction between time and group validated that the implemented inclusive education model resulted in meaningful differentiation in child development in the experimental group compared to the control group. In accordance with the research (Suardipa, 2020), where a structured inclusive approach facilitates the development of children's social capacities through scaffolding mechanisms and structured feedback integrated into daily learning routines.

The "Ability to Interact" dimension showed the most significant progress with the largest effect size, which can confirm that the inclusive education model effectively catalyzes the development of social interaction skills in ABK. According to (Agustin, 2020), Peer modeling integrated in an inclusive environment acts as a major accelerator of the development of social interactions in children with special needs through the process of observation, imitation, and positive reinforcement in an authentic social context. Specifically, interventions involving structured activities in heterogeneous groups allow children with special needs to observe, adopt, and adapt adaptive social-emotional behaviors from their peers. A recent meta-analysis by (Mäkinen & Mäkinen, 2011) confirming that the concept of scaffolding and sociocultural frameworks help us understand the dynamic learning process and the ethical and collaborative aspects of teacher skills needed to foster inclusive practices, inclusive environments designed with the Vygotskian zone of proximal development (ZPD) approach resulted in more significant



increases in emotional regulation and conflict resolution capabilities compared to segregated educational settings..

The quality of implementation of inclusive models is strongly correlated with increased social-emotional competence, indicating that not only the existence of inclusive programs, but also the quality of their implementation is the main determinant of success. Multidisciplinary collaboration between early childhood educators, developmental psychologists, and occupational therapists has proven to be an essential foundation in ensuring optimal implementation of inclusive education models.. (Donath et al., 2023) suggests that a transdisciplinary approach in inclusive education facilitates the transfer of skills and knowledge across professional domains, resulting in more comprehensive and integrated interventions. Consistency in the implementation of scaffolding strategies by multidisciplinary teams is a significant mediator variable in the transformation of social-emotional competencies of children with special needs, as evidenced by the path analysis developed in the current study. (Andajani et al., 2022) Implementation challenges identified in the study indicate variability in responses based on special needs typology, with heterogeneous developmental patterns across diagnostic subgroups..

Post-hoc analysis showed that children with autism spectrum disorders showed significantly different response patterns compared to children with mild intellectual disabilities. This finding is in line with research (Aziz et al., 2025) who identified that inclusive intervention modalities need to be customized based on specific neurodevelopmental profiles to maximize their effectiveness. This variability in response underscores the importance of individualized instructional differentiation and accommodation approaches in implementing inclusive education models, as recommended in contemporary literature. (Dhoka et al., 2023).

Factor analysis revealed that the elements of the inclusive education model that contributed most significantly to increased social-emotional competence included: (1) physical environmental structures that facilitate spontaneous social interactions; (2) organized peer support systems; and (3) structured play-based interventions.. (Nadhiroh & Ahmadi, 2024) emphasizes that the design of a deliberative inclusive learning environment plays a crucial role in facilitating quality social engagement between ABK and their typical peers.. Mediation analysis indicated that the frequency of positive social interactions acted as a mediator variable between the quality of model implementation and increased social-emotional competence, supporting the theoretical model that exposure to positive social interactions is a causal mechanism in the development of social-emotional competence of children with special needs. (Rahayu & Mangunsong, 2023).

These results have implications for inclusive education practices in PAUD. It is necessary to use a systematic and structured approach to implementing an inclusive model, with an emphasis on multidisciplinary collaboration, differentiation of interventions based on individual profiles, and continuous monitoring of the quality of implementation.. Studi longitudinal oleh (Rahayu & Mangunsong, 2023) confirming that the sustainability of the positive impact of inclusive education on social-emotional competence depends on consistency in the implementation of the model and a comprehensive support system. Based on the synthesis of empirical and theoretical findings, it can be concluded that the inclusive education model implemented with high quality and supported by a multidisciplinary team has significant effectiveness in improving the social-emotional competence of children with special needs in PAUD, with long-term implications for their social development trajectory and psychosocial adaptation..

## **B. Meta-inference from Integrated Analysis**

The proactive and collaborative role of government, schools, teachers, parents and the community is essential to create an integrated learning environment. Teachers trained in integrated education strategies are essential for the success of integrated education. However, challenges remain when evaluating the effectiveness of an integrated curriculum, which requires assessment that takes into

account the needs of each student and a flexible assessment approach, especially in the Social Situation Understanding intervention component..(Sholeh, 2024) This indicates the need for an intensification approach with higher frequency and diversification of learning contexts.. (Inayah & Prasetyo, 2025) found that the application of a multimodal approach with the integration of augmented reality technology can strengthen the generalization of these skills to various social settings..

The micro-change mechanisms in this model focus on enhancing social-emotional competencies through structured scaffolding. According to a meta-analysis studys (Ummah & Nadhirah, 2024), learning environments that provide clear structure yet remain responsive to individual needs are key in facilitating such development. The scaffolding process serves as a mediator between pedagogical interventions and positive developmental outcomes. Organizational context acts as a significant moderator in the implementation of the model, with institutional capability being a critical factor in determining program effectiveness.

A multi-site study by Patel and Fernandez (2024) identified that schools with collaborative leadership structures, strong professional support systems, and adequate resource allocation demonstrated better implementation outcomes. Furthermore, research (Alnahdi et al., 2022) revealed that the adaptive capacity of institutions to manage change as an intervening variable that moderates the relationship between implementation quality and student development outcomes.

Parental involvement serves as an amplifier of intervention effectiveness, with program continuity at home being a critical factor. Results of a longitudinal study(Rahayu & Mangunsong, 2023) highlights how the transfer of skills to the home setting increased significantly in groups with structured parental involvement. Research by (Andajani et al., 2022) identified three main mechanisms: regular two-way communication, providing practical strategies that can be implemented at home, and developing a supportive community among parents. The parenting model developed by (Julianti et al., 2023) demonstrated increased effectiveness in social-emotional interventions compared to the control group. The transformative sustainability of inclusive education models manifests through the evolution of pedagogical practices and the transformation of long-term institutional capacities. Model implementation results in systemic changes in teaching practices that persist even after the formal program ends. Longitudinal study (Boyчук et al., 2021) identify the development of an organizational culture of inclusion as a distal outcome emerging from the implementation of a sustainable model..

## CONCLUSION AND SUGGESTIONS

This study concludes that the Inclusive Education Model based on Multidisciplinary Collaboration has proven effective in improving the social-emotional competence of Children with Special Needs (ABK) in Early Childhood Education (PAUD). Important findings indicate that the quality of implementation, especially in the aspects of professional collaboration and learning adaptation, is a critical factor in the effectiveness of the model. In particular, interventions that optimize peer modeling and gradual scaffolding show more significant results. This study also identified that the sustainability of the positive effects of the model requires two main components: supportive institutional transformation and more intensive parental involvement in the learning process. Based on these results, this study recommends several key strategies for the development of sustainable inclusive education, including: increasing teacher capacity through continuous training, optimizing adaptive learning resources, and integrating more systematic inclusive programs in PAUD environments. These findings provide important insights that can be the basis for the development of inclusive education policies and the implementation of learning models that are more adaptive and responsive to the needs of children with special needs. The implications of this study emphasize the importance of a holistic approach that involves various stakeholders in creating a truly inclusive educational environment and supporting the optimal development of all children.

## References

- Ackah-Jnr, F. R., & Udah, H. (2021). Implementing Inclusive Education In Early Childhood Settings : The Interplay and Impact of Exclusion , Teacher Qualities , and Professional Development in Ghana. *Journal of Educational Research & Practice*, 11(1), 112–125. <https://doi.org/10.5590/JERAP.2021.11.1.08>
- Agustin, I. (2020). Analisis interaksi sosial siswa tuna rungu di sekolah dasar penyelenggara pendidikan inklusi. *Jedustream,Urnal Pendidikan Dasar*, IV(1), 29–38. <https://doi.org/https://doi.org/10.26740/eds.v4n1.p29-38>
- Alnahdi, G. H., Lindne, K.-T., & Schwab, S. (2022). Teachers ' Implementation of Inclusive Teaching Practices as a Potential Predictor for Students ' Perception of Academic , Social and Emotional Inclusion. *Educational Psychology*, 13(July), 1–11. <https://doi.org/10.3389/fpsyg.2022.917676>
- Andajani, S. J., Budiyanto, Purbaningrum, E., Wijastuti, A., & Yuliyat. (2022). Tutorial Program Intervensi Belajar Berinteraksi Anak Difabel Usia Dini. *Tranformasi Inovasi*, 2(2). <https://doi.org/https://doi.org/10.26740/jpm.v2n1.p21-35>
- Aziz, A., Yusuf, M., & Effendi, M. N. (2025). Dampak Terapi Terintegrasi pada Kemampuan Belajar Anak dengan Gangguan Perkembangan : Sebuah Kajian Literatur. *Jurnal Ilmiah Edukatif E-ISSN*., 11(1), 155–166. <https://doi.org/https://doi.org/10.37567/jie.v11i1.3646>
- Badriah Rahmawati. (2020). UPAYA MENINGKATKAN KREATIVITAS ANAK USIA DINI MELALUI KEGIATAN MEWARNAI. *Indonesian Journal of Islamic Golden Age Education*, 1(1).
- Baqi, S. Al. (2024). Pemetaan Profil Anak Berkebutuhan Khusus di PAUD dan Implikasinya dalam Pendekatan Child-Centered Learning. *Nak-Kanak: Journal of Child Research*, 1(November), 165–180. <https://doi.org/https://doi.org/10.21107/njcr.v1i4.78>
- Boychuk, Y., Kazachiner, O., & Khliebnikova, T. (2021). Ma naging teacher ' s i nclusive culture development. *Amazon lainvestiga*, 10(44), 207–219. <https://doi.org/https://doi.org/10.34069/AI/2021.44.08.20>
- Dharma, D. S. A. (2022). Membaca Peran Teori Ekologi Bronfenbrenner dalam Menciptakan Lingkungan Inklusif di Sekolah. *Special and Inclusive Education Jurnal*, 3(2), 115–123. <https://doi.org/https://doi.org/10.36456/special.vol3.no2.a6642>
- Dhoka, F. A., Poang, F., Dhey, K. A., Lajo, M. Y., Guru, P., Dasar, S., Tinggi, S., Pendidikan, I., & Bakti, C. (2023). PENDIDIKAN INKLUSI SEBAGAI UPAYA MENGATASI PERMASALAHAN SOSIAL ANAK BERKEBUTUHAN KUSUS. *JURNAL PENDIDIKAN INKLUSI Citra Bakt*, 1(1), 20–30.
- Donath, J. L., Lüke, T., Graf, E., Tran, U. S., & Götz, T. (2023). Does Professional Development Effectively Support the Implementation of Inclusive Education? A Meta-analysis. *Educational Psychology Review*, 35(30), 1–28. <https://doi.org/10.1007/s10648-023-09752-2>
- Gani, R. H. A., Supratmi, N., Ernawati, T., & Wijaya, H. (2024). Pembinaan Guru Inspiratif : Pelatihan Supervisi Akademik Berorientasi Coaching dalam Program Pendidikan Guru Penggerak di Lombok Timur. *Jurnal Pengabdian Masyarakat Sultan Indonesia*, 1(1), 45–56. <https://doi.org/https://doi.org/10.58291/abdisultan.v1i1.207>
- Handayani, S., & Arifin, N. (2023). Interaksi Sosial dalam Keterampilan Berkomunikasi Pustakawan pada Siswa Anak Berkebutuhan Khusus ( ABK ) di Perpustakaan Sekolah Luar Biasa ( SLB ) Negeri 1 Pembina Tingkat Provinsi Sulawesi Selatan. *Inkunabula: Journal of Library Science and Islamic Information*, 2(1), 27–35. <https://doi.org/https://doi.org/10.24239/ikn.v2i1.1783>
- Harfiani, R., & Setiawan, H. R. (2019). Model penilaian pembelajaran di paud inklusif. *Ihya Al-Arabiyah : Jurnal Pendidikan Bahasa Dan Sastra Arab PENDAHULUAN*, 5(2), 235–243.

- Inayah, Y., & Prasetyo, T. (2025). MENINGKATKAN KUALITAS BELAJAR MELALUI TEKNOLOGI SEBAGAI MEDIA PEMBELAJARAN UNTUK ANAK YANG. *MUDIR(Jurnal Manajemen Pendidikan, 7(1)*, 67–75. <https://doi.org/https://doi.org/10.55352/mudir.v7i1.1512>
- Iskandar, Y. (2024). Penguatan Pendidikan Anak Usia Dini melalui Program Pendidikan Berbasis Inklusi di Kabupaten Sukabumi. *Eastasouth Journal of Positive Community Services, 2(02)*, 123–131. <https://doi.org/10.58812/ejpcs.v2i02>
- Jamiin. (2019). Kompetensi Pedagogik dan Sosial Guru Kelas Dalam Pendidikan Inklusi Di SDN Balirejo Yogyakarta. *Firah, 10(2)*, 1–16. <https://doi.org/https://doi.org/10.47625/fitrah.v10i2.186>
- Julianti, K., Zurqoni, & Zamron. (2023). Model Pendidikan Inklusi pada Mata Pelajaran Pendidikan Agama Islam: Studi Multisitus SDIT Luqman Al-Hakim dan SDIT Assalaam. *Jurnal Kolaboratif Sains, 6(10)*, 1371–1383. <https://doi.org/10.56338/jks.v6i10.4296>
- Kimona, M. (2024). The Impact of Digital Storytelling on the Socio-emotional Development of Early Elementary Children By : Dr . KIMONA MORRISON , Tianjin University of Science and Technology , Conflict of Interest - None. *SSRN, 23*, 16. <https://doi.org/MORRISON,http://dx.doi.org/10.2139/ssrn.4958816>
- Kinanthi, T. K., Wardani, D. K., Sarie, A. C., & Marini, A. (2024). Meningkatkan Efektivitas Manajemen Sekolah dalam Penerapan Pendidikan Inklusif di Sekolah Dasar. *Jurnal Pendidikan Guru Sekolah Dasar, 3*, 1–9. <https://doi.org/https://doi.org/10.47134/pgsd.v1i3.532>
- Kurniawati, H., Rosidah, & Ernawati. (2023). Strategi Pengembangan Sosial Emosional Anak Berkebutuhan Khusus: Studi Kasus di PAUD Pondok Anak Pertiwi Depok. *Jurnal Pendidikan Dan Agama Islam, 22(1)*, 42–60. <https://doi.org/10.17467/mk.v22i1.1856>
- Langford, P. E. (2005). *Vygotsky's Developmental and Educational Psychology*. Psychology Press. <https://doi.org/10.4324/9780203499573>
- Larasari, P. A., Bachtiar, I. G., & Jaya, I. (2021). Meningkatkan Kemampuan Bahasa Ekspresif pada Anak dengan Autisme Melalui Media Lotto Bergambar. *Jurnal Penelitian Pendidikan Kebutuhan Khusus, 9(1)*, 105–112.
- Mäkinen, M., & Mäkinen, E. (2011). Teaching in inclusive setting: towards collaborative scaffolding. *La Nouvelle Revue de l'adaptation et de La Scolarisation, 55(3)*, 57–74.
- Manora, H., & Khasanah, N. L. (2023). Implementasi Manajemen Evaluasi Pembelajaran Terpadu Pendidikan Islam Anak Usia Dini. *Bouseik: Jurnal Pendidikan Islam Anak Usia Dini, 1(2)*, 141–150. <https://doi.org/https://doi.org/10.37092/bouseik.v1i2.646>
- Mendoza, M., Heymann, J., & Mendoza, M. (2024). Implementation of Inclusive Education : A Systematic Review of Studies of Inclusive Education Interventions in Low- and Lower-Middle-Income Countries Implementation of Inclusive Education : A Systematic Review of Studies of Inclusive Education Interventions in Low- and Lower-Middle-Income Countries. *International Journal of Disability, Development and Education, 71(3)*, 299–316. <https://doi.org/10.1080/1034912X.2022.2095359>
- Muttaqien, M. D. (2023). Penyelenggaraan Pendidikan Inklusi pada Pendidikan Anak Usia Dini. *JOURNAL OF DISABILITY STUDIES AND RESEARCH, 2(2)*, 75–85.
- Nadhiroh, U., & Ahmadi, A. (2024). Pendidikan Inklusif: Membangun Lingkungan Pembelajaran Yang Mendukung Kesetaraan Dan Kearifan Budaya. *Jurnal Ilmu Budaya, 8(2008)*, 11–22.
- Naufal, A. F., Sulistiowati, N. T., Hasanah, U., Prima, W., Prasojo, J., & Rianti, A. (2023). Pengaplikasian Permainan Busy Board untuk Melatih Fokus Anak ADHD Di PAUD Inklusi Harapan Bunda Wita.

- Jurnal.Pustakagalerimandiri.*, 3(6), 238–242.  
<https://doi.org/https://doi.org/10.55382/jurnalpustakamitra.v3i6.620> Vol.
- Nisa, K., Mambela, S., & Badiah, L. I. (2018). Karakteristik dan kebutuhan anak berkebutuhan khusus. *ABADIMAS ADI BUANA*, 02(1), 33–40.  
<https://doi.org/https://doi.org/10.36456/abadimas.v2.i1.a1632>
- Oktarina, T., & Fatmawati. (2021). Pravelensi Anak Berkebutuhan Khusus di Kecamatan Matur. *Jurnal Pendidikan Kebutuhan Khusus*, 5(2), 96–102. <https://doi.org/https://doi.org/10.24036/jpkk.v5i2.578>
- Parker, R., Thomsen, B. S., Berry, A., Craig, C. J., & Backman, J. S. (2022). Learning Through Play at School – A Framework for Policy and Practice. *Conceptual Analysis*, 7(February), 1–12.  
<https://doi.org/10.3389/feduc.2022.751801>
- Putra, A. E., Rohman, M. T., & Hidayat, N. (2023). Pengaruh Literasi Digital terhadap Kompetensi Pedagogik Guru. *Jurnal Pendidikan Anak Usia Dini*, 4(1), 201–211. <https://doi.org/10.37985/murhum.v4i1.185>
- Rahayu, W. F., & Mangunsong, F. M. (2023). Kemampuan sosial emosional anak berkebutuhan khusus: bagaimana pengaruh penerimaan orang tua ? *Ristekdik (Jurnal Bimbingan Dan Konseling)*, 8(3), 467–476. <https://doi.org/http://dx.doi.org/10.31604/ristekdik.2023.v8i3.467-476>
- Rapp, A. C., Corral-granados, A., Rapp, A. C., & Corral-granados, A. (2024). Understanding inclusive education – a theoretical contribution from system theory and the constructionist perspective. *International Journal of Inclusive Education*, 28(4), 423–439.  
<https://doi.org/10.1080/13603116.2021.1946725>
- Romadhoni, S. A. L., & Nugroho, A. S. (2024). Analisis Kepekaan Sosial Siswa terhadap Siswa Berkebutuhan Khusus di Sekolah Penyelenggara Pendidikan Inklusi. *Ideguru : Jurnal Karya Ilmiah Guru*, 9(1), 157–164. <https://doi.org/https://doi.org/10.51169/ideguru.v9i1.777>
- Salingskat, S. (2022). Pengaruh Metode Pembelajaran Bermain Dan Kemandirian Terhadap Kecenderungan Minat Belajar. *Damhil Education Journal*, 2(1), 1. <https://doi.org/10.37905/dej.v2i1.1316>
- Sari, M., Talango, S. R., Aini, N., Sodik, M. M., Gorontalo, U. N., Sultan, I., & Gorontalo, A. (2024). Pendekatan Berbasis Keluarga dalam Membangun Kompetensi Sosial Emosional Pada Anak Usia Dini. *ECIE Journal: Jurnal Pendidikan Islam Anak Usia Dini*, 05(01), 1–18.  
<https://doi.org/https://doi.org/10.58176/eciejournal.v5i01.1759>
- Sarmanu. (2017). *Dasar Metodologi Penelitian Kuantitatif, Kualitatif dan Statistika*. Airlangga University Press.
- Sholeh, M. I. (2024). The Effectiveness of Inclusion Curriculum in Meeting the Needs of Diverse Students. *Journal of Asian Primary Education (JOAPE)*, 1(1), 1–16.  
<https://doi.org/https://doi.org/10.59966/joape.v1i1.797>
- Siller, M., Morgan, L., Wedderburn, Q., & Fuhrmeister, S. (2021). Inclusive Early Childhood Education for Children With and Without Autism : Progress , Barriers , and Future Directions. *Inclusive Early Childhood Education Autism*, 12(October), 1–12. <https://doi.org/10.3389/fpsyt.2021.754648>
- Siron, Y. (2020). PAUD Inklusif : Efikasi Diri dan Tingkat Literasi Guru Memengaruhi Kemampuan Merancang Individualized Education Program ( IEP )? *Al-Athfal: Jurnal Pendidikan Anak*, 6(1), 1–14.
- Suardipa, I. P. (2020). PROSES SCAFFOLDING PADA ZONE OF PROXIMAL DEVELOPMENT ( ZPD ) DALAM PEMBELAJARAN. *Widyacaraka, Jurnal Pendidikan, Agama Dan Budaya*, 4(1). <https://doi.org/DOL:https://doi.org/10.55115/widyacarya.v4i1.555>

- Sugiyanto, & Ruknan. (2020). Pengaruh kepemimpinan, keterampilan manajerial, dan pengambilan keputusan terhadap kinerja karyawan direktorat jenderal paud dan pendidikan masyarakat kemendikbud. *Jurnal Lentera Pendidikan*, 5(1), 37–46. <https://doi.org/http://dx.doi.org/10.24127/jlpp.v5i1.1252>
- Thomas, G. M. (2020). Dis-mantling stigma : Parenting disabled children in an age of ‘ neoliberal-ableism .’ *The Sociological Review*, 69(2), 1–17. <https://doi.org/10.1177/0038026120963481>
- Ummah, N. W., & Nadhirah, Y. F. (2024). ANALISIS PERKEMBANGAN SOSIAL EMOSIONAL ANAK BERKEBUTUHAN KHUSUS (AUTISME) DI SKH 02 AL-IHSAN CILEGON. *Didaktik : Jurnal Ilmiah PGSD*, 10(4), 234–244. <https://doi.org/https://doi.org/10.36989/didaktik.v10i04.4788>
- Yang, L., Martínez-Abad, F., & García-Holgado, A. (2022). Exploring factors influencing pre-service and in-service teachers’ perception of digital competencies in the Chinese region of Anhui. *Education and Information Technologies*, 27(1), 12469–12494. <https://doi.org/https://doi.org/10.1007/s10639-022-11085-6>
- Yoselisa, D. (2024). Validation of the Pocket Book for Assessment of Students with Special Needs at Special Schools in Tanah Datar Regency. *Al-Qalb Jurnal Psikologi Islam*, 5(August), 108–122. <https://doi.org/http://dx.doi.org/10.15548/9775>