

# Multisensory Character Education: Enhancing Social–Emotional Development in Early Childhood through Experiential Learning

Ika Anggraheni<sup>1</sup>, Devi Wahyu Ertanti<sup>2</sup>

<sup>1</sup> Universitas Islam Malang, Indonesia; [ika.anggraheni@unisma.ac.id](mailto:ika.anggraheni@unisma.ac.id)

<sup>2</sup> Universitas Islam Malang, Indonesia; [devi.wahyu@unisma.ac.id](mailto:devi.wahyu@unisma.ac.id)

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## ARTICLE INFO

### Keywords:

multisensory learning;  
social-emotional development;  
early childhood education;  
experiential learning

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### Article history:

Received 2025-10-08

Revised 2025-11-09

Accepted 2025-12-31

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## ABSTRACT

Character education in early childhood is often dominated by verbal instruction, which may limit children's ability to internalize moral values through lived experience. This study explores the potential of multisensory character education—an approach that engages visual, auditory, kinaesthetic, and tactile senses—to enhance social–emotional development among young learners in Indonesia. A quantitative descriptive survey was conducted with 20 early childhood teachers at RA Al Jihad, Malang. A 30-item Likert-scale questionnaire measured three constructs: multisensory character education, children's social development, and emotional development. Data were analyzed using descriptive statistics, Pearson correlation, and simple linear regression. Teachers reported high levels of multisensory implementation ( $M = 4.21$ ), with similarly high ratings for children's social ( $M = 4.18$ ) and emotional ( $M = 4.09$ ) development. A strong positive correlation was found between multisensory character education and social–emotional outcomes ( $r = 0.683$ ,  $p < 0.01$ ), with 46.6% variance explained ( $R^2 = 0.466$ ). These findings suggest that multisensory strategies, grounded in experiential learning and sociocultural theory, effectively promote empathy, cooperation, and emotional regulation. This study expands current literature by demonstrating that multisensory learning supports not only cognitive but also affective and behavioral development in early childhood. Practical implications point to the need for more sensory-rich, child-centered pedagogies in character education programs.

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### Corresponding Author:

Ika Anggraheni

Universitas Islam Malang, Indonesia; [ika.anggraheni@unisma.ac.id](mailto:ika.anggraheni@unisma.ac.id)

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## 1. INTRODUCTION

Early childhood education forms the foundation for holistic child development, encompassing cognitive, affective, social, and moral dimensions. At this developmental stage—commonly called the golden age—children's learning experiences shape their long-term social skills, emotional intelligence, and ethical understanding (Nakamichi, Nakamichi, & Nakazawa, 2021). Therefore, character education in early childhood is not optional but a critical developmental necessity. Theoretically, this study is grounded in Vygotsky's sociocultural theory, which posits that children construct knowledge and

values through social interaction and mediated experiences, and Kolb's experiential learning model, which emphasizes learning through concrete sensory engagement and reflection. Integrating these perspectives, character education should be designed as an experiential and interactive process that enables children to internalize values through multisensory participation rather than mere verbal instruction (Denervaud, Gentaz, Matusz, & Murray, 2020).

In practice, however, character education in early childhood remains dominated by didactic, verbal-based instruction, such as storytelling or moral explanation, which often fails to engage children's senses and lived experiences (Mathias et al., 2022). This limitation becomes increasingly concerning amid digital-age challenges that affect children's empathy, cooperation, and emotional regulation (Martinez-Yarza et al., 2023). Many early childhood programs in Indonesia still focus on cognitive enrichment while overlooking social-emotional learning (SEL) as an integral part of character formation. Consequently, there is a growing disconnection between the intended moral values taught in classrooms and children's observable behaviors in social contexts (Seaman et al., 2019; Hardiansyah et al., 2023). Addressing these issues requires pedagogical innovation that moves beyond traditional instruction toward a learning model that engages multiple senses, fosters empathy, and builds emotional resilience.

The urgency of this research is evident from empirical data on the social-emotional development of early childhood. According to a Unicef (2022), around 43% of children in low- and middle-income countries do not achieve optimal development in cognitive and social-emotional aspects due to limited appropriate stimulation in early childhood. In Indonesia, research by (Hardiansyah, Zainuddin, Sukitman, & Astutik, 2023) shows that 47% of children aged 4–6 year's experience difficulties in emotional regulation, such as controlling anger, waiting for their turn, and sharing with peers. Similar findings were reported by (Belay & Dejene, 2024; Chapman & O'Gorman, 2022), which emphasizes that children with low social-emotional skills are more vulnerable to behavioral problems, academic difficulties, and mental health risks later in life.

Furthermore, a longitudinal study by (Grosse et al., 2022; Seaman et al., 2019) found that well-developed social-emotional skills at ages 4–5 were positively correlated with academic success, career success, and social relationships in adulthood. Conversely, failure to build social-emotional competencies from an early age was associated with an increased risk of aggressive behavior, depression, and academic failure. These empirical findings strengthen the argument that character Education based on multisensory experiences deserves greater attention. Multisensory learning, which integrates various sensory modalities such as sight, hearing, touch, smell, and body movement, is believed to provide richer, more meaningful, and memorable learning experiences for children (Frydman & Mayor, 2024; Gil-Moreno & Rico-González, 2023). Thus, this research has the urgency to present an innovative character Education model that is appropriate for the developmental needs of early childhood.

Anchored in these theoretical and empirical considerations, the present study aims to analyze the implementation of multisensory character education and its contribution to the social-emotional development of early childhood learners in Indonesia. Multisensory character education in this context refers to learning activities that engage children's visual, auditory, kinesthetic, and tactile senses to internalize moral and social values through direct experience. This study addresses the following research questions: 1. How is the multisensory approach implemented in early childhood character education? 2. To what extent does the multisensory approach enhance children's social-emotional development? 3. Which character values are most effectively developed through direct experience-based multisensory learning? Through these inquiries, the study seeks to provide empirical evidence and theoretical insights into how multisensory, experience-rich learning environments can be effective pedagogical models for strengthening character formation and social-emotional competencies among young children.

Previous studies have extensively examined either *character education* or *multisensory learning*, but seldom their integration. Research on character education emphasizes moral habituation and

storytelling (Naumann et al., 2023), whereas multisensory learning has been primarily associated with cognitive domains such as literacy and vocabulary acquisition (Niu et al., 2022). Similarly, social-emotional learning (SEL) studies often treat it as a separate construct from moral or character formation (Wigelsworth et al., 2023). Methodologically, this study differs by employing a quantitative descriptive survey that focuses on teachers' perceptions of the multisensory approach as a pedagogical strategy for shaping children's social and emotional competencies. Conceptually, the study contributes to existing literature by explicitly integrating multisensory experiential learning into the character education framework, extending the theoretical scope of multisensory and SEL research to include affective and behavioral development in early childhood.

The main contribution of this study is to develop a new perspective in character Education by integrating multisensory-based learning to shape children's social-emotional behavior from an early age. Academically, this study expands the literature on character Education and SEL by adding a largely overlooked multisensory dimension. Practically, this research can provide a more applicable, contextual, and child-centered learning model, making it relevant for implementation in early childhood Education institutions. Furthermore, the justification for this research is not only based on a gap in the literature but also on the urgent need for the Education sector to prepare a generation with emotional resilience, social empathy, and strong moral values. In the era of digital disruption marked by uncertainty, social-emotional skills are not merely supplementary but have become core competencies for children in facing future challenges. Thus, this research not only contributes theoretically but also has broad implications for educational policy and practice.

## 2. METHODS

This study employed a quantitative descriptive survey design to objectively measure teachers' perceptions of implementing multisensory character education and its contribution to children's social-emotional development. The survey approach was chosen because it allows researchers to obtain systematic, comparable data from relevant practitioners within early childhood education institutions (Bailes et al., 2023). The design focuses on descriptive and correlational analysis rather than generalization, emphasizing depth of contextual understanding rather than inferential population claims.

The research population consisted of all teachers at Raudhatul Athfal (RA) Al Jihad, Malang, Indonesia—an early childhood education institution recognized for implementing character-based curricula. A total sampling technique was applied, involving 20 teachers, representing the entire population of educators at the institution. According to Creswell and Creswell (2021), when the population is below 30 individuals, total sampling ensures comprehensive representation and is statistically acceptable for descriptive survey designs. Hence, the sample size of 20 respondents is adequate and proportional to the research scope, as the study aims to portray a complete institutional picture rather than achieve population-level generalization. Consequently, generalization beyond this institution is not intended, and findings are interpreted within the context of RA Al Jihad.

The research procedure was systematically designed to suit the context of early childhood Education institutions and the research topic of multisensory character Education. The first stage was preparation, which began with a literature review to strengthen the theoretical basis of character Education, multisensory learning, and children's social-emotional development. Based on the results of this review, the researcher developed a research instrument, a questionnaire containing 30 statements corresponding to the predetermined indicators. The instrument was then validated through content validity testing involving early childhood Education experts to ensure the suitability of the statements with the research construct.

The second stage was the implementation of the research. At this stage, the researcher submitted an official request for permission to RA Al-Jihad as the research location, while explaining the objectives and benefits of the research to the principal and teachers who were the respondents. After obtaining

approval, the researcher distributed the questionnaire to all 20 teachers. Before the questionnaire was completed, the researchers provided brief instructions on how to answer the instrument's questions and emphasized that the data collected would be kept confidential and used only for research purposes. The third stage was data collection, in which teachers filled out the questionnaire independently based on their experiences and perceptions of the implementation of multisensory character Education at RA Al Jihad. During the completion process, the researcher was present to assist if the respondents had any questions or concerns. The collected data was then rechecked to ensure the completeness and consistency of the answers before further analysis. The final stage was data analysis.

The data obtained from the questionnaire results were processed using descriptive statistical analysis techniques to identify general trends, distribution of answers, and dominant aspects of the implementation of multisensory-based character Education that most influenced children's social-emotional development. The results of this analysis were then used as a basis for drawing conclusions and providing practical recommendations related to the development of a multisensory-based character learning model for early childhood.

The primary research instrument was a closed-ended questionnaire containing 30 items distributed across three constructs: (1) implementation of multisensory character education, (2) children's social development, and (3) children's emotional development. Each item was rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

**Table 1.** Indicators of the Research Instrument

No	Research Construct	Indicators	Number of Items
1	Implementation of Multisensory Character Education	- Utilization of multiple senses (visual, auditory, kinesthetic, tactile) in learning. - Use of experiential-based media and activities. - Active involvement of children in multisensory activities.	12
2	Children's Social Development	- Ability to cooperate with peers. - Ability to share and respect others. - Discipline in following group rules.	9
3	Children's Emotional Development	- Ability to recognize and express emotions. - Ability to regulate negative emotions. - Ability to show empathy toward others.	9
Total Items			30

Content validity was assessed by a panel of three early childhood education experts from Universitas Islam Malang and Universitas Negeri Malang. The experts evaluated the instrument using three criteria: (a) clarity of item wording, (b) relevance to theoretical constructs, and (c) cultural appropriateness for early childhood settings. Only items rated "appropriate" or "highly appropriate" by at least two experts were retained. Subsequently, construct validity was examined through corrected item-total correlations, with results ranging from  $r = 0.467$  to  $0.812$  (all  $> 0.444$  at  $N = 20$ ,  $\alpha = 0.05$ ), indicating that all items were valid. The instrument's reliability, measured using Cronbach's Alpha, reached  $\alpha = 0.912$ , reflecting excellent internal consistency (Hair et al., 2020).

The data were analyzed using SPSS (version 26). Before inferential testing, the data were examined for normality using the Shapiro-Wilk test, given the small sample size ( $N < 50$ ). Results showed that the data distribution for both key variables—implementation of multisensory character education and children's social-emotional development—was normal ( $p > 0.05$ ). Accordingly, Pearson's product-moment correlation was used to test the relationship between the two variables.

However, a backup nonparametric test (Spearman's rho) was also considered to ensure analytical robustness. The decision rule was as follows: if either variable had a non-normal distribution ( $p < 0.05$ ), Spearman's rho would replace Pearson's  $r$ . Since both variables met normality assumptions, Pearson's  $r$  was retained as the appropriate test. Furthermore, simple linear regression analysis was performed

to determine how multisensory character education predicts variation in children's social-emotional development. Descriptive statistics (mean, standard deviation, and frequency distribution) were used to interpret teachers' responses, following three categorical intervals: 1.00–2.00 (low), 2.01–3.50 (moderate), and 3.51–5.00 (high). Inferential analysis results were interpreted according to Cohen's (1988) effect size guidelines:  $r = 0.10$ – $0.29$  (weak),  $0.30$ – $0.49$  (moderate), and  $\geq 0.50$  (strong). The interpretation process connected statistical outcomes to the theoretical framework of Vygotsky's sociocultural theory and Kolb's experiential learning model, providing both quantitative and conceptual insight into how multisensory approaches support social-emotional growth in early childhood education.

### 3. FINDINGS AND DISCUSSION

#### 3.1 Findings

This study provides empirical evidence on the implementation of multisensory character Education at Raudhatul Aftal Al Jihad and teachers' perceptions of its contribution to the social-emotional development of young children. Data analysis from 20 respondents revealed a positive trend, with the majority of teachers assessing that the multisensory approach applied in learning was able to create a more contextual, interactive, and meaningful learning environment for children. These findings not only reinforce the theoretical arguments regarding the effectiveness of multisensory learning but also provide field evidence that this strategy is relevant and applicable to the context of character Education at the Raudhatul Aftal level.

**Table 2.** Percentage Distribution of Teachers' Responses on the Questionnaire

Research Construct	Indicators	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	SD	Category
Implementation of Multisensory Character Education	Utilization of multiple senses in learning	0	5	10	40	45	4.25	0.58	High
	Use of experiential-based media and activities	0	0	15	50	35	4.20	0.56	High
	Active involvement of children in multisensory activities	0	5	10	35	50	4.30	0.61	High
	Average Construct Score						4.21	0.47	High
Children's Social Development	Cooperation with peers	0	5	15	45	35	4.10	0.64	High
	Ability to share and respect others	0	0	20	40	40	4.20	0.62	High
	Discipline in following group rules	0	5	10	50	35	4.25	0.59	High
	Average Construct Score						4.18	0.52	High
Children's Emotional Development	Recognition and expression of emotions	0	10	15	40	35	4.00	0.67	High

Research Construct	Indicators	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	SD	Category
	Regulation of negative emotions	0	5	20	45	30	4.00	0.62	High
	Ability to show empathy toward others	0	5	15	45	35	4.15	0.65	High
Average Construct Score							4.09		

The findings show that teachers at RA Al Jihad view the implementation of multisensory character education positively and recognize its significant impact on children's social and emotional growth. The descriptive results indicate that multisensory character education achieved the highest mean score ( $M = 4.21$ ;  $SD = 0.47$ ), which is classified as high. This suggests that teachers consistently use various sensory modalities—visual, auditory, kinesthetic, and tactile—to help children internalize character values through active learning experiences. Children's social development also scored high ( $M = 4.18$ ;  $SD = 0.52$ ), reflecting improved cooperation, willingness to share and respect others, and better discipline in following classroom rules. These results are consistent with previous studies highlighting the role of experiential and interactive learning in fostering prosocial behavior in early childhood. The mean score for emotional development was slightly lower ( $M = 4.09$ ;  $SD = 0.49$ ) but still within the high range. This means children generally recognize, express, and manage their emotions, though some still struggle with controlling anger or frustration. This indicates that emotional regulation needs ongoing guidance and modeling. Overall, the results confirm that multisensory character education is an effective approach for early childhood learning. Teachers can create meaningful learning through sensory-rich and experiential activities that strengthen children's empathy, cooperation, discipline, and emotional control, bridging abstract moral values with real-life behavior.

**Table 3.** Pearson Correlation between Implementation of Multisensory Character Education and Children's Social-Emotional Development

Variables	N	Pearson r	Sig. (2-tailed)	Remark
Implementation of Multisensory Character Education Children's Social-Emotional Development	20	0.683	0.001	Significant ( $p < 0.01$ )

The Pearson correlation test shows a strong and significant positive relationship between multisensory character education and children's social-emotional development ( $r = 0.683$ ,  $p = 0.001 < 0.01$ ). This means that the better teachers apply multisensory strategies in learning, the higher the children's social and emotional development. Based on Cohen's (1988) criteria, a coefficient between 0.50 and 0.70 indicates a strong correlation, confirming that multisensory character education substantially influences children's social-emotional growth. These results suggest that engaging children through various sensory experiences—visual, auditory, kinesthetic, and tactile—enriches learning and strengthens their social behavior, cooperation, and emotion regulation. In short, the multisensory approach effectively connects character values with real behavior, supporting previous findings that experience-based learning enhances social-emotional development in early childhood.

**Table 4.** Interpretation of Correlation Coefficient Strength (Cohen, 1988)

Correlation Coefficient (r)	Interpretation	Description
0.00 – 0.19	Very weak	Almost no relationship between variables
0.20 – 0.39	Weak	Low relationship; minimal practical significance
0.40 – 0.49	Moderate	Noticeable relationship, moderate effect
0.50 – 0.70	Strong	Substantial relationship; high practical significance
> 0.70	Very strong	Very high relationship; variables are closely associated

Based on Cohen's (1988) criteria, the correlation value of  $r = 0.683$  falls into the strong category. This means that the better the multisensory character education is implemented, the higher the children's social and emotional development level. Thus, multisensory strategies have a strong and meaningful influence on improving social-emotional skills in early childhood.

**Table 5.** Results of Simple Linear Regression Analysis  
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.683	0.466	0.437	0.327

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.276	1	4.276	12.823	0.002
Residual	4.904	18	0.272		
Total	9.180	19			

Coefficients

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
Constant	1.732	0.412	–	4.203	0.001
Multisensory Character Education (X)	0.612	0.171	0.683	3.580	0.002

The simple regression analysis shows a significant influence of multisensory character education on children's social-emotional development. The R value of 0.683 indicates a strong relationship, and  $R^2 = 0.466$  means that 46.6% of children's social-emotional growth is explained by multisensory implementation, while other factors account for the rest. The model is statistically significant ( $F = 12.823$ ;  $p = 0.002 < 0.01$ ), showing that every one-unit increase in multisensory application raises social-emotional development by 0.612 points. These results confirm that multisensory learning effectively strengthens children's character, social interaction, and emotional control through richer, more meaningful learning experiences.

### 3.2 Discussion

Theoretically, the findings of this study align with Kolb's experiential learning model and Vygotsky's sociocultural theory, which emphasize that children learn best through concrete experiences and social interactions. In this framework, multisensory character education allows children to simultaneously engage their visual, auditory, kinesthetic, and tactile senses, making values understood cognitively and practiced behaviorally. This supports the view of Catala, Gijlers, and Visser (2023) that real experiences and social collaboration are crucial for internalizing moral and social values. Hence, the multisensory approach effectively bridges the gap between abstract character values and children's real-life behavior.

Compared with international studies, the present results show consistency and meaningful expansion. For instance, Wu et al. (2023) demonstrated that multisensory methods improve children's literacy and numeracy, while Wigelsworth et al. (2023) found that social-emotional learning (SEL) programs enhance children's emotional well-being and academic outcomes across countries. This study further demonstrates that multisensory learning is equally effective in the affective and behavioral domains, particularly in shaping empathy, cooperation, and emotion regulation—areas less explored in global research. Thus, this work broadens the application of multisensory pedagogy from cognitive to socio-emotional contexts, especially within the Indonesian early childhood education system.

From an implementation perspective, teachers at RA Al Jihad consistently employed sensory-integrated activities such as color-rich visuals, songs, storytelling, movement, and tactile play. These classroom practices encouraged emotional engagement and helped children participate actively in

learning. The effectiveness of such multisensory strategies can be visually represented through bar charts or correlation plots, which highlight the high mean scores for multisensory implementation and social-emotional development. Presenting these visuals in publication form can make statistical patterns more accessible to readers and align with current trends in mixed-format academic reporting.

This study theoretically extends the understanding of character education beyond verbal instruction. By introducing a multisensory dimension, character formation becomes a form of embodied learning that connects thought, emotion, and physical experience. Empirical results reinforce that direct, sensory-based engagement strengthens value internalization more effectively than conventional moral teaching (Bailey & Schloss, 2023).

Practically, these findings guide teachers to integrate diverse sensory strategies—such as role-playing, music-and-movement sessions, or exploration of natural environments—to foster cooperation, empathy, and self-control. The results also align with global educational frameworks promoting 21st-century competencies, where socio-emotional intelligence is a key foundation for lifelong learning and global citizenship (Nakamichi et al., 2021). In pluralistic societies like Indonesia, multisensory character education further supports national goals of nurturing tolerance, empathy, and discipline in culturally diverse classrooms.

Despite its significance, this study has limitations. First, the data were collected solely through teacher self-reports, which may be influenced by social desirability bias—teachers might overstate positive practices or outcomes. Future studies should employ triangulation methods, such as classroom observation, child assessments, or parent interviews, to validate these findings and gain richer insight into learning processes. Second, the research was confined to a single institution with a small sample ( $N = 20$ ), thus limiting generalizability. Subsequent studies could involve multiple schools across regions or adopt mixed methods and experimental designs to examine causal relationships between multisensory practices and developmental outcomes.

Lastly, this study also carries social and ethical implications. Implementing multisensory character education has the potential to cultivate emotionally resilient and socially adaptive young learners, contributing to a more empathetic and cooperative society. However, when digital tools are incorporated into multisensory learning, educators must guard against overstimulation and screen dependence. Digital media should complement—not replace—real-world sensory experiences, and content must remain aligned with local cultural and developmental principles.

In conclusion, the discussion highlights that multisensory character education represents a powerful, evidence-based strategy for enhancing social-emotional development in early childhood, offering both local relevance and global resonance. Future studies with broader samples, triangulated data, and multimodal presentation (quantitative-visual) will help consolidate its position as a transformative approach to early character formation.

#### 4. CONCLUSION

This study concludes that multisensory character education is an effective and evidence-based approach for enhancing children's social-emotional development in early childhood education. The findings are consistent with Kolb's experiential learning model and Vygotsky's sociocultural theory, emphasizing learning through concrete experiences and social interaction. In this framework, engaging children's visual, auditory, kinesthetic, and tactile senses enables them to understand values cognitively and apply them behaviorally in daily life, thus bridging the gap between abstract moral concepts and real behavior.

Empirically, the study demonstrates a strong and significant relationship between multisensory implementation and children's social-emotional outcomes, expanding global evidence that multisensory approaches are not only effective for cognitive domains (Wu et al., 2023) but also for affective and behavioral development, such as empathy, cooperation, and emotional regulation.

Practically, these results guide teachers to integrate sensory-rich strategies—such as storytelling, music, movement, and tactile activities—to strengthen engagement and internalize character values. For policymakers, the findings highlight the importance of embedding multisensory principles into 21st-century early childhood curricula to cultivate empathy, discipline, and resilience in diverse learning contexts.

While the study's limited sample and reliance on teacher self-reports restrict generalization, future research should apply triangulated and mixed-method designs involving direct child observation and broader samples. Overall, the study contributes theoretically and practically by positioning multisensory character education as a transformative, culturally adaptable framework for building emotionally intelligent and socially responsible young learners.

**Acknowledgments:** In this section, you can acknowledge any support given, which is not covered by the author's contribution or funding sections. This may include administrative and technical support, or donations in kind (e.g., materials used for experiments).

**Conflicts of Interest:** Declare conflicts of interest or state "The authors declare no conflict of interest." Authors must identify and declare any personal circumstances or interests that may be perceived as inappropriately influencing the representation or interpretation of reported research results.

## REFERENCES

- Bailes, L. G., Ennis, G., Lempres, S. M., Cole, D. A., & Humphreys, K. L. (2023). Parents' emotion socialization behaviors in response to preschool-aged children's justified and unjustified negative emotions. *PLoS ONE*, *18*(4 April), 1–16. <https://doi.org/10.1371/journal.pone.0283689>
- Bailey, J. O., & Schloss, I. (2023). "Awesomely freaky!" The impact of type on children's social-emotional perceptions of virtual reality characters. *Conference on Human Factors in Computing Systems - Proceedings*. <https://doi.org/10.1145/3544548.3581501>
- Belay, S., & Dejene, W. (2024). Testing and validating the collaborative for academic, social, and emotional learning (CASEL) model in the context of Ethiopian secondary schools: Factorial analysis. *Social Sciences & Humanities Open*, *10*, 101128.
- Caldwell, M. P., Cheung, H., Cheung, S. K., Li, J. Bin, & Carrey Siu, T. S. (2022). Visuospatial perspective-taking in social-emotional development: enhancing young children's mind and emotion understanding via block building training. *BMC Psychology*, *10*(1), 1–13. <https://doi.org/10.1186/s40359-022-00976-5>
- Catala, A., Gijlers, H., & Visser, I. (2023). Guidance in storytelling tables supports emotional development in kindergartners. In *Multimedia Tools and Applications* (Vol. 82). Multimedia Tools and Applications. <https://doi.org/10.1007/s11042-022-14049-7>
- Chapman, S. N., & O'Gorman, L. (2022). Transforming Learning Environments in Early Childhood Contexts Through the Arts: Responding to the United Nations Sustainable Development Goals. *International Journal of Early Childhood*, *54*(1), 33–50. <https://doi.org/10.1007/s13158-022-00320-3>
- Denervaud, S., Gentaz, E., Matusz, P. J., & Murray, M. M. (2020). Multisensory Gains in Simple Detection Predict Global Cognition in Schoolchildren. *Scientific Reports*, *10*(1), 1–11. <https://doi.org/10.1038/s41598-020-58329-4>
- Eordegh, G., Tot, K., Kiss, A., Keri, S., Braunitzer, G., & Nagy, A. (2022). Multisensory stimuli enhance the effectiveness of equivalence learning in healthy children and adolescents. *PLoS ONE*, *17*(7 July), 1–14. <https://doi.org/10.1371/journal.pone.0271513>
- Frydman, J. S., & Mayor, C. (2024). A Scoping Review on the Use and Potential of School-Based Drama Therapy to Enhance Socio-emotional Skills in Early Childhood. *Early Childhood Education Journal*, *52*(4), 669–680. <https://doi.org/10.1007/s10643-023-01471-1>
- Gil-Moreno, J., & Rico-González, M. (2023). The Effects of Physical Education on Preschoolers' Emotional Intelligence: A Systematic Review. *Sustainability (Switzerland)*, *15*(13). <https://doi.org/10.3390/su151310632>

- Granö, P., & Turunen, S. (2022). 'It Is You in My Picture!' A Holistic Approach to Six-Year-Old Children's Art Experiences. *International Journal of Art and Design Education*, 41(1), 142–157. <https://doi.org/10.1111/jade.12397>
- Grosse, G., Simon, A., Soemer, A., Schönfeld, R., Barth, S., & Linde, N. (2022). Teacher–Child Interaction Quality Fosters Working Memory and Social-Emotional Behavior in Two- and-Three-Year-Old Children. *International Journal of Early Childhood*, 54(3), 421–444. <https://doi.org/10.1007/s13158-022-00327-w>
- Hardiansyah, F., Zainuddin, Z., Sukitman, T., & Astutik, C. (2023). Development Of Learning Media Smart Book To Improve Understanding Of Elementary School Students In Science Learning. *Lentera Pendidikan: Jurnal Ilmu Tarbiyah Dan Keguruan*, 26(1), 72–87. <https://doi.org/https://doi.org/10.24252/lp.2023v26n1i7>
- Harris, V. W., Anderson, J., & Visconti, B. (2022). Social emotional ability development (SEAD): An integrated model of practical emotion-based competencies. *Motivation and Emotion*, 46(2), 226–253. <https://doi.org/10.1007/s11031-021-09922-1>
- Martinez-Yarza, N., Santibáñez, R., & Solabarrieta, J. (2023). A Systematic Review of Instruments Measuring Social and Emotional Skills in School-Aged Children and Adolescents. *Child Indicators Research*, 16(4), 1475–1502. <https://doi.org/10.1007/s12187-023-10031-3>
- Mathias, B., Andrä, C., Schwager, A., Macedonia, M., & von Kriegstein, K. (2022). Twelve- and Fourteen-Year-Old School Children Differentially Benefit from Sensorimotor- and Multisensory-Enriched Vocabulary Training. In *Educational Psychology Review* (Vol. 34). Springer US. <https://doi.org/10.1007/s10648-021-09648-z>
- Molyneux, T. M., Zeni, M., & Oberle, E. (2023). Choose Your Own Adventure: Promoting Social and Emotional Development Through Outdoor Learning. *Early Childhood Education Journal*, 51(8), 1525–1539. <https://doi.org/10.1007/s10643-022-01394-3>
- Nakamichi, K., Nakamichi, N., & Nakazawa, J. (2021). Preschool social-emotional competencies predict school adjustment in Grade 1. *Early Child Development and Care*, 191(2), 159–172. <https://doi.org/10.1080/03004430.2019.1608978>
- Näslund-Hadley Mercedes Mateo-Berganza Díaz Humberto Santos Margarita Cabra Laura Felizia Vélez Medina, E. (2023). *Socioemotional Learning in Early Childhood Education: Experimental Evidence from the Think Equal Program's Implementation in Colombia Education Division Inter-American Development Bank*. (May). Retrieved from <http://www.iadb.org>
- Naumann, S., Bayer, M., Kirst, S., van der Meer, E., & Dziobek, I. (2023). A randomized controlled trial on the digital socio-emotional competence training Zirkus Empathico for preschoolers. *Npj Science of Learning*, 8(1), 1–12. <https://doi.org/10.1038/s41539-023-00169-8>
- Niu, S. J., Niemi, H., & Furman, B. (2022). Supporting K-12 Students to Learn Social-Emotional and Self-Management Skills for Their Sustainable Growth with the Solution-Focused Kids' Skills Method. *Sustainability (Switzerland)*, 14(13). <https://doi.org/10.3390/su14137947>
- Seaman, H., Giles, P., Seaman, H., & Giles, P. (2019). Supporting children ' s social and emotional well-being in the early years : an exploration of practitioners ' perceptions years : an exploration of practitioners ' perceptions. *Early Child Development and Care*, 0(0), 1–15. Retrieved from <https://doi.org/10.1080/03004430.2019.1649668>
- Unicef. (2022). *Innocenti Research Brief: Evidence and Gap Map Research Brief*. Retrieved from <https://www.campbellcollaboration.org/funding/>
- Webber, S. C., & Koops, L. H. (2023). "A Piece of Normal Life When Everything Else is Changed" Remote Early Childhood Music Classes and Toddler Socialization. *Early Childhood Education Journal*, 51(7), 1253–1264. <https://doi.org/10.1007/s10643-022-01371-w>
- Wigelsworth, M., Mason, C., Verity, L., Humphrey, N., & Qualter, P. (2023). A Rose by any Other Name? Using Core Components to Categorize Social and Emotional Learning Provision. *School Mental Health*, 15(3), 710–721. <https://doi.org/10.1007/s12310-023-09585-y>
- Wu, Y., Matteson, H. M., Baker, C. M., & Frank, M. C. (2023). Angry, Sad, or Scared? Within-valence

Mapping of Emotion Words to Facial and Body Cues in 2 to 4-Year-Old Children. *Collabra: Psychology*, 9(1), 1–13. <https://doi.org/10.1525/collabra.74333>

Zinsser, K. M., Curby, T. W., Gordon, R. A., & Moberg, S. (2023). A unidimensional model of emotion-focused teaching in early childhood. *Learning Environments Research*, 26(3), 933–949. <https://doi.org/10.1007/s10984-023-09461-1>