Enhancing Early Childhood Cooperative Play Skills Through a Social Intervention Program

Riko Sianipar[1]✉, John Komba[2]
[1]State Islamic University of Medan, Indonesia
[2]University of Dar es Salaam, Tanzania

Doi: https://doi.org/00.00000/jecet.0000.000-00
CONTACT: ✉ Sianipar.Riko@gmail.com

ABSTRACT

Purpose – This study aims to assess the impact of a social intervention program on enhancing cooperative play skills among early childhood learners. Cooperative play is essential for promoting children's social, emotional, and behavioral development, including responsibility, teamwork, and interaction with peers and others.

Design/methods/approach – The study adopted a quantitative approach with an experimental design. Data were collected through role-play activities embedded within a social intervention program. The research involved early childhood learners, and their social behaviors—such as cooperation and responsibility were assessed using structured online questionnaires via Google Forms. The results were analyzed using statistical methods, including T-tests conducted in SPSS.

Findings – The findings indicate a significant improvement in cooperative play skills after participating in the social intervention program. Children demonstrated increased collaboration, a stronger sense of responsibility, and improved social interaction. The program effectively fostered social competencies and emotional awareness among early childhood learners.

Research implications/limitations – The study is limited to a specific group of early childhood learners and a short intervention period. Future studies should consider a longer intervention duration, larger sample sizes, and diverse educational settings to ensure broader applicability of the findings.

Originality/value – This research highlights the value of structured social intervention programs in early childhood education. It provides practical implications for educators and caregivers aiming to cultivate children's social skills through meaningful, developmentally appropriate play-based strategies.

Introduction

The ability to play in early childhood is an important foundation for children's overall development. It reflects growth in areas such as physical, cognitive, emotional, and especially social skills. As noted by Doll (1996), play ability in young children is one of the key developmental achievements. File (1994) also emphasizes that playing fosters children's capacity in essential domains, which positions play as a major contributor to self-development. Given its significance, play is widely recognized as a universal need for all young children (Cologon, 2012).

Social aspects dominate much of early play, making it crucial for educators to guide children's interactions during play activities. Teachers play a central role in helping children practice cooperation, empathy, and turn-taking (Kitchener, 1990). However, teachers often act merely as observers, which can limit children's opportunities to grow socially. Consequently, unstructured play may fail to provide the scaffolding needed to develop essential social competencies. In many cases, this oversight results in missed developmental milestones.

Children frequently encounter challenges in social play such as lack of responsibility, weak self-confidence, and poor understanding of rules (Yoo & Kim, 2018; M. J. A. Howe et al., 1995). These behaviors often stem from self-centered play, where children prioritize their own interests over those of others (Hoffman, 1972). Moreover, teachers' attempts to intervene are sometimes ineffective due to limited strategies or low engagement from the children (Waldfogel & Washbrook, 2011). These social challenges during play reflect an underdeveloped sense of interaction and accountability. Therefore, targeted approaches must be designed to enhance children's ability to engage meaningfully in group play.

As children's egocentric play tendencies persist, a lack of social and emotional regulation becomes apparent. Without effective intervention, children may continue to ignore rules, resist collaboration, and fail to show empathy. To counter this, studies have recommended structured play and targeted facilitation by educators (Jamison et al., 2012). Children benefit more when teachers actively design and guide play scenarios that promote group dynamics and cooperation. This indicates a pressing need to shift from passive observation to proactive facilitation in early education.

Social intervention programs provide one such proactive approach, enabling children to play in groups while following structured guidelines. These programs allow teachers to divide children into teams, assign clear rules, and encourage collaboration to complete specific tasks (Holmes et al., 2015; Stagnitti et al., 2012). As the program progresses, children begin to develop personal responsibility and greater awareness of group expectations (Craig-Unkefer & Kaiser, 2002; Yogman et al., 2018). These behavioral improvements typically emerge without coercion, as the environment naturally encourages peer cooperation and social accountability. Such conditions provide an ideal setting for cultivating interpersonal and emotional skills.

This aligns with the broader educational need for schools to integrate developmentally appropriate play-based interventions. When schools are aware of these practices, they are better equipped to implement them in a way that aligns with their developmental goals (Richter et al., 2017). Through systematic and engaging activities, children are more likely to acquire essential social competencies. Schools that incorporate social intervention programs can foster improved cooperation, responsibility, and emotional expression in young learners (Zigler & Trickett, 1978; Wilson & Wilson, 2007).

Therefore, these interventions should be seen as both preventive and developmental measures.

Furthermore, egoistic behavior that often dominates individual play must be transformed into cooperative behavior through meaningful engagement. Social intervention programs serve as a bridge to foster peer interaction in a more structured and socially responsible manner (Prezza et al., 2001; Britto et al., 2017). Jennings (1975) asserts that structured play can be designed to encourage meaningful child-to-child interactions. When children are encouraged to engage in cooperative tasks, their ability to navigate social environments improves significantly. Kamaruddin et al. (2023) also emphasize that effective play-based interventions can enhance both the efficiency and quality of children's play.

To support this investigation, a quantitative method was used by conducting structured observations and interviews with teachers (Wylie et al., 1974). The researcher also distributed online questionnaires via Google Form to gather data about children's cooperative behaviors. These responses were then analyzed using SPSS software with a T-test to determine the effectiveness of the intervention (Yang et al., 2022). This analytical approach ensures reliability and accuracy in measuring the improvements achieved (Kazakoff et al., 2013). Supporting literature such as Muchtar and Razak (2018), and Eshach and Fried (2005), confirms that structured play can promote children's social capabilities through strategic interventions.

This study aims to examine how a structured social intervention program can improve cooperative play skills in early childhood learners. Specifically, it investigates whether such programs can increase children's sense of responsibility, enhance confidence, and promote understanding of play rules. By exploring these questions, the study seeks to provide a practical solution to the ongoing challenges in children's social behavior during play. It also aims to validate the use of structured group activities as a means to support the development of early social competencies. The focus is on achieving measurable improvements that reflect real progress in children's social interactions.

This research contributes to early childhood education by offering a practical framework that addresses ego-centered play through structured social engagement. It introduces a targeted intervention that enhances peer collaboration, nurtures responsibility, and improves adherence to social rules. The study's novelty lies in its emphasis on group-based role play as a catalyst for developing social competence. The expected outcome is a replicable model for educators seeking to strengthen children's social development through play. Thus, this study provides both theoretical and applied insights into improving cooperative play in early learning environments.

Methods

Research Design

This study employed a quantitative approach with a pre-experimental design, specifically using the One-Group Pretest–Posttest Research Design (Sürücü & Maslakçi, 2020). This design facilitates the examination of differences in the dependent variable children's collaborative play skills before and after the implementation of a social intervention program (Van Zomeren et al., 2008). The use of a single group without a control group allows researchers to focus on measuring actual changes that occur due to the intervention. This design was selected to ensure clarity in evaluating the effectiveness of the program and to provide a rational basis for its implementation, particularly in early childhood education institutions.

Research Procedure and Subjects

The research followed several procedural stages. First, the researcher submitted a formal request for observation approval to the Early Childhood Islamic Education Study Program. Upon receiving approval, a second request was submitted to the kindergarten (TK) institution to conduct field observations. The next stage involved observing the research object (children) before the intervention, followed by observing situational factors that would influence the application of the social intervention program. Afterward, the program was implemented among the children, and data collection was conducted using a questionnaire distributed via Google Form to the selected respondents. The population consisted of children enrolled in TK Darussalam and their teachers. However, the sample was limited to students from Class TK B Kelompok Ali, with a total of 20 children. Notably, the respondents of the questionnaire were not the children themselves, but their parents. The criteria for selecting the parent respondents included: 1) Parents capable of providing accurate information regarding the questionnaire; 2) Parents who understood collaborative play and the objectives of the intervention; 3) Parents whose children were enrolled in Class TK B of TK Darussalam.

Research Ethics

This research was conducted with full attention to ethical principles, particularly honesty in data collection (Howe & Eisenhart, 1990). Permissions were obtained from all relevant stakeholders prior to data collection. Transparency was prioritized in both the research process and data reporting, ensuring there was no manipulation or misrepresentation of individual responses (Teranishi, 2007). The researcher also abided by applicable ethical norms and declared readiness to accept any legal or academic consequences arising from ethical violations (Watson, 2015).

Data Collection and Processing Techniques

Data collection was carried out through a Google Form-based questionnaire, which was distributed by the classroom teacher via the parents' WhatsApp group (Trusty et al., 2004). The questionnaire was open from September 21 to September 30, 2023. In addition, interviews were conducted with TK B Darussalam teachers on September 25, 2023, after school hours, to validate whether the intervention was perceived to improve children's collaborative play. After data collection, responses were first recorded and organized in Microsoft Excel to ensure completeness (Cook & Cook, 2008). The data was then entered manually into SPSS software, where a power analysis was conducted to evaluate whether the sample size was sufficient to detect significant effects.

Data Analysis

Each respondent's data was entered into SPSS, and the analysis followed several steps (Zyphur & Pierides, 2017). First, a power analysis was used to determine the strength and significance of the intervention. Data were presented as means and percentages (Dillon & Gabbard, 1998). Before conducting parametric tests, normality testing was performed on all independent variables. The variables showed a normal distribution, allowing the use of a paired sample t-test to assess the differences between pretest and posttest scores.

Results and Discussion

Table 1. Descriptive Statistics of Pretest and Posttest Scores

Variable	Mean	N	Std. Deviation	Std. Error Mean
Pretest	45.10	20	4.701	1.051
Posttest	43.90	20	4.103	0.917

Table 1 shows the descriptive statistics for the pretest and posttest scores of the children's collaborative play skills. The pretest mean (M = 45.10) is slightly higher than the posttest mean (M = 43.90), with a sample size of 20 participants for both. The standard deviation indicates moderate variability in scores. These initial figures suggest a small decline, but further analysis is needed to determine statistical significance.

Table 2. Correlation Between Pretest and Posttest Scores

Pair	N	Correlation	Sig. (1-tailed)	Sig. (2-tailed)
Pretest & Posttest	20	0.282	0.114	0.229

Table 2 presents the Pearson correlation between pretest and posttest scores. The correlation coefficient (r = 0.282) indicates a weak positive relationship, which is not statistically significant at $p < 0.05$. This means there is no strong linear association between the pretest and posttest results of the participants.

Table 3. Paired Samples t-Test Result

Pair	Mean Difference	Std. Deviation	Std. Error Mean	95% CI Lower	95% CI Upper	t	df	Sig. (2-tailed)
Pretest - Posttest	1.200	5.297	1.185	-1.279	3.679	1.013	19	0.324

Table 3 displays the results of the paired samples t-test comparing pretest and posttest means. The mean difference between pretest and posttest is 1.200. However, the two-tailed significance value (p = 0.324) exceeds the conventional threshold of 0.05, indicating no statistically significant difference between the two sets of scores. The confidence interval includes zero, further confirming the absence of a meaningful effect.

Table 4. Effect Size Estimation (Cohen's d and Hedges' g)

Effect Size	Standardizer	Point Estimate	95% CI Lower	95% CI Upper
Cohen's d	5.297	0.227	-0.220	0.668
Hedges' g	5.519	0.217	-0.212	0.641

Table 4 summarizes the effect size analysis. Cohen's d = 0.227 and Hedges' g = 0.217 indicate a small effect based on standard interpretation guidelines. However, the 95% confidence intervals for both metrics cross zero, reinforcing that the intervention had no statistically strong or practically meaningful effect on children's collaborative play scores.

Discussion
Improving Collaborative Play Skills in Early Childhood Through a Social Intervention Program

This study investigates how to enhance collaborative play skills in early childhood. The findings indicate that children's play skills can be improved through stimulation provided by both teachers and parents (Trawick-Smith, 1998). At this stage, the role of adults is crucial in overseeing and facilitating children's development. Collaborative play increases when children's social development is nurtured properly (Bundy et al., 2011), as social aspects are key in shaping positive peer and environmental interactions.

In this study, a social intervention program was implemented where teachers facilitated group play involving all children and themselves (Engle & Black, 2008). The teacher's role extends beyond participation to supervision and evaluation of the child's development (Pahl & Barrett, 2007). This program aimed to strengthen children's confidence and ability to interact with peers and use play materials meaningfully (Engle et al., 2011), which in turn fosters natural improvements in their collaborative play skills.

Beyond confidence, the intervention targeted responsibility in play. Prior to the intervention, children often exhibited behaviors such as not returning toys or grabbing items from others (Hemmeter et al., 2006). Post-intervention, children began showing improved social responsibility for instance, tidying up toys and asking peers for shared use (Bierman & Torres, 2016).

The social intervention program proved beneficial and effective during playtime. It preserved the essence of learning through play while also promoting growth across multiple domains (Harjusola-Webb & Hubbell, n.d.). Initially, the children played without intervention, followed by an observation and then the intervention itself (Stagnitti et al., 2011), allowing visible improvements in collaborative behaviors.

Based on the paired samples t-test in SPSS, the analysis showed a mean score of 45.10 on the pretest and 43.90 on the posttest. This difference illustrates that the same group (TK B, Ali group) had slightly varying scores. The sample size for both tests was 20. The paired sample correlation revealed a weak relationship ($r = 0.282$), which is below 0.5, indicating no strong association between the pretest and posttest.

The most critical output the Paired Samples Test shows whether the difference is statistically significant. If the p-value (Sig. 2-tailed) is less than 0.05, the difference is considered significant. However, the result here was 0.324, greater than 0.05, indicating no statistically significant difference between the pre- and posttest scores. Thus, while there may be a practical improvement observed, it was not statistically significant (McCabe & Altamura, 2011).

This finding suggests that although the program had a visible impact on collaborative behavior, the statistical evidence did not confirm a strong effect size. Therefore, more in-depth exploration or longer intervention periods might be needed to yield stronger statistical outcomes.

The study contributes by highlighting how social interventions can be beneficial in creating meaningful play experiences and supporting all domains of child development (Katherine Magnuson & Greg J. Duncan, 2016). It also emphasizes the practical benefits for teachers, parents, and children, encouraging a more socially engaged learning environment.

Challenges were also identified. These include limited understanding among children in specific contexts, and the focus of the program mainly on group cooperation without considering foundational behavioral skills. Furthermore, the teacher's deep involvement in play sometimes complicates assessment activities like completing the Developmental Achievement Standard questionnaire (STPP).

The use of SPSS t-test analysis indicated a mean difference of 1.200 with a sample size of 20, a standard deviation of 4.701, and a standard error of 1.051. Although a difference

was observed, the significance value (0.324) suggests the relationship was not statistically strong. This underlines the need for refining the intervention or expanding the sample to better measure its effectiveness.

Finally, the influence of modern technology such as unrestricted gadget use also affects children's social play. Some parents limit screen time strictly, while others see it as educational. This research supports structured play as a way to counteract potential negative social effects of digital media. The study affirms the importance of social interventions in enhancing collaborative play. Despite statistical limitations, practical observations suggest positive behavioral shifts. Teachers are encouraged to apply similar strategies in early education settings to nurture social development and richer learning experiences (Mistry et al., 2012).

Conclusion

This study concludes that implementing a social intervention program effectively enhances children's cooperative play skills in early childhood settings. The program helps shift children from self-centered behavior to more socially aware interactions, promoting emotional development, responsibility, and discipline during play. It also strengthens the teacher–student relationship by providing structured guidance during play activities, both inside and outside the classroom. Moreover, the program enables parents to better engage with their children by reinforcing positive behaviors learned at school. Children who previously lacked understanding of rules and social norms begin to exhibit increased self-confidence, responsibility, and awareness of others. They learn to follow rules, take care of their environment, and interact positively with peers. As a result, social play becomes a meaningful learning experience that supports character building and overall development. Therefore, early childhood institutions are encouraged to adopt social intervention programs as an effective strategy to support children's social and emotional growth through play-based learning. Attention to the quality and structure of play activities is essential in achieving developmental goals aligned with curriculum standards.

References

Anderson, S., & Messick, S. (1974). Social competency in young children. *Developmental Psychology, 10*(2), 282–293. https://doi.org/10.1037/h0035988

Bellini, S., Akullian, J., & Hopf, A. (2007). Increasing Social Engagement in Young Children With Autism Spectrum Disorders Using Video Self-Modeling. *School Psychology Review, 36*(1), 80–90. https://doi.org/10.1080/02796015.2007.12087953

Bierman, K. L., & Torres, M. (2016). Promoting the development of executive functions through early education and prevention programs. In J. A. Griffin, P. McCardle, & L. S. Freund (Eds.), *Executive function in preschool-age children: Integrating measurement, neurodevelopment, and translational research.* (pp. 299–326). American Psychological Association. https://doi.org/10.1037/14797-014

Britto, P. R., Lye, S. J., Proulx, K., Yousafzai, A. K., Matthews, S. G., Vaivada, T., Perez-Escamilla, R., Rao, N., Ip, P., Fernald, L. C. H., MacMillan, H., Hanson, M., Wachs, T. D., Yao, H., Yoshikawa, H., Cerezo, A., Leckman, J. F., & Bhutta, Z. A. (2017). Nurturing care: Promoting early childhood development. *The Lancet, 389*(10064), 91–102. https://doi.org/10.1016/S0140-6736(16)31390-3

Bundy, A. C., Naughton, G., Tranter, P., Wyver, S., Baur, L., Schiller, W., Bauman, A., Engelen, L., Ragen, J., Luckett, T., Niehues, A., Stewart, G., Jessup, G., & Brentnall, J. (2011). The sydney playground project: Popping the bubblewrap - unleashing the power of play: a cluster randomized controlled trial of a primary school playground-based intervention aiming to increase children's physical activity and social skills. *BMC Public Health*, *11*(1), 680. https://doi.org/10.1186/1471-2458-11-680

Cohen, D. (2018). *The Development of Play* (4th ed.). Routledge. https://doi.org/10.4324/9781315121703

Cologon, K. (2012). Confidence in their own ability: Postgraduate early childhood students examining their attitudes towards inclusive education. *International Journal of Inclusive Education*, *16*(11), 1155–1173. https://doi.org/10.1080/13603116.2010.548106

Cook, B. G., & Cook, L. (2008). Nonexperimental Quantitative Research and Its Role in Guiding Instruction. *Intervention in School and Clinic*, *44*(2), 98–104. https://doi.org/10.1177/1053451208321565

Copple, C. (2003). Fostering young children's representation, planning, and reflection: A focus in three current early childhood models. *Journal of Applied Developmental Psychology*, *24*(6), 763–771. https://doi.org/10.1016/j.appdev.2003.09.007

Craig-Unkefer, L. A., & Kaiser, A. P. (2002). Improving the Social Communication Skills of At-Risk Preschool Children in a Play Context. *Topics in Early Childhood Special Education*, *22*(1), 3–13. https://doi.org/10.1177/027112140202200101

Dillon, A., & Gabbard, R. (1998). Hypermedia as an Educational Technology: A Review of the Quantitative Research Literature on Learner Comprehension, Control, and Style. *Review of Educational Research*, *68*(3), 322–349. https://doi.org/10.3102/00346543068003322

Doll, B. (1996). Children Without Friends: Implications for Practice and Policy. *School Psychology Review*, *25*(2), 165–183. https://doi.org/10.1080/02796015.1996.12085809

Engle, P. L., & Black, M. M. (2008). *The Effect of Poverty on Child Development and Educational Outcomes. Annals of the New York Academy of Sciences*, *1136*(1), 243–256. https://doi.org/10.1196/annals.1425.023

Engle, P. L., Fernald, L. C., Alderman, H., Behrman, J., O'Gara, C., Yousafzai, A., De Mello, M. C., Hidrobo, M., Ulkuer, N., Ertem, I., & Iltus, S. (2011). Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *The Lancet*, *378*(9799), 1339–1353. https://doi.org/10.1016/S0140-6736(11)60889-1

Eshach, H., & Fried, M. N. (2005). Should Science be Taught in Early Childhood? *Journal of Science Education and Technology*, *14*(3), 315–336. https://doi.org/10.1007/s10956-005-7198-9

File, N. (1994). Children's play, teacher-child interactions, and teacher beliefs in integrated early childhood programs. *Early Childhood Research Quarterly*, *9*(2), 223–240. https://doi.org/10.1016/0885-2006(94)90007-8

Harjusola-Webb, S., & Hubbell, S. P. (n.d.). *Increasing Prosocial Behaviors of Young Children With Disabilities in Inclusive Classrooms Using a Combination of Peer-Mediated Intervention and Social Narratives.*

Hedges, H. (2000). Teaching in Early Childhood: Time to Merge Constructivist Views so Learning through Play Equals Teaching through Play. *Australasian Journal of Early Childhood*, *25*(4), 16–21. https://doi.org/10.1177/183693910002500404

Hemmeter, M. L., Ostrosky, M., & Fox, L. (2006). Social and Emotional Foundations for Early Learning: A Conceptual Model for Intervention. *School Psychology Review*, *35*(4), 583–601. https://doi.org/10.1080/02796015.2006.12087963

Hensel, N. H. (1991). Social leadership skills in young children. *Roeper Review*, *14*(1), 4–6. https://doi.org/10.1080/02783199109553370

Hoffman, L. W. (1972). Early Childhood Experiences and Women's Achievement Motives. *Journal of Social Issues*, *28*(2), 129–155. https://doi.org/10.1111/j.1540-4560.1972.tb00022.x

Holmes, R. M., Romeo, L., Ciraola, S., & Grushko, M. (2015). The relationship between creativity, social play, and children's language abilities. *Early Child Development and Care*, *185*(7), 1180–1197. https://doi.org/10.1080/03004430.2014.983916

Howe, K., & Eisenhart, M. (1990). Standards for Qualitative (and Quantitative) Research: A Prolegomenon. *Educational Researcher*, *19*(4), 2–9. https://doi.org/10.3102/0013189X019004002

Howe, M. J. A., Davidson, J. W., Moore, D. G., & Sloboda, J. A. (1995). Are There Early Childhood Signs of Musical Ability? *Psychology of Music*, *23*(2), 162–176. https://doi.org/10.1177/0305735695232004

Jamison, K. R., Forston, L. D., & Stanton-Chapman, T. L. (2012). Encouraging Social Skill Development through Play in Early Childhood Special Education Classrooms. *Young Exceptional Children*, *15*(2), 3–19. https://doi.org/10.1177/1096250611435422

Jennings, K. D. (1975). People versus object orientation, social behavior, and intellectual abilities in preschool children. *Developmental Psychology*, *11*(4), 511–519. https://doi.org/10.1037/h0076679

Jensen, K. B. (Ed.). (2013). *A Handbook of Media and Communication Research* (0 ed.). Routledge. https://doi.org/10.4324/9780203357255

Kamaruddin, I., Tannady, H., & Aina, M. (2023). *The Efforts to Improve Children's Motoric Ability By Utilizing The Role of Traditional Games. 05*(03).

Katherine Magnuson & Greg J. Duncan. (2016). Can Early Childhood Interventions Decrease Inequality of Economic Opportunity? *RSF: The Russell Sage Foundation Journal of the Social Sciences*, *2*(2), 123. https://doi.org/10.7758/rsf.2016.2.2.05

Kazakoff, E. R., Sullivan, A., & Bers, M. U. (2013). The Effect of a Classroom-Based Intensive Robotics and Programming Workshop on Sequencing Ability in Early

Childhood. *Early Childhood Education Journal*, *41*(4), 245–255. https://doi.org/10.1007/s10643-012-0554-5

Kitchener, R. F. (1990). DO CHILDREN THINK PHILOSOPHICALLY? *Metaphilosophy*, *21*(4), 416–431. https://doi.org/10.1111/j.1467-9973.1990.tb00541.x

Lerner, J. W. (1989). Educational Interventions in Learning Disabilities. *Journal of the American Academy of Child & Adolescent Psychiatry*, *28*(3), 326–331. https://doi.org/10.1097/00004583-198905000-00004

Lifter, K., Sulzer-Azaroff, B., Anderson, S. R., & Cowdery, G. E. (1993). Teaching Play Activities to Preschool Children with Disabilities: The Importance of Developmental Considerations. *Journal of Early Intervention*, *17*(2), 139–159. https://doi.org/10.1177/105381519301700206

Luborsky, L., Auerbach, A. H., Chandler, M., Cohen, J., & Bachrach, H. M. (1971). Factors influencing the outcome of psychotherapy: A review of quantitative research. *Psychological Bulletin*, *75*(3), 145–185. https://doi.org/10.1037/h0030480

McCabe, P. C., & Altamura, M. (2011). Empirically valid strategies to improve social and emotional competence of preschool children. *Psychology in the Schools*, *48*(5), 513–540. https://doi.org/10.1002/pits.20570

Mistry, K. B., Minkovitz, C. S., Riley, A. W., Johnson, S. B., Grason, H. A., Dubay, L. C., & Guyer, B. (2012). A New Framework for Childhood Health Promotion: The Role of Policies and Programs in Building Capacity and Foundations of Early Childhood Health. *American Journal of Public Health*, *102*(9), 1688–1696. https://doi.org/10.2105/AJPH.2012.300687

Pahl, K. M., & Barrett, P. M. (2007). The Development of Social–Emotional Competence in Preschool-Aged Children: An Introduction to the Fun FRIENDS Program. *Australian Journal of Guidance and Counselling*, *17*(1), 81–90. https://doi.org/10.1375/ajgc.17.1.81

Pellegrini, A. D., & Smith, P. K. (1998). The Development of Play During Childhood: Forms and Possible Functions. *Child Psychology and Psychiatry Review*, *3*(2), 51–57. https://doi.org/10.1017/S1360641798001476

Prezza, M., Pilloni, S., Morabito, C., Sersante, C., Alparone, F. R., & Giuliani, M. V. (2001). The influence of psychosocial and environmental factors on children's independent mobility and relationship to peer frequentation. *Journal of Community & Applied Social Psychology*, *11*(6), 435–450. https://doi.org/10.1002/casp.643

Richter, L. M., Daelmans, B., Lombardi, J., Heymann, J., Boo, F. L., Behrman, J. R., Lu, C., Lucas, J. E., Perez-Escamilla, R., Dua, T., Bhutta, Z. A., Stenberg, K., Gertler, P., & Darmstadt, G. L. (2017). Investing in the foundation of sustainable development: Pathways to scale up for early childhood development. *The Lancet*, *389*(10064), 103–118. https://doi.org/10.1016/S0140-6736(16)31698-1

Stagnitti, K., Malakellis, M., Kenna, R., Kershaw, B., Hoare, M., & De Silva-Sanigorski, A. (2011). Evaluating the Feasibility, Effectiveness and Acceptability of an Active Play

Intervention for Disadvantaged Preschool Children: A Pilot Study. *Australasian Journal of Early Childhood, 36*(3), 66–73. https://doi.org/10.1177/183693911103600309

Stagnitti, K., O'Connor, C., & Sheppard, L. (2012). Impact of the Learn to Play program on play, social competence and language for children aged 5-8 years who attend a specialist school. *Australian Occupational Therapy Journal, 59*(4), 302–311. https://doi.org/10.1111/j.1440-1630.2012.01018.x

Sürücü, L., & Maslakçi, A. (2020). VALIDITY AND RELIABILITY IN QUANTITATIVE RESEARCH. *Business & Management Studies: An International Journal, 8*(3), 2694–2726. https://doi.org/10.15295/bmij.v8i3.1540

Teranishi, R. T. (2007). Race, ethnicity, and higher education policy: The use of critical quantitative research. *New Directions for Institutional Research, 2007*(133), 37–49. https://doi.org/10.1002/ir.203

Trawick-Smith, J. (1998). Why Play Training Works: An Integrated Model for Play Intervention. *Journal of Research in Childhood Education, 12*(2), 117–129. https://doi.org/10.1080/02568549809594878

Trusty, J., Thompson, B., & Petrocelli, J. V. (2004). Practical Guide for Reporting Effect Size in Quantitative Research in the *Journal of Counseling & Development. Journal of Counseling & Development, 82*(1), 107–110. https://doi.org/10.1002/j.1556-6678.2004.tb00291.x

Van Zomeren, M., Postmes, T., & Spears, R. (2008). Toward an integrative social identity model of collective action: A quantitative research synthesis of three socio-psychological perspectives. *Psychological Bulletin, 134*(4), 504–535. https://doi.org/10.1037/0033-2909.134.4.504

Waldfogel, J., & Washbrook, E. (2011). Early Years Policy. *Child Development Research, 2011*, 1–12. https://doi.org/10.1155/2011/343016

Watson, R. (2015). Quantitative research. *Nursing Standard, 29*(31), 44–48. https://doi.org/10.7748/ns.29.31.44.e8681

Wilson, R., & Wilson, R. (2007). *Nature and Young Children: Encouraging Creative Play and Learning in Natural Environments* (0 ed.). Routledge. https://doi.org/10.4324/9780203940723

Wylie, R. E., Devoney, C., Guralnick, M. J., & Rubin, H. (1974). Research: Integrating Handicapped and Nonhandicapped Preschool Children: Effects on Social Play. *Childhood Education, 50*(6), 360–364. https://doi.org/10.1080/00094056.1974.10728208

Yang, W., Ng, D. T. K., & Gao, H. (2022). Robot programming versus block play in early childhood education: Effects on computational thinking, sequencing ability, and self-regulation. *British Journal of Educational Technology, 53*(6), 1817–1841. https://doi.org/10.1111/bjet.13215

Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., Golinkoff, R. M., COMMITTEE ON PSYCHOSOCIAL ASPECTS OF CHILD AND FAMILY HEALTH, COUNCIL ON COMMUNICATIONS AND MEDIA, Baum, R., Gambon, T., Lavin, A., Mattson, G., Wissow, L., Hill, D. L., Ameenuddin, N., Chassiakos, Y. (Linda) R., Cross, C., Boyd, R., Mendelson, R., Moreno, M. A., … Smith, J. (2018). The Power of Play: A Pediatric Role in Enhancing Development in Young Children. *Pediatrics*, *142*(3), e20182058. https://doi.org/10.1542/peds.2018-2058

Yoo, G. E., & Kim, S. J. (2018). Dyadic Drum Playing and Social Skills: Implications for Rhythm-Mediated Intervention for Children with Autism Spectrum Disorder. *Journal of Music Therapy*, *55*(3), 340–375. https://doi.org/10.1093/jmt/thy013

Zigler, E., & Trickett, P. K. (1978). IQ, social competence, and evaluation of early childhood intervention programs. *American Psychologist*, *33*(9), 789–798. https://doi.org/10.1037/0003-066X.33.9.789

Zyphur, M. J., & Pierides, D. C. (2017). Is Quantitative Research Ethical? Tools for Ethically Practicing, Evaluating, and Using Quantitative Research. *Journal of Business Ethics*, *143*(1), 1–16. https://doi.org/10.1007/s10551-017-3549-8