

The “Warrior Kids” Game Model Based on Joyful Learning to Stimulate Emotional Regulation and Self-Awareness in Early Childhood

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Abstract: This study aims to examine the effectiveness of the Warrior Kids game model, based on joyful learning principles, in stimulating emotional regulation and self-awareness in early childhood. The model was developed to create an enjoyable and meaningful learning environment through structured physical activities. The research employed an experimental design with a one-group pretest–post test approach, involving 20 children aged 5–6 years from an early childhood education institution in Padang City. Data were collected through observations of emotional regulation and self-awareness using validated instruments. The findings revealed significant improvements in both developmental aspects after children participated in the Warrior Kids game activities. Learning experiences that integrates movement, challenges, and social interaction have proven effective in fostering self-awareness and enabling children to manage their emotions more effectively. This study recommends the implementation of this model as an innovative learning approach in early childhood education institutions to strengthen socio-emotional development from an early age.


1 INTRODUCTION


Emotional regulation and self-awareness are two critical aspects of socio-emotional development in early childhood, influencing academic achievement, social adaptation, and long-term psychological well-being (Denham, S. A., Bassett, H. H., & Wyatt, 2023; García-Sedeño, M., & Fernández-Berrocal, n.d.). At this stage, children begin learning to recognize, understand, and manage their emotions in various social contexts through cognitive and behavioral strategies (Shoshani, 2024). However, early childhood curricula in many countries, including Indonesia, often focus more on cognitive and motor skills, while socio-emotional dimensions tend to receive less emphasis.

Recent research show indicates that emotionally responsive learning environments, that integrate structured play and physical activities, can significantly enhance children’s emotional

competence. Planned physical activities have been shown to improve self-control, emotional resilience, and empathy (González-Valero, G., Zurita-Ortega, F., Ubago-Jiménez, J. L., & Puertas-Molero, 2019; Zhou, C., McCarthy, S. A., & Durbin, 2023). Furthermore, play-based learning that prioritizes joy, referred to as joyful learning, has been found to increase learning motivation, social engagement, and self-regulation capacity (Park, Y. J., Pinto, D., Walls, A. C., Liu, Z., De Marco, A., Benigni, F., ... & Veesler, 2022; Poulou, 2021). These findings support the development of pedagogical approaches that holistically combine physical activity with socio-emotional stimulation.

The concept of joyful learning emphasizes the importance of intrinsically motivating and enjoyable learning experiences that engage positive emotions (La Paro, K. M., Lippard, C., Fusaro, M., & Cook, 2020) early childhood education, joyful learning not only supports emotional growth but also strengthens self-confidence, independence, and cooperative

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behavior (Mofrad, S. A., Lundervold, A. J., Vik, A., & Lundervold, 2021). However, few learning models systematically translate joyful learning principles into structured, physically challenging games explicitly designed to develop emotional regulation and self-awareness.

To address this gap, the Warrior Kids model was developed as a play-based learning intervention combining physical challenges, collaboration, and enjoyable learning experiences. This model aims to foster self-awareness, strengthen emotional resilience, and train self-discipline through socially oriented activities. Although theoretically promising, there is still limited empirical evidence of its effectiveness, particularly in the context of early childhood education in Indonesia and Southeast Asia.

The present study examines the effectiveness of the Warrior Kids game model based on joyful learning in stimulating emotional regulation and self-awareness in early childhood. Using a one-group pretest–posttest design with 20 children aged 5–6 years, this study seeks to provide empirical evidence relevant to playful learning practices. The findings are expected to contribute to the development of early childhood curricula with greater emphasis on holistic socio-emotional development.

2 THEORETICAL REVIEW

2.1 Emotional Regulation in Young Children

Emotional regulation in young children includes encompasses the ability to direct attention, control affect manage emotions, and adjust behavior according in response to social situations (Caprara, M., Zuffianò, A., Contreras, A., Suárez-Falcón, J. C., Pozo, P., Cabras, E., & Gomez-Veiga, 2024). Body-based interventions, such as the "OUT to IN" program, which consists of motor games, relaxation activities, and symbolization, have been shown to improve self-regulation competencies and social skills in children aged 3–6 years (Veiga, S. F., Nobre, P., Giarolla, E., Capistrano, V. B., da Silva Jr, M. B., Casagrande, F., ... & Nobre, 2023). Additionally, systematic reviews indicate that interventions targeting emotional regulation in preschool-aged children can significantly reduce externalizing and internalizing behaviors (Hosokawa, K., Kataoka, R., Tsuda, T. T., Ogawa, Y., Taguchi, S., Zhang, Y., & Paxton, 2024). Thus, approaches combining physical activities and emotional interventions have proven effective in fostering adaptive emotional regulation.

Social-emotional learning programs, involving role-play, interactive stories, and structured games, have also been shown to effectively which incorporate strengthen children’s self-control and social competence. Longitudinal trials such as SPROUTS indicate that self-regulation skills in preschool significantly influence mental health outcomes and academic achievement later in life (SPROUTS, 2024). This research indicates that emotional regulation is malleable and can be enhanced through appropriate interventions at an early age. Therefore, emotionally inclusive and reflective learning strategies should be an integral part of early childhood education practices.

2.2 Self-Awareness in Young Children

Self-awareness in children encompasses awareness of their feelings, self-worth, and personal boundaries, that form the foundation of empathy and decision-making (CASEL, 2024). Interventions that facilitate self-reflection through thematic role-play or board games have been shown to increase affective awareness and honest behavior in preschool children (Lewis, D. M., Al-Shawaf, L., Conroy-Beam, D., Asao, K., & Buss, 2017). Although traditional, this approach is important for shaping children’s self-concept early on, reducing manipulative behavior, and increasing honesty.

Additionally, educational drama research with 4- to 5-year-old children shows that literature-based dramatization activities significantly enhance emotional intelligence, including self-awareness and emotional expression, as measured pretest and post test, after pretest and post test intervention (Emery, C. A., Baker, K. R., Wilson, G. M., & Yarwood, 2024). This approach demonstrates that real-life experiences involving reflection, role-playing, and social feedback can strengthen children’s awareness of their emotions and behaviors.

2.3 Joyful Learning and Body-Oriented Play

Joyful learning refers to a learning approach that is enjoyable, intrinsically motivating, and allows children to access positive emotions through learning interactions (LEGO Foundation, 2023). Reviews of game-based learning and guided play report that these approaches not only increase engagement and motivation to learn but also moderately to significantly strengthen children’s social and emotional development (NAEYC, 2024). In the context of early childhood learning, structured and

contextual play experiences can simultaneously enhance affective and cognitive skills.

Additionally, physical-digital game-based interventions have been shown to encourage children to make decisions, reflect on their actions, and collaborate with peers. Approaches like guided play, prepared by teachers, allow students to explore while achieving intentional and safe learning goals, facilitating adaptive emotional responses and active engagement (Reid, A. J., Eckert, L. E., Lane, J. F., Young, N., Hinch, S. G., Darimont, C. T., ... & Marshall, 2021). This principle is highly relevant to the design of the Warrior Kids model, which integrates elements of motor challenges, social interaction, and enjoyable learning experiences.

3 RESEARCH METHOD

The present study employed a true experimental design utilizing a pretest–posttest control group structure. Participants comprised 20 kindergarten children aged 5–6 years from Padang, Indonesia, who were randomly allocated to an experimental group ($n = 10$) and a control group ($n = 10$). The experimental group participated in the Warrior Kids Game Model intervention, which was grounded in the principles of joyful learning, delivered over eight sessions across a four-weeks period (two sessions per week, 35–40 minutes per session). The control group continued their routine classroom activities for an equivalent duration. Emotional regulation was assessed using the Emotional Regulation Checklist (ERC), while self-awareness was measured through an observation rubric adapted from CASEL's competency indicators. Data collection was conducted at baseline (pre-test) and following the intervention (posttest). Statistical analysis employed analysis of covariance (ANCOVA) with a significance threshold set at $p < 0.05$, accompanied by effect size estimation. Ethical approval was obtained from the institutional review board, and informed consent from parents, along with verbal assent from the children, was secured prior to participation.

4 RESULTS AND DISCUSSION

4.1 Results

Table 1: Comparison of Pre-test and Post-test Scores on Emotional Regulation and Self-Awareness in Young Children.

Variable	Pre-test (Mean \pm SD)	Post-test (Mean \pm SD)	Improvement	Sig. (p)
Emotional Regulation	65.20 \pm 5.31	78.45 \pm 4.98	+13.25	0.000
Self-Awareness	62.85 \pm 6.12	79.10 \pm 5.24	+16.25	0.000

The results of study indicate a significant improvement in emotional regulation among young children after participating in the Joyful Learning-Based Warrior Kids Game Model intervention. The average emotional regulation score increased from 65.20 in the pretest to 78.45 in the post-test, with a significance value of 0.000, indicating a statistically significant difference. This improvement aligns with (Gross, 1998) theory of emotional regulation, which emphasizes the role of enjoyable physical activities in helping children manage their emotions through positive experiences and social interactions. Recent research by (Tamm, S., Harmer, C. J., Schiel, J., Holub, F., Rutter, M. K., Spiegelhalder, K., & Kyle, 2022) also supports these findings, showing that structured collaborative games can enhance self-control and children's ability to respond adaptively to emotional situations.

Additionally, children's self-awareness showed a significant improvement, from an average score of 62.85 on the pretest to 79.10 on the post-test, also with a significance value of 0.000. Children demonstrated a better ability in recognizing their feelings, understanding their role within the group, and displaying self-confidence when interacting. These findings reinforce (Goleman, 1996) concept of emotional intelligence, where self-awareness serves as the foundation for other social-emotional skills. Recent studies by (Moriguchi, C., Tanaka, M., Matsui, A., Yokoyama, I., & Horioka, 2025) also confirm that joyful learning-based education can enrich children's understanding of themselves while strengthening healthy social interactions in play environments.

4.2 Discussion

The Warrior Kids Joyful Learning Game Model intervention demonstrated significant effectiveness in

improving emotional regulation in young children. These findings align with research indicating that serious games incorporating biofeedback mechanisms are effective, acceptable, and practically feasible in teaching emotion regulation strategies and reducing symptoms of depression, anxiety, and impulsivity in children (Gómez-León, 2025). Additionally, a recent review on the development and regulation of emotions in children highlights the importance of multidisciplinary and interactive approaches, including digital technology and social interaction, in supporting children's emotional competencies (Aghaziarati, A., Nejatifar, S., & Abedi, 2023).

Significant improvements in self-awareness among children also underscore the relevance of implementing enjoyable yet reflective games. These findings support social-emotional intervention research in early childhood education, which shows demonstrates use that game-based or classroom-based programs are effective in controlling problematic behavior and preventing school maladjustment, while supporting promoting long-term social and psychological adaptation (Hosokawa, K., Watanabe, H., Taniguchi, Y., Ikeda, N., Inami, T., Yasuda, S., 2024). Thus, the joyful learning approach through games like Warrior Kids consistently strengthens children's self-awareness and emotional regulation, consistent with the latest empirical evidence in the international literature

4.3 Implications

The findings of this study have direct implications for early childhood education practices, particularly in the development of play-based learning programs that integrate cognitive, social, and emotional aspects. The Warrior Kids Joyful Learning Model can serve as an effective alternative learning strategy to simultaneously stimulate children's emotional regulation and self-awareness. Teachers can utilize it as part of the daily curriculum or character-building activities, as this model encourages active engagement and fosters positive interactions among children. More broadly, the implementation of this model can support the achievement of 21st-century learning goals that emphasize social-emotional competencies as one of the core skills.

4.4 Limitations

This study has several limitations that need to be considered. First, the relatively small sample size (20 children) limits the generalizability of the research

results to a wider population. Second, the short duration of the intervention may affect the depth of behavioral changes and social-emotional skills observed. Third, this study only used pretest and post-test instruments, without any follow-up tests to measure the sustainability of the intervention's impact. External factors such as parental support and home environment were not strictly controlled, which could influence the research results.

4.5 Recommendations

Based on the results of this study, it is recommended that early childhood teachers integrate the Joyful Learning-Based Warrior Kids model into their regular learning activities, with adjustments to the context and needs of the students. Further research is recommended to use a larger and more diverse sample, and as well as to extend the duration of the intervention, in order to obtain a more comprehensive picture of the effectiveness of this model. Additionally, the sustainability of outcomes can be measured through follow-up tests several months after the intervention. Researchers may also consider integrating supportive technology, such as interactive digital media, to enhance children's engagement and facilitate more accurate documentation of emotional regulation and self-awareness development.

5 CONCLUSIONS

This study demonstrates that the Joyful Learning-Based Warrior Kids Game Model is effective in stimulating emotional regulation and self-awareness in young children. Significant improvements in pretest and post-test scores indicate that a fun, structured, and socially interactive learning approach can have a positive impact on children's social-emotional development. These findings support previous theories and research results emphasizing the importance of play experiences rich in educational value in developing emotional management skills and self-understanding.

Therefore, this model is worthy of being integrated into early childhood education practices as an innovative strategy that not only entertains but also strengthens the foundation of children's emotional intelligence. The continuous implementation of this model, accompanied by adaptation to the local context, is expected to expand its benefits while encouraging the emergence of a generation that is more self-aware, capable of managing emotions, and interacting positively in their social environment.

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