International Journal of Arts and Social Science
ISSN: 2581-7922,
Volume 9 Issue 4, April 2026

Effect of Situated Peer Intervention in LEGO Games on Social Behavior in Children with Autism Using A Composite Single-Subject Design in A School Setting

Luo Yi, Wang Xin'er, Zang Sicheng, Xia Chenyi, Fei Xinyue, Su Jingru

Zhejiang Normal University, Jinhua 321004, Zhejiang, China

Abstract: This study aimed to investigate the impact of integrating campus life scenarios into peer-mediated LEGO games on social behaviors in inclusive kindergarten senior class children with autism. A composite single-subject design combining multi-baseline cross-subject and A-B-A withdrawal was employed, with 3 inclusive senior class children with autism and 6 typical peers selected as study subjects. The intervention process centered on the "Engineer, Provider, Builder" role-reliance model, incorporating LEGO task cards with explicit campus contexts. Results analysis demonstrated that after contextualized LEGO intervention, all three subjects exhibited immediate and significant improvements in both social initiative behaviors and social response behaviors, which maintained stable high levels during the later intervention phase. Concurrently, the frequency of peer cues dependency showed a steep decline. In the A2 withdrawal phase, target social behaviors demonstrated strong maintenance effects. The findings indicate that campus-contextualized peer-mediated LEGO games enhance social initiative and responsiveness in senior class children with autism, promote social independence, and exhibit ecological validity in real inclusive education settings.

Keywords: Autism Spectrum Disorder; Peer Intervention; LEGO Games; Situational Intervention; Inclusive Education; Single Subject Design

I. Problem Statement

1.1 Social Deficits and Challenges in Inclusive Education for Children with Autism Spectrum Disorder

Autism spectrum disorder is a neurodevelopmental disorder (American Psychiatric Association, 2013) characterized primarily by difficulties in social interaction and communication, as well as restricted and repetitive interests and behaviors. Among its various features, social communication impairments stand out prominently,

manifesting as children's inability to initiate or appropriately respond to interactions during conversations, and their difficulty in maintaining sustained and appropriate communication with others across different social contexts. Due to these core deficits, many children with autism often remain relatively isolated in peer interactions. Even in inclusive education settings, they typically exhibit limited participation in reciprocal social interactions.

The underdevelopment of social skills further limits children's ability to establish positive and stable peer relationships throughout their school years. Research indicates that children with autism do not spontaneously initiate social interactions with peers in group settings unless social skills are explicitly identified as intervention targets and systematically trained (McConnell, 2002). Overall, the inherent deficits in social interaction among children with autism have persistent and profound impacts on peer engagement, posing significant challenges for inclusive education practices (White et al., 2007). Therefore, it is essential to develop and implement targeted social skills interventions in inclusive education settings to facilitate the development of appropriate social interaction behaviors in children with autism. Early implementation of such interventions can also enhance their future social integration levels and peer acceptance capabilities.

1.2 Advantages and Limitations of Peer Intervention in LEGO Games

In recent years, LEGO collaborative construction has evolved into a structured social intervention format and been widely applied in research on social skill enhancement for children with autism. Systematic reviews indicate that LEGO interventions provide predictable and low-stress interactive environments for autistic children through clearly defined task structures, role assignments, and collaborative objectives, thereby improving their social engagement and interaction frequency. Studies implementing LEGO interventions in school settings have also increased (Angelis et al., 2024), demonstrating that peer interventions not only exhibit high feasibility but also effectively promote social behaviors in children with autism.

However, existing LEGO intervention studies in school settings predominantly employ generic or decontextualized construction themes, with insufficient attention paid to whether the intervention content aligns with children's authentic school-life experiences. Reviews on inclusive education (Rotheram-Fuller et al., 2010) indicate that social difficulties faced by autistic children in school often manifest in specific contexts such as classroom rule comprehension, turn-taking during waiting periods, and peer negotiation. If the social interaction scenarios in intervention activities lack direct connections to real school environments, the acquired social behaviors may struggle to transfer into daily school activities. This "decontextualized" training model, to some extent, limits the sustainability and generalization of intervention effects in authentic ecological settings.

1.3 The starting point of this study: Contextual improvement of intervention content

Based on the aforementioned practical challenges and theoretical reflections, this study attempts to introduce campus life scenarios into the existing peer-intervention LEGO collaborative construction framework, systematically contextualizing LEGO task design. The research aims to systematically integrate China's campus life scenarios (such as classroom layout, classroom order, rotation and queuing rules, etc.) into LEGO task design, with the goal of building a bridge from intervention environments to real campus life for children with autism.

It is important to emphasize that the core attribute of this study is an empirical improvement-oriented research. Its primary objective is not to merely verify whether the LEGO intervention itself is "effective," but rather to further explore whether the contextual appropriateness of the intervention content affects the actual performance of the intervention outcomes, based on existing sufficient research evidence. Through this shift in perspective, the study aims to genuinely enhance the application value and ecological validity of this intervention model in the local campus environment of China.

1.4 Research Objectives and Questions

This study focuses on intervention targets for autistic children in inclusive kindergarten senior classes. At this developmental stage, children are transitioning from play-based learning approaches to school life centered on classroom rules and peer collaboration, which holds critical significance for social skill development. In inclusive education practices, senior classes represent the period when autistic children face the greatest challenges in peer interaction and pressure to adapt to classroom rules.

Based on this, the study poses the following core research question: In integrated kindergarten environments, compared to conventional theme-based peer intervention LEGO collaborative construction activities, can systematically incorporating kindergarten and school-life contexts (such as classroom layout, classroom order, turn-taking and queuing rules) into LEGO task design more effectively enhance social initiative behaviors and social response behaviors in children with autism?

II. research technique

2.1 Study Subjects and Implementation Context

This study focuses on autism spectrum disorder (ASD) children in the senior kindergarten class of inclusive education programs. Children at this developmental stage are undergoing a critical transition period from free play-based learning to structured classroom environments emphasizing rules and peer collaboration, which plays a decisive role in their social adaptation and communication skills development. Conducted within authentic inclusive education settings, interventions are seamlessly integrated into children's daily routines. This ecological implementation approach effectively reduces ASD children's anxiety in unfamiliar environments, enhances the study's ecological validity, and facilitates the natural generalization of targeted behaviors acquired during interventions to routine kindergarten life.

2.2 experimental design

The core objective of this study is to investigate whether variations in contextual intervention conditions induce systematic changes in social behaviors among individuals with autism, rather than merely comparing average differences between groups. Therefore, we adopted a composite single-subject experimental design combining "multi-baseline cross-subject" and "A-B-A withdrawal" approaches (Ledford & Gast, 2018). On one hand, the A-B-A withdrawal design (baseline phase A1-intervention phase B-withdrawal phase A2) enables direct assessment of immediate behavioral impacts from intervention introduction and withdrawal within individuals,

providing robust internal causal inference. On the other hand, the multi-baseline cross-subject design effectively eliminates confounding factors such as temporal variations or natural maturation by introducing interventions at staggered time points across subjects, thereby verifying cross-individual replicability of intervention effects. This composite design ensures scientific causal inference while aligning with practical constraints in inclusive education settings—limited sample sizes and the need to accommodate daily teaching schedules—achieving optimal balance between internal validity and ecological validity.

2.3 Intervention Program Design

This study employed a highly structured design for intervention materials and interactive mechanisms:

Intervention materials primarily consist of three categories. First, LEGO bricks designed for campus scenarios, including classrooms (with lecterns, desks, and chairs), nap areas (beds and blankets), corridors, and queuing zones to simulate real school environments. Second, task cards that set one core social skill objective per activity (e.g., requesting permission, taking turns, borrowing items, or expressing disagreement) and present them with visual illustrations to reduce cognitive load. Finally, reinforcement materials such as stickers, red flowers, and dedicated project display areas.

Intervention Mechanism: The intervention was implemented through structured group collaboration (Koegel et al., 2008), with each group consisting of three children (one ASD child and two typical peers). Group members were explicitly assigned to three highly interdependent roles: "engineer," "provider," and "builder," with ASD children prioritized to assume the "engineer" role responsible for handling blueprints. For peer intervention strategies, pre-trained peers provided social modeling, cues, and reinforcement based on task cards, while adults offered minimal support only when systematic cues failed. The entire intervention process avoided using pretend or role-playing language, instead emphasizing concrete "tasks," "rules," and "steps" tailored to the cognitive characteristics of ASD children (Wichnick et al., 2010).

2.4 Variable Definition and Behavioral Observation Indicators

The independent variable in this study was "campus contextualized peer intervention in LEGO cooperative construction activities." Based on established measurement paradigms in the literature, the following three types of behaviors were selected as dependent variables:

Social proactive behavior: Refers to the initiative of ASD children to engage in social interactions with peers without obvious external prompts. Operational definitions include: proactively initiating verbal communication (e.g., requests, proposals, inquiries); actively guiding peers' attention through gestures or eye contact; and proactively inviting peers to participate in activities.

Social response behavior: Refers to appropriate responses exhibited by children with ASD after peers initiate interactions. Operational definitions include: responding to verbal/nonverbal behaviors of peers; cooperating with peers to complete building tasks according to instructions; demonstrating turn-taking, waiting, and negotiation during interactions.

Peer prompting frequency: As a reverse indicator of social independence, it refers to the total number of times ASD children require explicit prompts from peers (e.g., repeated instructions or action demonstrations) to continue participating in interactions during activities.

2.5 Data Collection and Reliability Testing

To ensure the accuracy and objectivity of behavioral data, fixed camera positions were employed throughout all experimental phases (A1, B, A2) to record 30-40 minute LEGO activity sessions, enabling clear capture of micro-level interactions between participants and peers. All behavioral data were processed through offline sequential counting and coding based on video recordings, documenting the total frequency of target behaviors during each session to eliminate omissions from on-site documentation. After completing data collection at each phase, researchers randomly selected 30% of total recordings for secondary coding by independent coders to calculate the Interobserver Agreement Coefficient (IOA), thereby ensuring the reliability of research findings.

III. Experimental implementation process

This study was conducted strictly in accordance with standardized procedures for multi-baseline cross-subject and A-B-A withdrawal experimental designs. The entire experimental cycle was divided into three consecutive phases: baseline period (A1), intervention period (B), and withdrawal period (A2). Social validity assessment was performed after the experiment concluded (What Works Clearinghouse [WWC], 2022).

3.1 Baseline period (A1)

During the baseline phase, researchers observed participants 'target behaviors without implementing any interventions. To capture authentic social interactions in natural settings, they conducted daily video recordings of free play sessions while tracking target behavior occurrences, establishing baseline data for behavioral analysis. Throughout this stage, no interventions, prompts, or reinforcements were applied to participants' building block play activities. Utilizing a multi-baseline cross-subject design, three autistic preschoolers entered the experimental intervention period at staggered intervals. Participants were only admitted to the experimental phase after data stabilization—defined as three consecutive days showing consistent trends with minimal variability.

3.2 Dry expectation (B)

During the intervention phase, participants were engaged with LEGO-based school scenario materials four times weekly, with each session lasting 15–20 minutes. Researchers conducted video recordings and documentation throughout the sessions to observe participants 'performance of target behaviors during interventions. The study strictly adhered to the predefined protocol: participants formed structured groups consisting of one participant and two peer partners, assigned roles as "engineer, provider, and builder," and collaborated on task cards depicting specific school scenarios. During interventions, peer partners provided support and modeling based on task cards, facilitating autistic preschoolers' practice of social initiative and responsive behaviors within simulated contexts.

3.3 Withdrawal period (A2)

During this phase, no interventions are implemented. This involves completely removing LEGO intervention materials, task cards, and highly structured role assignments that incorporate explicit school scenarios, returning to baseline free play conditions. Researchers continue monitoring target behaviors through video recordings until data stabilization is achieved. The withdrawal period serves as a critical evaluation window to determine whether autistic preschoolers can effectively maintain socially active and responsive behaviors acquired during intervention after removing external contextual support and peer scaffolding, thereby assessing the internalization of intervention effects.

3.4 Social validity assessment

To comprehensively evaluate the practical application value of this intervention program in real educational settings, this study conducted semi-structured interviews with homeroom teachers post-experiment to collect qualitative data and assess social validity. The interviews focused on whether autistic preschoolers exhibited visible positive changes in daily social engagement, peer interaction frequency, and adherence to classroom routines (e.g., queuing, turn-taking) after leaving the designated experimental video observation periods. By incorporating subjective assessments from frontline educators, the study further triangulated quantitative observation data to enhance the ecological validity and practical persuasiveness of its conclusions.

IV. Experimental Results

This study employed a measurement method based on direct behavioral observation to systematically record and analyze the social behaviors of children with autism across different experimental phases, with sequential counting and stage-wise comparison of target behaviors. Through visual analysis, we systematically examined the cross-phase behavioral changes of three subjects at baseline (A1), intervention period (B), and withdrawal period (A2) from three dimensions: data level, trends, and variability.

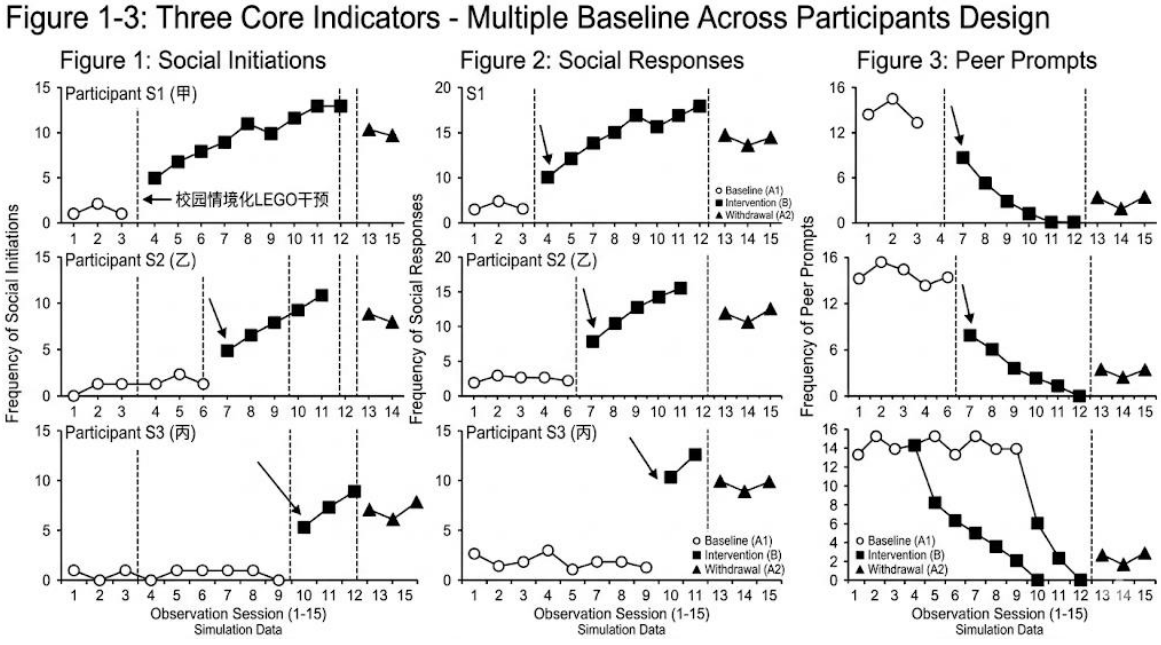

Figure 1: Change trajectories of social initiative behavior frequency in three preschool children with autism spectrum disorder at different experimental stages

4.1 Trajectory of Changes in Social Active Behavior

Social proactive behavior refers to the spontaneous initiation of peer-related social interactions by children with autism in the absence of explicit external cues. Visual analysis results (see Line Chart 1) demonstrate that during the baseline period (A1), all three autistic preschoolers exhibited extremely low levels of social proactive behavior, characterized by low variability and a flat trend, indicating a severe deficiency in spontaneous social engagement willingness under natural conditions.

When the intervention phase (B) introduced context-specific LEGO materials (such as classrooms, lecterns, and queuing areas) into campus settings, all three participants exhibited immediate and significant data curve spikes. Throughout the continuous intervention process, participants showed steadily increasing frequency of initiating verbal communication or guiding peers 'attention through gestures, demonstrating a steep upward trend. By the late intervention stage, data stabilized at high levels. During the withdrawal phase (A2), after removing contextual materials and providing explicit task cards, the social initiative curves of all three participants experienced minor declines. However, overall data levels remained significantly higher than baseline levels without showing persistent deterioration, confirming the intervention program's effective maintenance effect on social initiative.

4.2 Trajectory of Changes in Social Response Behavior

Social response behavior refers to the appropriate response behaviors exhibited by children with autism after peers initiate interactions. During the baseline phase, although the three subjects occasionally displayed response behaviors, most exhibited mechanical compliance with significant data variability.

The significant outcomes of the intervention were primarily attributed to the highly structured role design within the group. The study established clear role divisions including engineer, provider, and builder, with autistic children prioritized as engineers. This mechanism disrupted traditional parallel play patterns by establishing mandatory goal interdependencies. Data demonstrated that through peer-led demonstrations and prompts aligned with training content, participants achieved stepwise increases in cooperative operation frequency, as well as rotational and waiting behavior patterns upon peer requests. The role-dependent interaction response rate improvement exhibited highly consistent cross-individual replication across three participants, conclusively validating the systematic efficacy of the "co-construction" mechanism in enhancing interactive response capabilities.

4.3 Changes in peer prompting frequency (independence)

The peer prompting frequency serves as an auxiliary indicator of children's social behavioral independence, used to assess whether their social behaviors gradually reduce dependence on external prompts. This metric reflects the frequency at which autistic children require peers to provide explicit prompts (such as repeated instructions, demonstrations, or reminders) for participation or continuation of interactions.

During the baseline period, all three participants exhibited extreme dependence on external prompts, with consistently high prompt frequency. After entering the intervention phase, the inverse indicator curve

demonstrated a steep decline. As children became familiar with task card rules such as "requesting," "borrowing," and "taking turns," their ability to internalize social scripts progressively improved. By the activity's later stages, peer prompts had dropped to minimal levels. Even during the withdrawal phase (A2), prompt frequency showed only a slight rebound, indicating substantial reshaping of participants' social independence—no longer relying entirely on peers' "external scaffolding" support.

4.4 Qualitative Data and Social Validity Results

After the completion of the entire experiment, semi-structured interviews were conducted with homeroom teachers to collect qualitative data and assess social validity. Whether the significant improvement in quantitative data can be translated into genuine social adaptation abilities constitutes the core ecological indicator of this study.

Classroom feedback indicates that three autistic preschoolers in the experimental group demonstrated observable positive changes in routine kindergarten activities. During daily routines such as lunchtime queuing and area game material distribution, participants exhibited reduced impulsive grabbing or withdrawal behaviors compared to previous patterns, while beginning to apply "waiting" and "requesting" strategies learned through LEGO play. Additionally, peer acceptance of these children improved significantly, with increased spontaneous interactions within the classroom. These qualitative findings align closely with the quantitative data trajectories, confirming that contextualized LEGO interventions in school settings are not only effective under controlled experimental conditions but also demonstrate substantial potential for integration into real-world classroom environments.

V. Discussion

5.1 The Internal Mechanism of LEGO Games in Contextualizing School Settings

The findings of this study indicate that contextualized peer intervention in LEGO games within a school setting can significantly enhance social initiative and responsive behaviors in preschool children with autism in senior classes. The efficacy of this intervention is primarily attributed to the synergistic effects of dual mechanisms: "real-life scenario simulation" and "role interdependence."

First, "real-life scenario simulation" effectively reduces social cognitive load for autistic preschoolers. Literature reviews indicate that social difficulties in autistic children at school often manifest in specific contexts such as understanding classroom rules, taking turns waiting, and peer negotiation. Due to the prevalent "weak central integration" and generalization difficulties in autistic children, decontextualized skill training often struggles with transferability. This study miniaturizes authentic school environments—including classrooms, lecterns, nap areas, and queuing zones—into LEGO games. This approach directly aligns tasks like "requesting," "taking turns," and "borrowing" practiced during play with real challenges encountered in inclusive education settings. Such ecological adaptation provides a highly realistic and low-error-pressure training ground, bridging the gap between intervention environments and real school life.

Secondly, the "role interdependence" mechanism drives the emergence of spontaneous social interactions. The study established an intervention group consisting of one autistic child and two peers, with strictly assigned

collaborative roles including "engineer," "provider," and "builder." Under this highly interdependent task framework, construction objectives cannot be achieved without communication. Particularly, assigning autistic preschoolers the priority role of "engineer" responsible for handling blueprints breaks their habitual parallel play or withdrawal patterns, compelling them to request materials from "providers" and respond to "builders '" assembly activities. This structured peer intervention not only provides clear scaffolding for social behaviors but also transforms external training requirements into children's intrinsic play motivation.

5.2 Compound single-subject design

Children with autism spectrum disorder (ASD) exhibit significant individual differences in language proficiency, social motivation, and behavioral performance. Relying solely on group comparison studies may obscure the true individual changes during interventions, as these results could be masked by group averages. This study employs a composite single-subject design combining multi-baseline cross-subject and A-B-A withdrawal protocols, which holds methodological value in special education research.

On one hand, this design effectively mitigates the interference of sample heterogeneity. By using each child as their own control, it clearly demonstrates behavioral trajectories during baseline, intervention, and withdrawal phases, accurately capturing individual responses to interventions. On the other hand, the A-B-A withdrawal design provides robust causal inference within subjects, while the multi-baseline cross-subject design introduces interventions through staggered schedules to exclude explanations related to temporal progression or natural maturation factors. This composite design enhances evidentiary strength through replication effects without relying on large sample sizes, thereby meeting practical demands for rigorous empirical research in real inclusive education settings.

5.3 Limitations of the study

Despite demonstrating positive intervention outcomes, this study has certain limitations that require improvement in future research: First, sample size and representativeness constraints. Conducted in a real inclusive education environment, the study only included three preschool-aged autistic children in the transition phase. Future research should expand sample sizes and incorporate participants with varying cognitive and language proficiency levels to validate the generalizability of this context-specific intervention program. Second, limitations in intervention duration and follow-up assessments. The study implemented interventions four times weekly for 15-20 minutes each session. Due to semester schedules and research timelines, short-term behavioral maintenance effects were only evaluated during the withdrawal period (A2). Future studies should adopt longer-term follow-up assessments (e.g., 3 or 6 months post-intervention) to confirm sustained social skill generalization. Third, limitations in situational coverage. The LEGO construction materials primarily focused on structured indoor environments like classrooms and nap areas. However, social challenges remain significant in unstructured settings such as hallway activities and outdoor playgrounds. Future research should develop more diverse and complex campus life modules to comprehensively cover the social ecological domains of autistic children.

VI. Conclusion and Prospects

Contextualized peer intervention in LEGO games within school settings can effectively and promptly enhance social initiative behaviors and social response behaviors in preschool children with autism in large classes. By systematically integrating China's local school life scenarios (such as classroom layout, lunch break and queuing rules) into LEGO task cards, spontaneous high-frequency reciprocal interactions such as "requesting," "taking turns," and "cooperating" emerge within highly structured and interdependent role divisions (engineer, provider, builder). This reduces the dependence of autistic children on external peer prompts during social interactions. Data indicate that during the later intervention period and withdrawal phase, the number of interactions requiring explicit peer prompts significantly decreased, demonstrating substantial enhancement in social rule internalization and interactive independence. The composite single-subject experimental design demonstrated methodological advantages in validating individual behavioral changes. Cross-subject staggered intervention and behavioral maintenance data during the withdrawal period cross-validated not only the causal relationship between intervention variables and social skill improvement but also confirmed the high ecological validity and implementation feasibility of this intervention program in real inclusive education environments.

Although this study achieved positive results in improving the situational adaptability of traditional LEGO therapy, as an exploratory empirical study, there remains significant room for further refinement in the future:

First, expand sample heterogeneity and broaden the scope of intervention scenarios. Due to the limitations of single-subject designs requiring in-depth observation, the current study has relatively limited sample size. Future research should incorporate autistic children with varying language abilities, intellectual levels, and severity of core symptoms to further evaluate the applicability boundaries of this contextualized intervention program. Additionally, beyond structured settings such as classrooms and queues already covered, future efforts could develop LEGO intervention modules tailored for unstructured high-dynamic campus environments including playground free play and mixed-age play activities in educational corners.

Secondly, implementing long-term tracking and cross-stage generalization assessment. The participants in this study are at a critical transition period between kindergarten and primary school. Future research establishing a six-month to one-year longitudinal tracking mechanism—spanning both preschool and early elementary grades—would enable more precise evaluation of whether social skills acquired through LEGO interventions achieve genuine long-term generalization. This approach would provide stronger empirical support for cross-stage integration in inclusive education systems.

Finally, we explore the deep integration of digital technologies with physical environments. As educational technology advances, future peer intervention programs may incorporate cutting-edge tools like augmented reality (AR) or interactive digital sandboxes. By combining static LEGO bricks with dynamic virtual campus social scenarios, this approach could create more multidimensional and immersive social practice spaces for children with autism, thereby enhancing the precision and appeal of interventions.

Funding

This work was supported by the National Undergraduate Training Program on Innovation and Entrepreneurship (Number: 202510345040).

References

[1.] American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

[2.] Angelis, L. O., Orsati, F. T., & Teixeira, M. C. T. V. Angelis, L. O., Orsati, F. T., & Teixeira, M. C. T. V. (2024). LEGO®-based therapy in school settings for social behavior stimulation in children with autism spectrum disorder: Comparing peer-mediated and expert intervention. Brain Sciences, 14(11), Article 1114. https://doi.org/10.3390/brainsci14111114

[3.] Banda, D. R., Hart, S. L., & Liu-Gitz, L. Banda, D. R., Hart, S. L., & Liu-Gitz, L. (2010). Impact of training peers and children with autism on social skills during center time activities in inclusive classrooms. Research in Autism Spectrum Disorders, 4(4), 619–625. https://doi.org/10.1016/j.rasd.2009.12.005

[4.] Dean, M., & Chang, Y.-C. (2021). A systematic review of school-based social skills interventions and observed social outcomes for students with autism spectrum disorder in inclusive settings. Autism, 25(7), 1828–1843. https://doi.org/10.1177/13623613211012886

[5.] Koegel, L. K., Koegel, R. L., Fredeen, R. M., & Gengoux, G. W. Koegel, L. K., Koegel, R. L., Fredeen, R. M., & Gengoux, G. W. (2008). Naturalistic behavioral approaches to treatment. In K. Chawarska, A. Klin, & F. R. Volkmar (Eds.), Autism spectrum disorders in infants and toddlers: Diagnosis, assessment, and treatment (pp. 207–242). Guilford Press.

[6.] Laushey, K. M., & Heflin, L. J. Laushey, K. M., & Heflin, L. J. (2000). Enhancing social skills of kindergarten children with autism through the training of multiple peers as tutors. Journal of Autism and Developmental Disorders, 30(3), 183–193. https://doi.org/10.1023/A:1005558101038

[7.] Ledford, J. R., & Gast, D. L. Ledford, J. R., & Gast, D. L. (2018). Single-case research methodology: Applications in special education and behavioral sciences (3rd ed.). Routledge.

[8.] McConnell, S. R. McConnell, S. R. (2002). Interventions to facilitate social interaction for young children with autism: Review of available research and recommendations for educational intervention and future research. Journal of Autism and Developmental Disorders, 32(5), 351–372. https://doi.org/10.1023/A:1020537805154

[9.] Rao, P. A., Beidel, D. C., & Murray, M. J. Rao, P. A., Beidel, D. C., & Murray, M. J. (2008). Social skills interventions for children with Asperger's syndrome or high-functioning autism: A review and recommendations. Journal of Autism and Developmental Disorders, 38(2), 353–361. https://doi.org/10.1007/s10803-007-0402-4

[10.] Rotheram-Fuller, E., Kasari, C., Chamberlain, B., & Locke, J. Rotheram-Fuller, E., Kasari, C., Chamberlain, B., & Locke, J. (2010). Social involvement of children with autism spectrum disorders in elementary school classrooms. Journal of Child Psychology and Psychiatry, 51(11), 1227–1234. https://doi.org/10.1111/j.1469-7610.2010.02289.x

[11.] Shadish, W. R., Hedges, L. V., & Pustejovsky, J. E. Shadish, W. R., Hedges, L. V., & Pustejovsky, J. E. (2022). A d-statistic for single-case designs that is equivalent to the standardized mean difference. Journal of School Psychology, 90, 1–17. https://doi.org/10.1016/j.jsp.2021.10.004

[12.] What Works Clearinghouse. (2022). What Works Clearinghouse procedures and standards handbook (Version 5.0). U.S. Department of Education, Institute of Education Sciences. https://ies.ed.gov/ncee/wwc/handbooks

[13.] White, S. W., Keonig, K., & Scahill, L. White, S. W., Keonig, K., & Scahill, L. (2007). Social skills development in children with autism spectrum disorders: A review of the intervention research. Journal of Autism and Developmental Disorders, 37(10), 1858–1868. https://doi.org/10.1007/s10803-006-0320-x

[14.] Wichnick, A. M., Vener, S. M., Pyrtek, M., & Poulson, C. L. Wichnick, A. M., Vener, S. M., Pyrtek, M., & Poulson, C. L. (2010). The effect of a script-fading procedure on responses to peer initiations among young children with autism. Research in Autism Spectrum Disorders, 4(4), 593–599. https://doi.org/10.1016/j.rasd.2009.09.006