Development of peer communication patterns to create an inclusive social environment for children with autism disorder

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Abstract

This study explores how structured peer communication fosters an inclusive social environment for children with Autism Spectrum Disorder (ASD) at the London School Beyond Academy (LSBA). Using qualitative methods, including interviews and participatory action research, the study identifies three key domains of peer interaction: Play & Activities, Talk, and Helping Others. These interactions enhance social cohesion, mutual support, and communication skills, highlighting the potential of peer-based strategies like gamification and collaborative tasks. The findings align with the goals of inclusive education by reducing inequalities and promoting equitable opportunities, contributing to the Sustainable Development Goal (SDG) 10. This research provides actionable insights for educators and policymakers to create inclusive learning environments that empower children with ASD.

Keywords

Autism spectrum disorder, Peer communication, Inclusive education, Social environment

Introduction

Autism Spectrum Disorder (ASD) has emerged as a global concern due to its increasing prevalence and the challenges it poses for individuals, families, and society. The World Health Organization (WHO) reported in 2023 that 1 in 100 children globally are affected by ASD, while Indonesia's Ministry of Health estimates that approximately 2.4 million children in the country are diagnosed with autism [1]. These statistics highlight the pressing need for inclusive educational and social environments that address the unique needs of children with ASD, particularly in supporting their social interaction and communication skills, which are often significantly impaired.

Despite advancements in inclusive education worldwide, Indonesia's educational system has yet to prioritize peer communication as a central component of learning for children with ASD. Current pedagogical practices predominantly emphasize

individualized or teacher-led interventions, overlooking the benefits of structured peer interactions. However, preliminary findings from the London School Beyond Academy (LSBA) suggest that fostering peer communication positively impacts the social and emotional development of children with ASD, offering a model for integrating peer-based strategies into Indonesia's educational framework.

While existing research has extensively explored early interventions and therapeutic methods for improving the social skills of children with ASD, much of the focus remains on clinical settings rather than on practical applications in inclusive educational environments [2]. Additionally, gaps exist in understanding how peer communication patterns can be systematically developed within schools to foster inclusivity. Furthermore, limited attention has been given to how educational institutions can collaborate with external stakeholders, such as industries, to prepare children with ASD for long-term success in both social and professional contexts.

This study addresses these gaps by examining the development of peer communication patterns as a strategy for creating inclusive social environments. Using LSBA as a case study, this research explores how structured peer interactions contribute to the social and emotional development of children with ASD, extending beyond therapeutic interventions to practical, school-based applications.

The novelty of this research lies in its focus on peer communication as a tool for fostering inclusivity, aligning with Sustainable Development Goals (SDG) 4 and 10, which emphasize inclusive education and reducing inequalities. By analyzing peer interaction dynamics at LSBA, this study offers actionable insights for other educational institutions, particularly in Indonesia, to enhance inclusivity and empower children with ASD. Through this framework, the research aims to contribute to broader efforts to ensure that every child, regardless of ability, has the opportunity to thrive academically and socially.

Peer communication patterns in the context of children with autism spectrum disorder
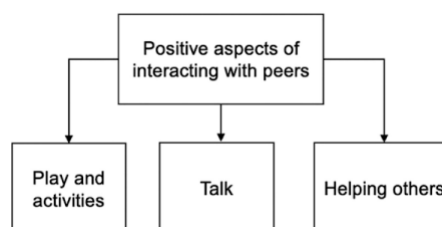

Figure 1. Peer Communication Patterns in Students with Linguistic Disorders [3]

[3] identified three domains of peer communication patterns—play and activities, talk, and helping others—as positive aspects of peer interaction in students with linguistic disorders (Figure 1). Peer-Mediated Instruction and Intervention (PMII) has been widely recognized for enhancing social and communication skills in children with Autism Spectrum Disorder (ASD) through strategies like role-playing and modeling [4].

However, most PMII research has focused on school-aged children, with limited attention to preschoolers and adolescents.

[5] emphasize the challenges of addressing ASD's diverse symptoms due to small-scale validations, necessitating flexible and adaptive interventions. Tools like visual cues have shown promise [6], though their success depends on aligning interventions with individual needs and ensuring high-quality educator training. [7] calls for respect for autistic communication diversity, advocating for strategies that bridge communication gaps in mixed neurotypical-autistic interactions. Peer engagement programs, as supported by [8], have demonstrated effectiveness in fostering inclusivity and improving social skills in educational settings.

Social environment, community roles, and SDG 10

Community involvement is essential for fostering inclusivity. [9] highlights interventions like social narratives and visual supports in enhancing the social skills of children with ASD, though the role of families and social environments remains underexplored. [10] advocate for community-based learning methods, positioning peers as agents of change to integrate children with ASD into formal education. Similarly, [11] underscores the importance of teacher-student communication in building trust and motivation.

Aligned with Sustainable Development Goal (SDG) 10, peer communication development is a strategic approach to reducing inequalities and creating inclusive environments for children with ASD. Adaptive and community-driven interventions can enhance social engagement while fostering a more equitable and inclusive society.

Method

This study employed a combination of qualitative methods, including in-depth interviews and Participatory Action Research (PAR), to gain a comprehensive understanding of peer communication patterns within the London School Beyond Academy (LSBA). Data collection spanned six months, from July to December 2024, and involved six informants: three students with autism, two lecturers, and one autism specialist (psychologist). In-depth interviews, a widely recognized qualitative technique in social sciences, were conducted to capture participants' subjective interpretations, emotions, and experiences within LSBA's educational context. These structured yet flexible interviews provided detailed narratives and ensured context-specific data, following established qualitative research protocols [12] [13].

To complement the interviews, PAR was integrated to actively involve stakeholders in the research process through collaborative and democratic methods [14] This approach included group discussions and decision-making exercises, which fostered meaningful insights and promoted inclusive practices. Ethical considerations, such as informed consent, were observed, and tools like audio recordings ensured data integrity while minimizing disruption to participants' routines. Thematic analysis was employed to transcribe and interpret the data, starting with coding individual responses and

progressing to cross-case comparisons, yielding a holistic understanding of the research context. By integrating PAR with interviews, the study effectively combined academic rigor with practical action to address real-world challenges in autism education.

Results and Discussion

Results and discussion can be made as a whole that contains research findings and explanations.

Results

Table 1. Interview Results

Measure	Quote from Interview
Play & Activities	"I use Getz, play computer, and then study together." (N1)
	"Maybe playing together, like Roblox games. It's like war games." (N2)
	"During breaks, I move classes, and sometimes I go for snacks or just get some fresh air. After that, I go straight back to class." (N3)
Talk	"About college courses. Other majors. About photography, what's next? About cameras, about photo shoots. For computer design 2, what's the theme? Making brochures in InDesign and Photoshop." (N1)
	"With Rehan, we talk about things like my grandma's condition. Then we discuss which games to play at home or anything else personal." (N2)
	"One of my classmates, Ezra, often communicates with his best friend Mufatir, or Fatir for short. I communicate with Ezra, like, 'Ezra, are you attending class?' or I tell him, 'Sorry, I have a family event, my grandma's birthday in Bandung.'" (N3)
Helping Others	"Helping, teaching, and guiding. Geryl once struggled with addition in the subject of introductory administration." (N1)
	"If a friend is struggling, maybe like Nabila, with filling a water bottle. I told Nabila, 'If you're having trouble filling it, let me help.'" (N2)
	"Line art, like triangles or rectangles. Helping Andre make a box or a triangle earlier." (N3)

The results of this study highlight the peer communication patterns of students with linguistic disorders, focusing on three key domains: Play & Activities, Talk, and Helping Others (Table 1). Observations yielded representative results that shed light on positive aspects of peer interactions, as detailed below.

Play and activities

Students actively engage in shared activities that foster social connection. For example, one participant (N1) mentioned using digital tools like "Getz" to facilitate joint learning and recreational activities such as playing computer games together. Similarly, another participant (N2) highlighted engaging in collaborative games like "Roblox," which emphasize team-building and strategic thinking. Another student (N3) demonstrated a preference for utilizing break times to move between classes, snack, or refresh before resuming studies. These findings illustrate that shared activities provide a platform for social bonding and learning opportunities among peers.

Talk

Peer communication centered on discussions about academic subjects, personal interests, and daily experiences. One participant (N1) elaborated on conversations involving college coursework, such as photography and design software, emphasizing

the functional role of communication in knowledge exchange. Another participant (N2) recounted personal interactions with peers, discussing family matters and shared gaming plans, reflecting a blend of social and emotional exchanges. Furthermore, participant (N3) noted maintaining consistent communication with peers about attendance and scheduling, demonstrating practical aspects of peer interaction. These examples indicate that conversations among peers serve both informational and relational purposes, enhancing social cohesion.

Helping Others

Assistance among peers emerged as a recurring theme. For instance, participant (N1) described helping a classmate, Geryl, with addition problems in an administrative subject, showcasing the role of peer support in overcoming academic challenges. Similarly, participant (N2) reported offering assistance to Nabila in filling water bottles, highlighting practical, everyday support. Participant (N3) noted helping another student, Andre, in creating line art designs, such as triangles and rectangles, reinforcing collaborative problem-solving. These interactions underline the altruistic behavior prevalent in peer relationships, fostering a supportive learning environment.

Discussion

The findings of this study underscore the significant role of peer interactions in fostering social and communication skills among students with linguistic disorders. In the Play & Activities domain, the observed preference for collaborative activities, such as group gaming and shared recreational tasks, aligns with existing research highlighting the benefits of gamification in promoting engagement and teamwork. The Talk domain further illustrates how peer communication serves both informational and emotional functions, providing opportunities for mutual learning and social bonding. Similarly, in the Helping Others domain, the emphasis on altruistic behaviors reflects the importance of peer support in building a cohesive and inclusive learning environment.

These findings corroborate previous studies that advocate the use of Peer-Mediated Instruction and Intervention (PMII) as an effective strategy for enhancing the social and communication skills of children with Autism Spectrum Disorder (ASD). PMII leverages structured peer interaction to provide opportunities for children to develop essential interpersonal skills within a supportive and naturalistic context. By integrating elements of gamification into learning projects, as seen in successful implementations of PMII, students can engage in interactive, collaborative tasks that not only facilitate learning but also strengthen peer relationships.

Based on these insights, it is recommended that LSBA develop interactive peer-based learning programs that incorporate group projects and gamification techniques. Such programs could include team-based problem-solving tasks, collaborative creative projects, and role-playing games that encourage active communication and mutual support. These activities would provide an engaging platform for students to practice social skills while fostering a sense of community and inclusion.

Finally, these recommendations align with Sustainable Development Goal (SDG) 10, which emphasizes reducing inequalities by promoting inclusive education and equal opportunities. By enhancing peer interactions through innovative learning strategies, LSBA can contribute to creating a more inclusive environment that empowers students with linguistic disorders to reach their full potential, ensuring no one is left behind in their educational journey.

Conclusion

This study highlights the effectiveness of peer communication patterns in creating an inclusive social environment for children with Autism Spectrum Disorder (ASD) at the London School Beyond Academy (LSBA). Structured interactions in the domains of Play & Activities, Talk, and Helping Others fostered social cohesion, mutual support, and improved communication skills among students. Consistent with existing research on Peer-Mediated Instruction and Intervention (PMII), these findings demonstrate the potential of peer-based strategies to enhance social and communication abilities in children with ASD. By incorporating gamification and collaborative tasks, this study offers new insights into promoting engagement and inclusivity. Aligned with Sustainable Development Goal (SDG) 10, the research contributes to reducing educational inequalities and advancing equitable learning environments. Future research should examine the long-term effectiveness of these frameworks and their adaptability across various educational settings.

Acknowledgement

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