

Research Paper

Fostering Peer Interaction Through a Buddy System: Action Research in a Kindergarten Classroom

Yong Ting

School of Education, Taylor's University Lakeside Campus, Subang Jaya, Malaysia

Lee Yee Ling

School of Education, Taylor's University Lakeside Campus, Subang Jaya, Malaysia

Education for All Impact Lab, Taylor's University, Subang Jaya, Malaysia

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Abstract: In early childhood development, one of the important agents that influences children's development is their peers. Children are equipped with social skills and learn about social norms and processes in a secure and supportive environment through interactions with their peers. The study focuses on three main aspects of peer interaction, including communication, prosocial behaviour and conflict resolution. It aims to explore the capability of the buddy system in children's peer interactions in a Malaysian inclusive preschool classroom. Using a qualitative research design, the study conducted a buddy system for 8 weeks with designated activities focused on the three dimensions stated earlier. Data collected through naturalistic observations with a checklist, reflective field notes, video and photo documentation were analysed using triangulation. The final analysis shows potential improvement in children's interaction for all three dimensions, even though the results fluctuated in some. In summary, the study suggests that child-friendly and appropriate social activities could lead them to positive social interactions, while taking into account individual differences and unavoidable factors.

Keywords: Peer interaction, communication skill, prosocial behaviour, conflict resolution, peer buddy system

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*Correspondence: Yong Ting, Taylor's University, Malaysia. Email: yongting@sd.taylors.edu.my

Introduction

In early childhood development, one of the important agents that influences children's development is their peers. Children are equipped with social skills and adapt to social norms and processes through interactions with peers in a secure and supportive environment (Maleki et al., 2019). Positive peer relationships can greatly improve children's self-regulation skills and engender the growth of various developmental domains that are interconnected with one another (Mondi et al., 2021). Conversely, negative early peer interactions such as abuse and bullying, can lead to serious psychological problems in young adulthood, or even potential involvement in aggressive criminal activities, if interventions are not conducted at the childhood stage (Shin et al., 2016). Since peers are important for children's socio-emotional development, it is vital to help them establish safe peer and adult relationships in future social and cultural contexts through exploring, learning to self-manage and expressing their emotions appropriately.

According to 2030 Agenda for Sustainable Development, goal 4 (quality education), calls for inclusive and equitable quality education that promotes life-long learning for all global citizens, regardless of their background. Within this context, given the diverse races of the country, inclusivity needs to be emphasised in the Malaysian education field. In their work on Malaysian preschools, Abd Rahim et al. (2023) found that 8.4% of children displayed distressing emotional and behavioural problems with the most common cause being peer problems (19.7%).

Some issues will directly affect children's peer interactions, including temperamental factors, language barriers and more. Due to preferences, some children will be disliked by others, leading to some social issues. A recent study found that the difficulties of peer interaction are somehow influenced by temperamental factors, especially emotional readiness (White et al., 2020).

One of the early interventions that can potentially minimise these risks in peer interaction is collaborative learning in an inclusive setting. Collaborative learning involves children exchanging their perspectives and developing social skills naturally. The buddy system, which is a part of collaborative learning, pairs a child with another to help those who might struggle in developing social skills and empower them in building confidence, in for example, a preschool classroom (Hanish et al., 2021). For this study, three socially-emotionally relevant dimensions were examined, which are communication skills, prosocial behaviours and conflict resolution, to minimise the challenges of peer interaction while fostering healthy connections and mutual support friendships among preschoolers in inclusive settings.

Problem Statement

Although children are exposed to designated social activities, some of their common characteristics can lead to difficulties in their peer interactions, especially temperamental and developmental delays. According to Eliyah (2025), several essential social targets, such as communication skills, prosocial behaviour and conflict resolution, are vital because they nurture the foundation of early age peer interaction by establishing positive social attitudes.

In the inclusive classroom, peer interaction is unavoidable as children begin their school journey. Peer interactions foster the development of social-emotional domains and language acquisition when they bond with diverse peers. Wastell and Degotardi's (2017) explained that children's interaction with peers offers equal opportunities to participate actively and to be self-determined in activities such as actively inviting peers to play, responding appropriately to their peers, waiting for their turns and engaging in peer play. These prosocial behaviours allow children to nurture a sense of belonging while also developing their interpersonal skills, helping them resolve conflict and become open to their peers' perspectives. Thus, it is important for them to discover their natural aptitude and boost their peer engagement that leads to acceptance as well as decrease the risk of social rejection by peers in early development (Bilgiler & Dergisi, 2019).

While much research has studied the role of buddy system in improving peer relationships, mostly had been focused on special needs children. However, this topic needs to be examined at the preschool level as well. Therefore, this study looks at the effectiveness of the buddy system on equitable peer interaction despite individual differences, thereby offering benefits for inclusive socialisation and a sense of belonging in inclusive early childhood settings. More precisely, this study focuses on three targeted areas: communication skills, prosocial behaviour, and conflict resolution, to derive meaningful insights for children's early-stage social-emotional growth and development.

To explain further, communication skills refers to children's ability to express their needs and respond using language. In preschool settings, effective communication can be divided into two types, which are verbal and non-verbal cues, such as using polite words, active listening, facial expression and more (Healthychildren, 2023). Next, prosocial behaviour refers to the wide range of positive behaviours done willingly to benefit others, including sharing toys, turn-taking, comforting and cooperating. According to Putra et al. (2020), prosociality helps facilitate social contact and create a friendly, supportive atmosphere for children. Additionally, children also need to be equipped with the conflict resolution skill in order to easily explore and validate their emotions, manage themselves in social situations and sustain their friendships even after experiencing disputes (Vestal, 2017).

Against this background, this study was guided by the following research question: How does the incorporation of a buddy system in an inclusive preschool classroom alleviate difficulties in peer interaction among children through three dimensions: communication skills, prosocial behaviour and conflict resolution?

Literature Review

Child's Social-emotional Development Theory

Before setting foot into society, the preschool environment is the first and smallest society for children to observe and learn social skills in the early stages. Thus, peer interaction is crucial, as it can directly impact other domains of development, particularly social-emotional development. According to Erikson's psychosocial development theory, personality is formed throughout the eight stages of lifespan. One of the stages is specifically associated with preschoolers, which is the third stage, Initiative vs Guilt. He proposed that this phase would take place around 3–5 years of age, when children start to learn to exert their power to control their environment. They will grow up with curiosity and discover both controllable and uncontrollable things through self-discovery and exploration. At this stage, the importance of self-confidence, leadership and relationship skills becomes key to successful peer relationships. They are also presented with the opportunities to initiate conversations, share their thoughts, and grasp social norms (Orenstein & Lewis, 2022).

Social-Emotional Development

Children's multifaceted growth and well-being development are fundamentally affected by crucial developmental domains, including physical, cognitive, socio-emotional and language. Through the growth process, they will achieve these developmental milestones by equipping themselves with some of the essential social skills. They serve as a foundational checklist for parents and educators to track their natural development (Choc, 2025). Although each of the domains is interrelated, social-emotional development is the main target domain which greatly influences children's capability to connect with others, regulate their emotions, and establish a bond with the people around them.

Early awareness of social and emotional development is important and social capabilities, cognitive abilities, and self-regulation are key to helping children build positive and healthy friendships that will help form their identity by exposing them to real-world societies. Equipping children with empathy helps them become more open-minded and embrace differences respectfully so that they can manage social conflicts better (Allen, 2015). On the flip side, if they are poor at building rapport and always exhibit aggressive behaviour towards others, the probability of

getting social rejection and exclusion becomes higher because of their inappropriate emotional outbursts (Rubin et al., 2009).

Malaysian Early Childhood Education

Given that Malaysia is a country blessed with various beliefs and religions, the incorporation of socio-emotional development and inclusive education into classroom practice becomes important as it exposes children to a child-friendly developmental environment that embraces and respects diverse backgrounds and helps them value what makes them unique, even with clear-cut common interaction barriers (Chua & Low, 2024). The Malaysian national preschool standard curriculum (KSPK) is the foundational guideline that espouses six core values, including communication, personal competencies, physical development, humanity, science and technology, as well as spirituality, attitudes and values, subjecting children to holistic early development. Even though KSPK highlights the importance of social-emotional development, gaps and challenges in its full implementation remain.

Further, in Malaysian preschools, most teachers lack training and have limited knowledge in applying effective strategies to guide children in their behaviours and their emotions, needed for their social interactions (Tan & Abdullah, 2024). A similar article on children's aggressive behaviours in Maldivian schools also contended that limited training and knowledge of an educator can affect learners' performances (Hassan et al., 2024). Likewise, another common challenge is that educators and parents often overstress academic readiness. Similar to Asian cultural norms, Malaysian parents often overemphasise academic success as the key to a successful future, including a strong primary school education, instead of learning through play (Kaur & Ngadni, 2023).

Some parents also pressure educators to focus on academic performance, which may be less effective for social-emotional development (Yong et al., 2023). Therefore, some children will have limited playtime and consequently, will struggle to manage social situations effectively. Through collaboration between the school and parents, educators can utilise "Parents' Day" to promote social skills in early childhood and recommend interventions, while discussing the challenges and strengths of their child's socialisation. This would strengthen the relationship between parents and their children, while also fostering strong social skills in the child for the future.

Peer Interaction

Children's peer interactions can refer to the early socialisation that children aged 3–6 years old undergo, through daily interactions which create real-life situations for them to test and cultivate their social-emotional skills, language and even their cognitive

skills (Wang et al., 2021). These interactions range from as simple as smiling at others to more complicated behaviours such as engaging in proper communication, exhibiting prosocial behaviour, such as turn-taking, active listening, cooperating with others and dealing with disagreements. In addition, these interactions also directly propel them to recognise and regulate a wide range of emotions, which depend on their responsiveness (Kılıç & Aydın, 2025).

A high-engagement and balanced friendship in a supportive and safe environment will greatly increase children's intrinsic motivation for learning (Jiang et al., 2023). These interactions will also foster an open-minded mindset that can accept individual differences, resulting in a welcoming and inclusive classroom for each child (Rubin et al., 2006). Thus, peer interactions serve as a focus point to nurture mutual understanding, empathy, acceptance and greater socialisation so that children can adapt and form healthy relationships more easily, by trusting themselves and others in a diverse and secure environment (Sanches-Ferreira et al., 2022).

Dimensions of Peer Interaction

Since peer interaction is a broad term that encompasses many criteria and it is unrealistic to achieve each of the criteria in a short period of time, three dimensions, communication skills, prosocial behaviour and conflict resolution, were chosen as observable indicators to provide depth and concreteness in this study.

Communication Skills

To deliver effective messages and feelings while interacting, communication skill is a prerequisite social ability. Communication skill consists of two types, which are verbal and non-verbal, including eye contact, polite words, active listening, and other cues. Through communication, children directly develop interpersonal and intrapersonal skills to form friendships, seek help and enhance their problem-solving skills. Strong communicative abilities can positively enhance children in all aspects of developmental domains because they are able to adapt themselves to any setting (Doğan & Çamurcu, 2025). Conversely, limited communication skill is one of the roots of feeling insecure and isolated, thereby leading to mental health issues. Hence, mutual respect and understanding can be impacted by the dynamic and reciprocal process between children and their peers.

Prosocial Behaviour

Prosocial behaviour among children refers to voluntary actions that benefit others, while improving their own well-being, such as sharing toys, comforting, showing empathy, and helping their friends (Healthline, 2024). From a psychological perspective, a child is more likely to imitate positive behaviours performed by his

or her peers after observing reinforcement of these behaviours. This aligns with Bandura's social learning theory, which states that children learn behaviours through observation and imitation (McLeod, 2025). Likewise, Busching and Krahé (2020) indicated that positive behaviours create a norm of reciprocity, for example, they are more likely to help those who had helped them before, thereby increasing peer interaction. Thus, this reciprocal cycle increases the establishment of healthy friendships while also decreasing the risk of negative consequences such as bullying and isolation.

Conflict Resolution

Conflict resolution is another dimension of peer interaction examined because conflict will always appear in any interaction, especially in the inclusive classroom. Through this ability, children can have a natural and important experience of conflict in which they learn to set their boundaries, navigate disagreements and express their opinions or needs in appropriate ways. In addition to children learning to identify their emotions in a conflict, teachers can also discover the root of the conflict and take action to facilitate them (Cao et al., 2023). For example, a teacher has to calm down an angry child in a stable state and guide him or her in understanding his or her feelings before a tense situation becomes worse. Likewise, mutual understanding can be fostered when children learn to use active listening to listen to other perspectives. In addition, problem-solving skills can be enhanced because children can consider the pros and cons of a resolution, react to an appropriate decision as well as try to negotiate or compromise in a conflict (Healthline, 2024). Conflicts in natural settings, can help children develop social learning, especially leaning how to respect and perceive something from an alternative standpoint.

Hindrances to Peer Interaction among Children

Several hindrances interfere with group play or social activities. However, in reality, clear-cut hindrances encompass temperamental factors and language barriers, which will be explained further next. As a result, the risk of maladaptive behaviours might increase in a diverse background and language classroom.

Temperamental Factors

Each child has his or her own style of responsiveness to their surroundings, which is known as temperament. It encompasses behavioural traits such as sociability, emotional readiness, self-regulation, and activity level (Acar et al., 2015). For example, extroverted and sociable children are more likely to present themselves in public situations, but on the other hand, shy kids need more time to familiarise themselves with a new environment. According to Magdalena (2015), highly energetic children

tend to perform aggressively, while shy children will perform positively. Effortful control (EC) is also another key aspect of temperament, whereby high EC children exhibit various prosocial behaviours and good emotional regulation (cooperation, empathy and tackling disputes), which can lead to positive and healthy social relationships among peers. Therefore, the temperament of a child needs to be taken into consideration in their peer interaction.

Language Barriers

Language barrier is one of the common setbacks affecting children's socialisation, particularly in an inclusive environment. As a result, children facing a language barrier become excluded and isolated from play and conversation because they maybe worried that they will misinterpret social cues and end up feeling lonely. Sometimes, conflicts are triggered because they misunderstand the responsiveness from others, leading to aggressive and maladaptive behaviours (Carpenter & Drabick, 2011). According to Blaskova and Gibson's (2022), children with developmental language disorder (DLD) tend to have fewer friends and narrower social connections because they struggle with confessing their opinions or feelings to others. Early inclusive interventions can minimise this problem before it impacts future social relationships.

Buddy System

For this research, the buddy system was selected as an early intervention to affect children's peer interaction in an inclusive preschool classroom. Children who struggle to build relationships were paired with children who have stronger social skills, while participating in class routine or group play. The objective was to create a risk-free and inclusive environment with structured activities for children by nurturing their sense of community to help each other (Hanish et al., 2021).

Importantly, teachers' involvement plays a vital role in implementing this intervention. They need to acknowledge all the different needs of children, match them, demonstrate good examples and monitor the relationship, gradually rotating the buddies over time to ensure equality and social variety while fostering a more courteous and friendly classroom environment (Robles, 2022).

Methodology

A combination of qualitative and quantitative methods was employed in this study to investigate the impact of the buddy system intervention in enhancing children's social and interpersonal relationships in a natural setting.

Class Demographics and Context

The study took place at one of the local preschools in Miri, Sarawak. The participants comprised 12 children aged 5 years old. They were selected by the headmistress of the school based on the selection criteria of the study. The criteria included differences in gender, race, and personality, which offered a rich study sample for examining social bonds among children's unique traits. The participants' demographics are shown in Table 1.

Table 1. Children' profiles

| Name (initials) | Gender | Race | Notes on temperament |
|-----------------|--------|---------|---|
| AK | M | Malay | <ul style="list-style-type: none"> – Slow learner – Delayed development in literacy and language – Low critical and creative thinking – Short attention span |
| AN | F | Malay | <ul style="list-style-type: none"> – Likes to share – Emotionally sensitive in the morning – Grabs attention – Critical and creative thinking is low |
| AT | F | Chinese | <ul style="list-style-type: none"> – Quiet – Converses in Mandarin – Short attention span – Off-task behaviour: Plays with her things – Critical and creative thinking is low |
| BY | F | Chinese | <ul style="list-style-type: none"> – Delayed development in literacy – Short attention span – Critical and creative thinking is low |
| CT | F | Chinese | <ul style="list-style-type: none"> – Loves sharing – Shows more effort in learning – Good attitude for learning – Competitive |
| EC | M | Chinese | <ul style="list-style-type: none"> – Playful – Emotionally sensitive – Stubborn – Short attention span – Needs to improve manners – Off-task behaviour: disturbs others |

Table 1. (cont)

| Name (initials) | Gender | Race | Notes on temperament |
|--------------------|--------|------------------------------|--|
| EW | F | Chinese | <ul style="list-style-type: none"> - Stubborn character - Emotionally sensitive - Needs to improve manners - Off-task behaviour: Plays with her things, disturbs others - Competitive |
| EL | M | Chinese | <ul style="list-style-type: none"> - Shy - Low critical and creative thinking - Competitive - Always absent |
| JH | F | Chinese | <ul style="list-style-type: none"> - Needs to improve manners - Off-task behaviour: Plays with her things, disturbs her tablemate - Competitive |
| HB | F | Iban | <ul style="list-style-type: none"> - Slow learner - Good attitude for learning - Critical and creative thinking is low |
| ML | M | Chinese | <ul style="list-style-type: none"> - Playful - Short attention span - Off-task behaviour: disturbs others, copies others - Critical and creative thinking is low |
| NC | F | Mixed Chinese and Iban | <ul style="list-style-type: none"> - Emotionally sensitive - Shy and quiet - More attention given because she hardly expresses her needs. |

Note. Children’s names are replaced by their initials. Gender: ‘M’ represents Male and ‘F’ represents Female.

Research Design

This research adopted an action research design, which is commonly used by practitioners to test the effectiveness of their own methods, thereby revealing any improvements to enhance the design. It is the combination of a circular process and collaborative action for resolving real-world issues, and for promoting the growth of practitioners and participants, instead of merely providing academic knowledge.

Implementing the process requires ongoing and personal reflection through four steps: plan, act, observe and reflect, to advance the practices.

The buddy system intervention was divided into three phases: 2 weeks of pre-intervention, 8 weeks of core-intervention, and 2 weeks of post-intervention. Specifically, the first two weeks was dedicated to relationship bonding and gathering each participant's basic background information through observations and a short interview with the class teacher, to recognise their individual differences, inform designated activities and construct secure environments.

The core implementation stage was conducted from Week 3 to 10, which is a total of 8 weeks. This phase was divided into 2 periods, which were training weeks (Week 3 to 5) and practical weeks (Week 6 to 10). The buddy system called "Hey Buddy" involved weekly structured activities encompassing the selected three specific dimensions (communication skills, prosocial behaviour and conflict resolution).

At the start of the first three training sessions, the researcher proposed a topic for peer interaction incorporating the three dimensions, using visual aids and mainly cognitive tasks to assess the participants' comprehension. At the same time, a pairing session was conducted, and participants were paired up with their tablemates, who were already assigned by their class teacher based on parents' requirements. Due to the disproportionate gender breakdown, some of the girls were paired together, but with different cultural backgrounds, to ensure mutual learning. Based on parents' requirements and the class teacher's advice, the pairings were done according to the seating arrangement, which fortunately fulfilled the requirements of this study. For example, an expressive boy was paired with a slow learner while a sociable girl was paired with a quiet boy. These early sessions aimed to introduce the importance of positive peer interaction and some alternative strategies that teachers could use to enhance intrapersonal and interpersonal skills to build a judgment-free environment.

The pairs were maintained throughout the practical weeks (Weeks 6 to 10), till the end of the intervention. The researcher believed that the participants still needed time to become familiar with their tablemates. By maintaining the buddy pairs, the children could slowly create a trusting friendship, develop communication skills, and cultivate problem-solving skills with structured activities, while being supported by reliable data. A reinforcement chart was utilised as a tool to motivate them to carry out positive behaviours and maintain their engagement. In the post-intervention period, the collected data were compiled and analysed to evaluate the effectiveness of the strategy.

Timeline of Intervention

Table 2 shows the timeline of the intervention plan (buddy system).

Table 2. Summary of intervention timeline

| Weeks | Focus: |
|--------------------------------|--|
| Week 1-2 | Pre-intervention: <ul style="list-style-type: none"> – Built rapport with the participants and observed interactions between them. – Collected baseline data from observations and conducted a short interview with the class teacher to get more information about the participants. |
| Week 3-5 (Training weeks) | Intervention: <ul style="list-style-type: none"> – Pairing was carried out based on seating, resulting in 6 pairs. – Introduce the intervention disguised as “Hey Buddy” – Explained to the participants the specific areas that would be covered within the three weeks. – Provided facilitation during monitoring – Videos were recorded in Week 3 to collect baseline data (initial peer interaction of participants). |
| Week 6-10 (Practical weeks) | <ul style="list-style-type: none"> – Introduced the weekly missions to the participants and the Kindness chart. – Introduced the rules for the missions. <ul style="list-style-type: none"> • For example, they need to fulfil all three dimensions, and they can get a stamp on the Kindness chart. • The size of the present will be decided based on the number of stamps they collected. – Each pair would carry a specific name, which was decided by the children. – Provided some non-guidance contexts and monitored the changes – Videos were recorded for two of the missions (Week 8 and 10) – The participants and their works were captured as pictures. |
| Week 11-12 | Post-intervention: <ul style="list-style-type: none"> – Revisited all the data collected. – Compiled the results after analysing those findings. |

The buddy system was gamified by including a “mission” feature to increase the level of engagement and motivation. It was also constructed as a play and risk-free learning environment to help the participants learn social skills while playing. Throughout the 8-week ‘Hey Buddy’ intervention, participants were encouraged to show appreciation and kindness towards their peers in verbal or physical ways. These activities were held once a week with a different theme, but incorporating the three selected dimensions.

In the training weeks, the participants were also given an understanding of the importance of peers and how to maintain positive interactions with peers using visual presentations and real-life scenario practices. The participants also received a weekly “mission” during the practical weeks to evaluate their level of understanding of the training sessions’ contents, while providing real-world practices to enhance their

socialisation skills. A reinforcement chart was utilised to encourage their willingness to participate and rewards were given as a reinforcement to appreciate their efforts in the activities.

Data Collection

Data were collected through lessons called 'Character Building', which is approximately 50 – 60 minutes long and used to carry out the weekly designated activities. The main method used was naturalistic observations with three sessions of checklists and weekly field notes. Through discreet observations, the researcher evaluated the participants' behaviour using the checklist and identified the common patterns by interpreting them in an authentic setting. Recorded weekly field notes were helpful for the researcher to observe any noticeable incidents, actions and emotions with unbiased interpretations to support the checklist.

Video and image documentation was the second method of data collection. Visual documentation was carried out three times in the core-intervention stages, that is, one of the training weeks' activity (Week 3) and two sessions of practical weeks (Week 8 and 10). The visual evidence provided the researcher the opportunity to gain a more nuanced understanding. Children's works were also collected to capture evidences of their interactions. To ensure the young participants' privacy, all recordings were stored in the researchers' archive and were encrypted. Similarly, pictures taken were added stickers to protect the exposure of the participants' faces.

These methods were suitable because they are non-intrusive and adaptable for this age group of children whose behaviours are inconsistent. The data collected were organised into two quantitative tables and a narrative structure to explain the occurrence of each participant's behaviours.

Data Analysis

The data collected were used to calculate the average scores for the three targeted dimensions: communication, prosocial behaviours, and conflict management. The results were separately analysed using triangulation of the sources to validate the reliability.

The checklists for the sessions used a 3-point scale (1 = not achieved, 2 = slightly achieved, 3 = achieved) to gauge the participants' performance for the three aspects in the weekly activities. The checklists were then compared across the three recorded sessions to provide a systematic and simple visual representation of the participants. Additionally, the field notes functioned as a strong evidence tool to jot down other occurrences of verbal or non-verbal behaviours in the activities and daily interactions. Alongside the checklist, the notes provided reflections on some unexpected factors, such as emotions and school schedules, that might have influenced their actions.

Likewise, all three full sessions were recorded for analysis of alternative perspectives and overlooked details to aid the researcher. Throughout the repeated reviewing of the videos, some of the non-verbal interactions and unnoticed behaviour that affect the participants’ engagement level helped the researcher make further adjustments for subsequent activities as well.

Using triangulation, the results were compared and analysed to determine the credibility and validity of the effectiveness of the peer buddy system as a potential tool to enhance peer interactions between children in an inclusive classroom.

Results

Baseline data were collected in the first week of training sessions (Week 3), and primary data were collected from two practical sessions (Week 8 and 10). The data were collected from quantitative checklists, field notes and video observations. The results looked at three aspects of peer interaction, communication skills, prosocial behaviour and conflict resolution, impacted by the intervention of a buddy system.

Table 3. Average scores of the three aspects of peer interaction across the core intervention phases

| Dimension | Baseline Average | First Session Average | Second Session Average |
|----------------------|------------------|-----------------------|------------------------|
| Communication skills | 1.25 | 1.50 | 1.20 |
| Prosocial behaviour | 1.00 | 1.70 | 1.30 |
| Conflict resolution | 1.00 | 1.20 | 1.00 |

Note. Data collected based on 3-point scale (1= not achieved, 2= slightly achieved, 3= achieved)

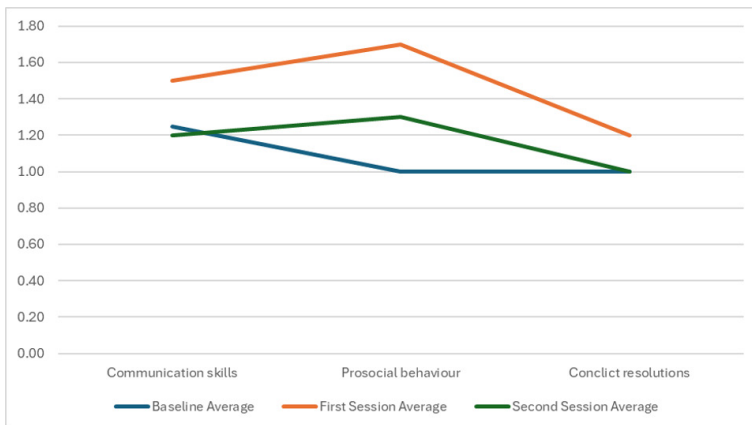


Figure 1. Average scores of the three selected peer interaction aspects

Table 3 and Figure 1 present the average scores of the targeted aspects of peer interaction across the 8-week core intervention phases. Figure 1 shows a fluctuating trend between the intervention phases. The scores for the three aspects slightly increased from baseline to the middle phase of the intervention, before dropping slightly in the post-intervention. Prosocial behaviour showed the most significant improvement from the beginning to the final phase, although it decreased gradually. Communication skills and conflict resolution presented minimal shifts when compared to the baseline and middle scores, yet they modestly decreased in the end. Generally, significant change was seen in the participants' prosocial behaviour, and while the least change was seen in their conflict resolution.

Table 4. Children's mean performance scores during the core intervention phases

| Participant | Baseline Average | First Session Average | Second Session Average |
|-------------|------------------|-----------------------|------------------------|
| AK | 1.00 | 1.00 | 1.00 |
| AN | 1.30 | 2.00 | 1.30 |
| AW | 1.00 | 1.00 | 1.00 |
| BY | 1.00 | 1.70 | 1.30 |
| CT | 1.30 | 2.00 | 1.30 |
| EC | 1.00 | 1.70 | 1.30 |
| EW | 1.00 | 1.30 | 1.00 |
| EL | 1.00 | 1.30 | 1.00 |
| HB | 1.00 | 1.30 | 1.00 |
| JH | 1.30 | 1.70 | 1.70 |
| ML | 1.00 | 1.00 | 1.00 |
| NC | 1.00 | 1.30 | 1.00 |

Note. Data collected based on 3-point scale (1= not achieved, 2= slightly achieved, 3= achieved)

Table 4 shows the average scores of the three targeted aspects for the participants in the core intervention period. Overall, most of the participants improved gradually during the middle phase, but a temporary decline was observed at the end of the intervention. All the scores illustrate the fluctuating trend of increasing and decreasing when compared from baseline to post-intervention. Even though most of the participants reported minimal changes in the middle of the intervention, they returned to baseline scores. There was an exceptional score for JH, who showed consistent growth till post-intervention. When comparing the middle and post-intervention phases, two participants (BY and EC) showed a steady improvement,

while another two (AN and CT) showed a notable drop. Table 3 and Figure 2 present the average scores.

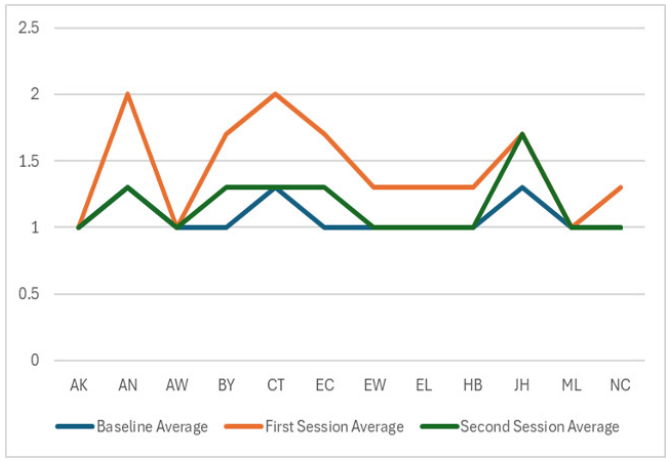


Figure 2. Children’s mean performance scores during the core intervention period

Impact on Peer Interaction

The next sections describe the changes in the participants’ peer interactions during the 8-week core intervention period. Their interactions greatly increased in the middle phase of the intervention; however, was not sustained until the end. There were some distinct variations between different pairs of children and their interaction behaviours. Several challenges that affected the reliability of the final results, need to be highlighted and considered, such as children’s attendance, the lack of buddy rotation sessions and limited intervention period.

Communication Skills

Findings show that the participants’ communication skills slightly improved during the intervention period, as they started to have better communication with their peers by using positive words more frequently. Field notes show that the majority of children refused to talk or share in the training weeks. The majority of activities during the training weeks were mostly incorporated with visual presentations and sharing sessions to allow the participants have verbal interactions. However, due to different temperamental factors and limited expressive skills, they could not express themselves freely. Take Week 1’s activity (Know My Buddy) as an example. The activity required participants to get along with their buddies, but most of them could not interact well. In pairs, they showed anxiety, such as rubbing their

hands and clenching their sides, and going blank, even though they were given guidance. Likewise, in one of the sessions during Week 5 (Cooperation), which was Thumbs-up Check, most of the participants followed the crowd instead of their own will. This observation illustrates that children are ingrained with the mindset of obedience rather than acting on own will.

In the following practical weeks, improvements were clearly seen in structured activities and consistent buddy pairs. The participants were observed to interact naturally with their peers using verbal and nonverbal communication. In Week 7's activity (Mirror Me!), most of the participants showed their greatest improvement, as they internalised the rules and guidance to interact with their assigned peers well. During a sharing session, a few of the quieter participants (BY, EW and ET) raised their hands and talked about fun moments with their peers. Additionally, in Week 8's (Buddy Artist) treasure hunt segment, the participants discussed with their assigned buddies to find a "treasure". In the collaborative drawing segment, the children also decided to work together on their artworks by using positive communication, such as *"I like your drawing, I also want to add on it here!"* or *"Can I draw a cloud here?"*

However, in the last practical weeks (Week 10 and 11), positive communication became inconsistent. The majority of the children were too reliant on teacher support, and some even complained about their buddies, rather than discuss with each other. For example, in the shrinking newspaper activity (Our Island!), some of them blamed their buddies for not being cooperative and used harsh words, such as *"You are pushing me! Can you go out?"*, despite the rules being presented in a visual demonstration with simple explanations much earlier. Also, in the sharing segments, two participants (HB and EW) bickered over getting the adults' attention. These interactions could suggest that as children, they still internalise the appropriate communication for expressing needs and negotiating in a good manner.

Prosocial Behaviour

Prosocial behaviour in children's interactions was observed to have been the most impacted by the buddy system intervention. Children exhibited positive behaviours clearly in the practical weeks.

Field notes reveal an increase in the use of polite language, including *"thank you"*, *"Please"* and reasoning apologies, alongside positive behaviours such as turn-taking, cooperation, sharing, not only in the designated activities, but also in the participants' daily routine. In the "Mirror Me!" activity, a few participants were seen inviting their assigned buddy using this phrase: *"Do you want to try it like this?"* after some guidance from adults. The researcher also noticed that a boy (EC) invited his buddy (AK) using non-verbal cues without any prompting. In the treasure hunt activity of Week 8 (buddy artist), participants helped other pairs to find their "treasure", even if it did not belong to them. They were also willing to share their learning materials

and drawing spaces during the drawing session. Additionally, another daily practice that was observed was that participants were willing to share their meals, which were provided by the school to celebrate Halloween Day. This evidence indicates that children learn to adapt to social norms to have healthy and positive relationships with their peers.

However, it should be noted that the reward system was key to fostering the participants' prosocial behaviours. Due to unforeseen circumstances, the reward system was gradually removed in the post-intervention period, resulting in some of participants returning to their old behaviours as before, which indicates that children rely heavily on extrinsic motivation rather than natural behavioural changes.

Conflict Resolution

Finding also show that the participants' conflict resolution skill was the least improved aspect, although designated activities that focused on this aspect were included. Field notes reveal that when facing disputes, the participants tended to seek an adult for resolution, instead of negotiating properly. For example, a participant (AW) kept reporting to the teacher the involvement of her assigned buddy, rather than trying to address dependency. This behaviour indicates that children are still developing their peer negotiation skills and needed adults' step-by-step scaffolding. This also suggests that children rely more on external reassurance and validation from adults to maintain their emotional state.

Furthermore, at this age, children are still learning to regulate their emotions, and they tend to overact when they encounter unpleasant disagreements with their peers. For example, in Week 7 (Mirror Me!) and Week 10 (High-five Celebration) activities, one buddy pair (a boy and a girl) (JH and HB) displayed two incidences of vexation, including eye-rolling, blaming each other, and reacting in negative tones. This incident shows that their dispute caused negative consequences, instead being solved constructively.

However, after additional scaffolding, participants were observed using polite phrases to deal with conflicts in their daily routines. For example, phrases such as: *"I am sorry, I did not mean to do that,"* were used more frequently, and more reasoning apologies were given when addressing conflicts in Week 6's activity (Kindness mission). This suggests that children must start to learn to handle conflicts independently.

Discussion

The findings demonstrate that a gamified and structured buddy system can potentially improve children's peer interaction in regard to three aspects: communication skills, prosocial behaviour and conflict resolution.

In terms of communication, the findings show a slight improvement in participants' expressive skills and response to their peers during the designated activities and in their daily lives. This suggests that a structured space with sufficient opportunities can enhance their word usage to communicate effectively. From a social constructivist perspective, a practical and meaningful real-life situation, with offers timely facilitation, could help children construct knowledge through interactions, and foster their social-emotional and language development naturally (Lorina, 2025). In a secure setting, they are able to reduce their anxiety in speaking. However, not every child develops communication skills at the same pace due to differences in personalities, language ability, self-assurance and emotional preparedness. This suggests that they need additional scaffolding, such as modelling, to improve their communication skills naturally.

With regard to prosocial behaviour, the patterns observed demonstrate that participants exhibited positive behaviours such as helping, sharing, and using polite language during the social activities and even their daily interactions. This suggests that designated collaborative activities, with detailed demonstrations or modelling, can help children understand the importance of prosocial behaviour. This aligns with the social learning theory which posits that children have a higher possibility of imitating other behaviours through observation when they perceive the presence of incentives (Wong & Lee, 2025).

Also, from a behaviourist perspective, incorporating a reward system and a gamified structure can stimulate children's willingness to display positive behaviours. However, according to National University (2023), a reward system could lead to children relying on extrinsic motivation instead of intrinsic motivation, which might diminish the effectiveness of the buddy system when it is gradually removed. This implies that other approaches should be sought to encourage children's innate social drive, even though rewards can be an initial easier way to motivate children to get started.

Conflict resolution was the least improved aspect in peer interaction, as the participants sought adults' guidance or help to resolve any conflict they encountered. This suggests that children develop important life skills like real-life problem-solving skills and emotional regulation progressively, only after much confrontations and are more likely to seek immediate adult help. This corroborates with Erikson's psychosocial development theory which states that at this age, children are just starting to explore their capability to handle conflict; and in risky conditions, they would experience guilt and seek avoidance. This finding also implies that children require more practice to regulate their emotions, view other standpoints and handle disputes with peers to boost their confidence in a secure environment. However, some unavoidable factors, like emotional state and personality, can affect this ability.

The small but noticeable growth indicates that an ongoing intervention in their daily lives can help develop their sense of initiative.

Conclusion

This study demonstrates that children's daily interactions with their peers could be positively fostered using a structured and gamified peer buddy system that can enhance their communication, positive behaviour and conflict management. It should be emphasised that the individual differences in each child's social readiness and emotional security plays a role in how they respond in peer interactions as well. Hence, educators need to carefully consider each child's differences and provide them with a flexible and appropriate scaffolding when tailoring peer interaction activities to create a risk-free and supportive environment for them to learn. Furthermore, a reward system can be used as a supplemental tool to increase positive interaction in children, but it needs to be used appropriately and strategically to arouse their intrinsic motivation. Overall, to improve a child's interaction with his or her peers should not only take into account the child's development-friendly social activities but also, his or her emotional readiness and self-determination.

There are several limitations of the study that need to be addressed. A small sample size and the lack of buddy rotation limited the findings. It influenced the variability and reliability of the findings because the result was only derived from a particular group of children. Additionally, children's emotional state, natural responsiveness and attendance affected their peer interaction. Due to these natural factors, the individual performance data were inconsistent in reflecting their level of involvement. Further, as the study was conducted during the researcher's practicum period, which was near the end of the year, this did not allow the participants more time and effort to change or modify their ingrained behaviours and mindsets. Also, the lack of positive modelling from educators as a result of poor or non-existent social-emotional skills can affect the child's sociability skills.

Despite the challenges and limitations discussed earlier, the buddy system indicates great potential for boosting children's social interactions. When applied in the classroom, educators can design or modify suitable lessons based on previous outcomes. Also, instead of offering solutions for conflicts, educators can facilitate and help children to consider alternative perspectives to help them find resolutions. However, it is normal and natural for children's personalities to be displayed during their learning journey, which can help to shape their self-representation and learning from experiences by exploring themselves in natural interactions, even if this would strongly affect the effectiveness of this strategy.

Recommendations for Future Study

One of the recommendations for future research is to extend the buddy system period to investigate the sustainability and feasibility of this strategy. A long-term intervention not only guarantees the effectiveness of this strategy, but also may have a great impact on children's peer interaction. Buddies can be rotated or grouped to expand the children's social circle and exposure to diverse perspectives, instead of relying on a particular buddy. Additionally, different approaches apart from the reward system should be incorporated to better support the buddy system, especially in helping to attract children's emotions and motivations. In summary, the buddy system can help children acknowledge their feelings, regulate them, partake in positive behaviour as well as manage conflicts in their interactions with their peers.

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