

## Peer Training Methods for Children and Adolescents with Autism: A Review

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### Abstract

I review how the training of peers is undertaken in peer-mediated interventions for children and adolescents with autism. Common elements of training include peer modelling, peer initiation, peer response, and multiple interaction training for peers. The intent is to provide some practical notions about designing peer involvement for inclusion.

### Introduction

The inclusion movement has been reinforced by the assumption that proximity draws more frequent social contact (a quantitative improvement) and positive social interaction or friendship (a qualitative improvement), as Nakken and Pijl (2002) noted in their review. Given the fundamental role that social interaction plays in society, and its part in normal human development, this appears to be a worthwhile goal. However, this “proximity assumption” does not appear to be sufficient for children with autism, who despite increased opportunities for social contact with typically developing peers through integration or inclusion, still experience low acceptance, reciprocity, and companionship (Chamberlain, Kasari, & Rotheram-Fuller, 2007). While difficulty in social interaction is a major diagnostic sign of autism (American Psychiatric Association, 2000), social interaction is a fundamentally reciprocal process, and factors that might contribute to rare or negative social interaction should be investigated not only in children with autism but also in typically developing children. This may provide a foundation to explain why peer training is necessary for positive social interaction with children with autism. Practical techniques that can be taught to typically developing peers to facilitate interaction, and suitable methods of instruction for imparting these techniques are reviewed.

Databases such as ERIC, PsycINFO, ProQuest, and the Sage full-text psychology collection were searched with search terms “autism”, “peers”, “play”, “social interaction”, “peer-mediated intervention”, “initiation”, “response”, “modelling”, etc. Relevant journals were also searched individually. Only papers reporting subjects as having autism were included; thus both low- and high-functioning autism are included, but Asperger syndrome is excluded, as are more general descriptions of disability.

### Peers’ Perceptions and Acceptance

Social interaction between children with disabilities and typically developing peers does not seem to be straightforward, even in inclusive settings. Initially, similarity, as

perceived by the typically developing peers, is likely to be a critical factor. Buysse, Nabors, Skinner, and Keyes (1997) found that typically developing preschoolers preferred to associate or play with other typically developing preschoolers, rather than children with developmental and cognitive delays. Laursen and Hartup (2002) asserted that social exchange in children's interaction involved cognitive representation and behavioural manifestation based on a norm of equality and need. This is supported by experimental research. For example, based on the reactions of typically developing children to video tapes of a boy actor showing autistic symptoms such as gaze aversion, rocking behaviour, hand clapping, and echolalia, compared with video tapes of the same actor not displaying such symptoms, Swaim and Morgan (2001) concluded that typically developing children had less positive attitudes towards the boy with "autism", regardless of additional information about autism, such as medical causes of autistic symptoms and similarity with themselves.

If typically developing peers do not know about autism—for example, how children with autism behave, communicate, and interact with others—a lack of interaction or negative interaction may be the main consequence, regardless of increased opportunities for social contact resulting from inclusion. To prevent negative relationships and facilitate positive social interactions between typically developing peers and children with disabilities, typically developing peers may need to learn how to initiate and respond to classmates in an appropriate manner, as well as how not to pay attention to, thereby reinforcing, inappropriate behaviours.

### **Peer-mediated Interventions for Children with Autism**

In peer-mediated interventions for children with autism, typically developing peers, and occasionally other peers with mild disabilities, act as tutors, with the aim of improving social interaction in children with autism (the tutees) through natural combinations of play activities. Various interaction skills such as modelling, initiating, and responding have been included as the components of peer-mediated interventions for children with autism to promote reciprocal social interaction between these two groups of children.

#### *Peer initiation and response from children with autism*

Following the notion that high rates of response training may be more beneficial for children with autism because it is likely to get peers to continue to initiate, McGrath, Bosch, Sullivan, and Fuqua (2003) demonstrated a social skill training program for reciprocal social interaction between one boy with autism and eighteen typically developing peers in a local preschool. Appropriate play behaviours were taught to both groups of children. A significantly increased number of positive initiations (from peers) and responses (from the boy with autism) were observed.

Considering that cognitive skills including vocabulary and comprehension of affect are related to initiation by children with autism (Hauck, Fein, Waterhouse, & Feinstein, 1995; Willemsen Swinkels, Buitelaar, & Engeland, 1997), one can make the case that it will be more effective and efficient to teach appropriate response skills to children with autism rather than initiation. This can be accompanied by training typically developing peers how to initiate towards and appropriately respond to children. However, two aspects need to be considered in a long-term usage of the peer initiation approach: trained peers are not always available (Weiss & Harris, 2001) and if children with autism are only encouraged to respond to peers' initiation, their

initiation ability may remain only potential and not occur spontaneously (Odom, Hoyson, Jamieson, & Strain, 1985). Although initiation skill is difficult for children with autism to master, at least some kind or some degree of initiation skill is necessary for children with autism if there is to be reciprocal interaction—a matter of real world importance.

#### *Initiation by children with autism and peer response*

The achievement of improved reciprocal social interaction may need to include training for typically developing children as responders for children with autism, as well as initiation training for children with autism. Compared to response training for children with autism, more favourable outcomes resulted from initiation training Belchic and Harris (1994). Belchic and Harris (1994) employed five typically developing peers merely as responders. Results showed that the children with autism learned to initiate and maintain their play interaction with the peers, and generalized the skills across different settings such as home and playground and different people such as other children with autism and their siblings.

However, there are some limitations in this approach. Firstly, the mere presence of peers may not be sufficient for children with autism to generate self-initiated interaction without systematic prompts or reinforcement by teachers or other adults (Belchic & Harris, 1994). Secondly, the generalisation effect of spontaneous initiating skills was not consistent or not clear (Oke & Schreibman, 1990). Lastly, for appropriate usage of initiation skills in real life, children with autism may need to be trained to repeat it to another peer when a previous initiation was refused, rather than to the same peer (Taylor et al., 2005).

#### *Multiple interaction training for peers with and without training children with autism*

In simple training studies using mainly peer modelling and peer initiating skills (Carr & Darcy, 1990; Strain, 1983), similar aged typically developing peers were often chosen because it was judged that they were socially competent or emitted positive social behaviours towards the child with autism on the basis of compliance with adults' requests. Training methods involved simple verbal commands, modelling to show how to initiate play, encouraging by verbal prompts and reinforcements, sharing play materials, providing physical assistance related to play activities, and peers' practicing these behaviours and statements.

Most recent peer training for interaction with children with autism appears to use multiple components or multiple interaction skills, and is typically accompanied by attempts to improve the social skills of children with autism. Such interventions are often implemented by using different peer arrangements, such as dyad and triad sessions (Sasso, Mundschenk, Melloy, & Casey, 1998), and using peer-nominated peers, high-status peers and low-status peers (Sasso & Rude, 1987). The age chosen for peer tutors seems to depend on the study tasks and the individual research context.

Similarities in peer training with multi-interaction skills is somewhat hidden by the use of different terminology such as peer-mediated intervention (e.g., McConnell, 2002; DiSalvo & Oswald, 2002), peer tutoring (e.g., Rogers, 2000), and pivotal response intervention (e.g., Koegel, Koegel, Harrower, & Carter, 1999). In these peer-mediated interventions, the general aim was to facilitate on-going interaction by using

appropriate initiating and responding skills in both verbal and non-verbal behaviours. Typically, successful outcomes are reported.

Compared to simple training studies, much longer training periods and more intensive training procedures are likely to be required for peers to acquire multiple interaction skills. For example, in one study of peer-mediated intervention aiming for a high rate of communicative interaction with children with autism (Goldstein & Wickstrom, 1986), peers were trained in eleven sessions to learn specific social skills. Verbal instruction, adult modelling, progressive increase of difficulty of tasks, and gradual delay of response for longer periods of time were used as teaching methods in peer training sessions.

In most peer-mediated interventions, teacher prompts are likely to be required to generate and maintain motivation for the peers to continue initiation. For example, Goldstein, Kaczmarek, Pennington, and Shafer (1992) found that social interactions in children with autism were increased with a high rate of general prompting by adults for peers to interact with them (intervention phase). When peers were prompted and verbally praised to interact with the other peer (reversal phase), social behaviours by peers towards the children with autism were reduced. Odom and Watts (1991) found that increased peer initiations and social interactions of children with autism occurred only when the teacher provided prompts. Therefore, systematically fading teacher prompts may be necessary and other methods to maintain peers' motivation need to be considered.

A larger number of typically developing peers can be recruited in more group-oriented peer-mediated interventions. Such interventions have been called the peer buddy approach (Laushey & Hein, 2000), circle of friends approach (Whitaker, Barratt, Joy, Potter, & Thomas, 1998), special friends approach (Schleien, Mustonen, & Rynders, 1995), classwide peer tutoring (Kamps, Barbeta, Leonard, & Delquadri, 1994), cooperative learning group (Kamps et al., 2002), group-oriented contingency (Kohler, Strain, Maretsky, & DeCesare, 1990), and peer network (Garrison Harrell, Kamps, & Kravits, 1997). These group-oriented forms of peer-mediated intervention may be of great practical value in an inclusive classroom context, with the group consisting of all class members, as well as increased generalization effects.

In group-oriented peer-mediated interventions, it is often the case that all classmates, regardless of their developmental status—whether they are typically developing or have other disabilities—are taught how to assist or how to tutor the children with autism. The members in dyads can be rotated so that each child with autism can buddy with different peers. For example, the buddy system approach was used in social skill training for preschool children with and without high-functioning autism because it promoted higher frequencies of occurrence of appropriate social interactions between these two groups of children than the passive proximity approach (Laushey & Hein, 2000). Hughes et al. (2002) also used this kind of approach for high school students with intellectual disabilities and autism to be assisted and supported in their academic work and extracurricular activities by peer buddies who are enrolled in one-credit peer buddy course.

Similarly, in classwide peer tutoring, peer networks, cooperative learning, and group-oriented contingency, a number of peers work together with the children with autism in a tutor-tutee relationship to complete assigned tasks. Kamps et al. (2002) claimed that cooperative learning groups having trained peer tutors for vocabulary and social studies curriculum were better than social skills groups and control groups in order to increase the higher generalization effects of social behaviours in children with autism.

Some limitations and obstacles in actual implementation of classwide peer tutoring need to be considered. If this classwide peer tutoring is implemented for older children, it may well be important to consider the ability or academic performance level of children with autism, as well as to control the difficulty level of cognitive tasks. Also, some kinds of reinforcements for the group performance, not individual performance, are likely to be essential (Piercy, Wilton, & Townsend, 2002). Kohler et al. (1990) made the criticism that these kinds of group-oriented reinforcement contingency approaches did not produce consistent levels of supportive peer behaviours although they produced increased frequency of interaction with children with autism. The interaction behaviours of peers in these kinds of group contingency might only result from a desire to obtain points in relation to academic tasks, rather than any intent to form social relationships with children with autism.

Lastly, for teenagers or adults with autism, a peer network approach can be designed to remove or minimize direct involvement by adults or teachers in the intervention phases. Compared to the classwide peer tutoring, the peer network approach also enables groups of typically developing peers to support individuals with autism in a variety of social activities rather than in academic tasks. Peer members are recruited voluntarily on the basis on having known each other in a mainstreamed class, having common interests and hobbies in sports and music, or sharing an on-campus job. It seems to be effective for individuals with autism to establish and maintain on-going and age-appropriate interactions promoting friendship by positive social environment in natural social contexts. Increased frequency and quality of social interaction between the peer members and target students with autism may produce expanded friend activities in out-of-school social events in natural contexts such as after school, or on weekends. Therefore, the peer network approach is likely to be related to quality of life for individuals with autism in terms of social inclusion by establishing friendship through peer networks (Haring & Breen, 1992).

## **Conclusion**

Despite successful research outcomes of peer tutoring approaches, the use of peer-mediated interventions appears to be rare in schools. In practice, educators are not likely to be aware of the positive and negative functions of peers in the quality of life of children with autism, or to recognise the capacity of trained peers for social interaction with children with autism, or have the skill to implement a peer-training program for children with autism. One impediment is concern about interference in the academic learning of peers (Gandhi, 2007). However, it has been shown (Rankin et al., 1999) that group lessons with students with disabilities including autism do not produce decreased gain scores for other typically developing students—effective instruction and teaching strategies appear to be more important for group lessons than the presence or absence of students with disabilities.

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