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A peer-mediated intervention to improve the conversational skills of high school students with Autism Spectrum Disorder



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ABSTRACT

Background: Social-communication deficits of adolescents with Autism Spectrum Disorder (ASD) can significantly interfere with their participation in high school activities, where conversation is the primary mode of social interaction. The purpose of this study was to extend the social-communication research in high school settings by the evaluating use of a peer-mediated intervention (PMI) during lunch on the conversational skills of three adolescents with ASD who were observed to be passive or reluctant conversationalists. *Method:* A multiple-baseline design across participants was used to assess the effects of teaching typical peers strategies for facilitating conversation with the focal students. Peers served as the primary interventionists, but as in other PMI research, we also incorporated the use of written text cues and direct instruction for the focal students, with the aim of

using text cues flexibly for a more natural conversation. *Results:* Results indicated improvements in focal students' conversational skills including an increased number of conversational acts, initiations, and follow-up questions, and longer conversational episodes with peers. Overall assertive acts (i.e., responses not contingent upon peer requests) also increased, suggesting that the once passive conversationalists were becoming more assertive. Social validity outcome measures attested to the acceptability of the PMI and the quality of conversation between focal students and peers.

Conclusions: The results of this study provide preliminary evidence that PMI can produce substantial and socially-validated conversational outcomes for high school students with ASD.

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1. Introduction

Social-communication difficulties of adolescents with Autism Spectrum Disorder (ASD) can significantly interfere with their full participation in high school social activities where conversation is the primary mode of social interaction (Carter et al., 2014). The increased demand for social conversation during adolescence often serves to widen the social gap between students with ASD and their typically developing peers, leaving many teenagers with ASD marginalized and socially isolated

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(Church, Alisanski, & Amanullah, 2000; Locke, Ishijima, Kasari, & London, 2010). Interventions are needed to address conversational difficulties and prevent them from negatively affecting future adult friendships, employment, mental health, and overall quality of life (Hendricks & Wehman, 2009). At a time when conversation skills are most needed, intervention should be a priority; however, researchers (e.g., Bellini, Peters, Benner, & Hopf, 2007; Kucharczyk et al., 2015; Reichow & Volkmar, 2010) have consistently documented the relative absence of social-communication interventions for this age group.

Common conversational deficits identified in individuals with ASD include difficulties with initiating (i.e., starting conversations and introducing new topics), maintaining and extending topics of conversation by commenting and asking follow-up questions, and sustaining reciprocal responses or multiple turns within conversations (Jones & Schwartz, 2009; Paul, Orlovski, Marcinko, & Volmar, 2009). These conversational difficulties may vary widely across individuals with ASD, requiring individualized interventions. Although not specifically developed for those with ASD, Fey's (1986) conversation classification model is useful for understanding the various ways conversation can break down for this population, and could assist with assessing and targeting complex behaviors needed for effective conversation. Fey described three types of ineffective conversationalists. The passive conversationalist responds to partners' requests for communication, but rarely engages in assertive acts (i.e., responses that are non-contingent upon partners' requests) such as initiating, commenting, or asking questions to maintain or extend conversation. The inactive or reluctant communicator rarely engages in assertive conversational acts, and in addition is highly unresponsive to partners' requests and may actively avoid interaction. The verbal non-communicator engages in frequent assertive conversational acts, but is highly unresponsive to conversational partners' requests and interests (i.e., dominates conversation, shows little interest in what others say). According to Fey, the ultimate goal of conversation intervention is to help ineffective conversationalists become active conversationalists who are appropriately assertive and responsive to their partners' communications.

In addition to individualization, effective interventions for this population must include strategies that result in improved social-communication competence in natural settings (Rao, Biedel, & Murray, 2008). Peer mediated intervention (PMI) is one approach that has been successfully used to improve social-communication skills in individuals with ASD (e.g., Hochman, Carter, Bottema-Buetel, Harvey, & Gustafson, 2015; Kamps, Mason et al., 2014; Kamps, Thiemann-Bourque et al., 2014; Thiemann & Goldstein, 2004), and is considered to be an evidence-based practice by both the National Professional Development Center on ASD (Wong et al., 2015) and the National Autism Center (NAC, 2015). With this approach, typically-developing peers are taught strategies for social interaction, thus expanding the availability of supportive partners and increasing opportunities for individuals with ASD to learn and practice new skills in natural contexts. Because peers are the natural experts in age-appropriate conversation, PMI would appear to be an excellent fit for high school students with ASD (Carter et al., 2014).

Although comprehensive reviews (e.g., Chan et al., 2009; Watkins et al., 2015) indicate that PMI has produced a range of social outcomes, relatively few PMI studies have focused specifically on improving the conversational skills of students with ASD (e.g., Kamps, Mason et al., 2014; Kamps, Thiemann-Bourque et al., 2014; Thiemann & Goldstein, 2004). This paucity of research may be due to the challenges of teaching and measuring complex communication behaviors that facilitate ongoing reciprocal interactions with a social partner (Goldstein, Schneider, & Thiemann, 2007).

In PMI studies targeting conversational skills, researchers (e.g., Ganz et al., 2012; Kamps, Mason et al., 2014; Kamps, Thiemann-Bourque et al., 2014) have often incorporated other evidence-based components (NAC, 2015) such as direct student instruction of specific communication skills and the use of written text cues and scripts, with peer training to enhance intervention effectiveness. For example, in a study involving five elementary-age boys with ASD, Thiemann and Goldstein (2004) found that teaching typical peers facilitative strategies to support conversation impacted four of the five children's overall initiations and contingent responses. However, improvements in all the boys' specific communication skills – initiating comments, making compliments, and initiating requests for information – occurred only following systematic instruction of these skills using written text cues for the children with ASD. In addition, the average number of sequential utterances per conversational episode increased over baseline levels for all five boys by the end of the written text instruction, suggesting that they engaged in longer reciprocal responses or multi-turn conversations with their peers.

More recent studies have also documented the effectiveness of a multicomponent PMI approach. Kamps, Mason et al. (2014) used a multiple-baseline design across participants to evaluate the impact of a peer network intervention that combined peer training and direct instruction on specific social-communications skills of four elementary students with ASD during free play. Training involved explicit social skills instruction combined with visual cues within the context of peer networks. Results showed substantial increases in total communication acts (combined initiations and responses) and specific communication skills (e.g., comments, requests to peers) for all four participants with ASD during peer network sessions. In addition, generalization probes during classroom centers showed increased communications following intervention for three of the four participants. In a larger randomized control group study, Kamps, Thiemann-Bourque et al. (2014) compared the effects of a similar peer network intervention on 56 kindergarten and first-grade children with ASD with 39 children in a comparison group. Results showed that children in the PMI group displayed significantly more initiations to peers than did the comparison group during non-treatment social probes and generalization probes. In addition, children in the PMI condition also showed more growth in language and adaptive communication, and treatment session data showed significant growth for total communications over baseline levels.

PMI for high school students with ASD was first introduced in by Haring and Breen (1992), but has been slow to emerge (Chan et al., 2009; Wang et al., 2011; Watkins et al., 2015). Recent studies by Gardner et al. (2014) and Hochman et al. (2015)

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