



## Programs Supporting Young Children's Language Development

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### **Topic**

*Language development and literacy*

### **Introduction**

In this paper we document recent evidence of effective language approaches for children with severe language delays, secondary to autism or other developmental disabilities (DD). Following a discussion of some current challenges in the field, we describe an early language intervention model, and the need to foster and measure success in implementation of such approaches by caregivers, early interventionists and other adults. The paper concludes with a discussion of two research priorities necessary to move the field forward in developing optimal language interventions – further longitudinal analyses of the efficacy of different treatment approaches based on specific treatment and child variables, and the potential impact of differential treatment intensity.

### **Subject**

We know that children with delayed or disordered language are at increased risk for social, emotional and behavioural problems.<sup>1,2,3,4</sup> Early intervention programs that utilize the most effective language intervention approaches will likely impact children's later communication performance and social relationships.

Fortunately, achievements have been reported in the early detection of language delays and disorders,<sup>5,6</sup> and in our knowledge of settings, programs and approaches that enhance optimal language development. Critical components of comprehensive early language intervention programs and recommended language teaching strategies include:

- 1) *prelinguistic milieu teaching (PMT)*<sup>7,8</sup>
- 2) *milieu teaching*, which consists of incidental teaching<sup>9</sup> and mand-model procedures<sup>10</sup>
- 3) *responsive interaction approaches*,<sup>11</sup> including growth recasts,<sup>12,13</sup>
- 4) *direct teaching* of specific language targets using adult directed strategies.<sup>14</sup>

A brief overview of each of these strategies is provided below. The references above provide more detailed descriptions for interested readers.

Language intervention programs require ideal situations and contexts for language learning that support the use of effective approaches. For example, enabling contexts<sup>15</sup> that set the stage for language learning within caregiver-child interactions, include:

- a) creating communication opportunities (e.g., keeping toys out of reach, violating expected routines),
- b) following the child's lead by providing activities of interest to child, and
- c) building and establishing social routines (e.g., rituals such as peek-a-boo or pat-a-cake).

Similarly, routine-based interventions provide an ideal scaffold and context for teaching.<sup>16,17</sup> Within enabling contexts and routines, one can use any of the milieu teaching, responsive interaction, direct instruction or direct language teaching approaches described below to promote language learning in natural environments.

Once the social interaction environment is arranged, the adult can then provide specific teaching techniques to prompt, model and acknowledge or reinforce clear, intentional communication attempts within child-centered play routines. These strategies are called "*prelinguistic milieu teaching techniques*," and are used to help children who are not yet speaking to transition from preintentional to intentional communication.

*Milieu teaching approaches* consist of specific teaching techniques embedded within a child's ongoing activities, interactions and social routines. Two such techniques are called mand-model and incidental teaching procedures. Mands are typically adult questions, commands or directives. Using this strategy, an adult would initiate the teaching episode by asking a question that would require a specific response from the child (e.g., a ball is up on the shelf and the adult says, "What do you want?"). In an incidental teaching episode, the adult waits for the child to initiate and then prompts for a more complex response (e.g., the child reaches for the ball, and the adult says, "Can you say *ball*?"). Common features of both techniques include:

- a) following the child's lead;
- b) arranging the environment to indirectly or directly prompt child productions with more explicit mands;
- c) natural social consequences, and
- d) targeting specific gestures, vocabulary or language structures.

*Responsive interaction* includes teaching caregivers to be highly responsive to the child's communication attempts by following the child's lead, waiting for the child to initiate, responding by commenting on actions or toys of interest and modeling language.

*Direct teaching* is characterized by prompting, reinforcing, and giving immediate feedback on grammatical or vocabulary targets in structured and scripted sessions. Recasting and direct teaching approaches are particularly suited for children at risk or with minor speech and language delays. A recast occurs when the adult expands or modifies a child's utterance by adding new syntactic or semantic information.<sup>18</sup> Recasts may help children make comparisons and distinguish differences between their own

utterance and the adult's recast of that utterance, which may facilitate acquisition of new grammatical or semantic structures.<sup>11</sup>

### **Problems**

Over 70% of children ages 3–5 years identified with a disability have delayed communication and language development,<sup>19</sup> and this is the single most common reason for special education referral.<sup>20</sup> One of the primary challenges will be to move research findings into everyday practice. To remediate these deficits early on, widespread training is needed for early interventionists and parents, on how to use responsive interaction styles and other effective interventions in early intervention and home settings.<sup>21,22</sup>

### **Research Context**

Empirical data are emerging on the effectiveness of language intervention procedures following larger scale comparative, longitudinal intervention studies that (in some recent cases) employ true experimental designs with random assignment of subjects to contrasting treatment conditions.<sup>7,23-29</sup> Findings provide support for a developmental model of early communication and language development. This model views the amount and quality of language input a child receives as crucially important, and encourages the use of distinctive approaches at different stages in development.<sup>30</sup>

### **Recent Research Results**

Research suggests that if a child's average Mean Length of Utterance (MLU) is greater than 2.5, responsive interaction approaches are more effective than milieu teaching; milieu teaching strategies are more effective for children with an MLU below 2.0.<sup>28,29</sup> Yoder and Warren<sup>29</sup> reported that children with highly responsive and more educated mothers benefited the most from prelinguistic milieu teaching (e.g., parents taught to prompt, model and reinforce intentional communication). Children with less responsive, less educated mothers benefited more from approaches focusing on following the child's lead and responding to communication attempts.

For children not yet speaking or with limited expressive vocabulary, treatment approaches have been developed to target intentional non-symbolic skills thought to be critical for the later emergence of intentional symbolic (expressive language) skills.<sup>31,32</sup> For example, the intervention might focus on intentional communication by facilitating coordinated joint attention to direct an adults' attention to an object using unconventional or conventional gestures, vocalizations or words. Over the past few years, several randomized controlled studies have been published examining differential effects of specific language intervention approaches on improving intentional communication of young children with DD. One such approach, responsive education/prelinguistic milieu teaching (RE/PMT), includes both direct, regular intervention sessions with the child and parent training to ensure high levels of responsiveness. The premise of this combined approach is that a higher level of responsivity is by itself not adequate to substantially improve the communication of young children with developmental disabilities.<sup>33</sup> In one of the first studies to support this argument, Yoder and Warren<sup>34</sup> successfully trained paraprofessionals to implement a combined RE/PMT intervention, and found modest

effects on communication behaviours of young children with limited language at the start of the study.

In a replication of this study, Fey et al.<sup>23</sup> trained speech-language pathologists to implement RE/PMT to 51 toddlers with DD. Although they reported significantly more intentional communicative acts after six months of treatment for children receiving RE/PMT, compared to children not receiving treatment, Warren et al.<sup>26</sup> found that the effect was not maintained six months later. Therefore, Warren et al.<sup>26</sup> recommended that clinicians implement RE/PMT longer than six months and at a higher frequency; with the caveat that we still need empirical data to show effects of lengthier treatment periods and/or more intensive treatment sessions as a supplement to community-based interventions. Treatment intensity is also an important variable in the effectiveness of treatments for language impairment secondary to autism.<sup>35</sup>

The developmental model is also relevant for the treatment of children with autism, Yoder and Stone<sup>24,25</sup> conducted two studies to compare RE/PMT and the Pictures Exchange Communication System (PECS) on spoken words and joint attention of 36 preschoolers with autism. Treatment was provided for 24 hours over a six-month period. Results revealed that children who received PECS treatment expressed more spontaneous words compared to those in RE/PMT. Six months later, however, PECS treatment effects were maintained only for children who initially explored a higher number of different toys in play. Furthermore, RE/PMT was of greater benefit to children with higher rates of joint attention, possibly due to the ability to imitate adult models and stronger motivation by the social consequences of their acts.

### **Conclusions**

A developmental model of early language intervention has been proposed, which assumes that no one approach is appropriate to remediate the range of communication skills children need as they progress from prelinguistic to linguistic communication. Recent treatment comparison studies are reporting differential treatment outcomes based on initial child characteristics. Research is demonstrating the importance of attending to child abilities (e.g., play skills, joint attention, MLU), family characteristics (e.g., parent education and responsiveness), and the need to train early interventionists (e.g., parents, paraprofessionals, speech language pathologists) so as to tailor treatment programs based on these factors. More recent longitudinal intervention studies have provided a stronger foundation for RE/PMT language approaches to improve communication skills in young children with autism and DD, with severe language delays.

### **Implications**

The next phase of research necessitates additional studies that examine varying levels of intensities for different treatments, agree on common definitions for ‘intensity,’ and governmental funding of differential treatment intensity research. Collectively, future research should be aimed at:

- (1) continuing to refine this developmental model based on additional longitudinal, comparative analysis of the relative efficacy of different treatments in relation to

- specific treatment and learner characteristics, treatment goals and instructional contexts,
- (2) examination of intensity dose and/or length of treatment necessary to maintain communication progress and enhance later language outcomes.<sup>35,36</sup>

**To learn more on this topic, consult the following sections of the Encyclopedia:**

- [How important is it?](#)
- [What do we know?](#)
- [What can be done?](#)
- [According to experts](#)
- [Key messages](#)

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