



Programs Supporting Young Children's Language Development

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Topic

Language development and literacy

Introduction

The purpose of this paper is to provide current research findings and recommendations on programs and intervention approaches that promote young children's language acquisition. The paper focuses on children from birth to five years of age with mild to severe language delays or disorders, including at-risk children. Following a discussion of some current challenges in the field of early language intervention, we describe recent progress in meeting these challenges and present an emerging early language intervention model. We then summarize important research findings related to evaluating program outcomes, measuring the impact of effective programs on children's language development, and fostering adult (eg, parents, caregivers, early interventionists) participation at home and in the community. The paper concludes with a discussion of the implications of these language intervention and research issues for families, policy-makers, and the general public.

Subject

We know that children with delayed or disordered language are at increased risk for social, emotional, and behavioural problems.^{1,2,3} Based on the assessment results of over 200 preschoolers attending Head Start programs, Kaiser and colleagues found that compared to their peers without behaviour problems and average social skills, preschoolers with behaviour problems had lower receptive and expressive language scores, and below-average social skills.⁴ Research also suggests that preschool children with delays in communication, particularly those with significant receptive deficits, are less likely to be socially accepted among their peers and have reciprocal friendships.⁵ Although much more research is needed to better understand the relationship between children's language acquisition and social emotional development, early language intervention programs that utilize the most effective intervention approaches will likely impact children's later communication and social performance.

Fortunately, remarkable achievements have been reported in the early detection of language delays and disorders,^{6,7} and in our knowledge of contexts/settings, programs,

and approaches that enhance optimal language development. From this large body of literature, critical components of comprehensive early language intervention programs have emerged. Recommended language teaching strategies include:

- 1) *prelinguistic milieu teaching (PMT)*^{8,9}
- 2) *milieu teaching*, which consists of incidental teaching¹⁰ and mand-model procedures¹¹
- 3) *responsive interaction approaches*,^{12,13} including growth recasts,^{14,15}
- 4) *direct teaching* of specific language targets using adult directed strategies (See reference 16.).

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

When planning language intervention programs, providing ideal situations and contexts for language learning that supports the use of various effective approaches is of utmost importance. For example, enabling contexts¹⁷ that set the stage for and support language learning within caregiver-child interactions, include:

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

Similarly, routines based interventions provide an ideal scaffold and context for teaching.^{18,19} That is, predictable and familiar routine events are used to facilitate child responses, and offer families and caregivers many teaching and learning opportunities throughout the day. Within enabling contexts and routines based instruction, one can use any of the milieu teaching, responsive interaction, direct instruction or direct language teaching approaches described below to promote functional language learning in natural environments.

Once the social interaction environment is arranged, the adult can then provide specific teaching techniques to prompt (eg, time delay and verbal prompts), model (vocal or gestural models of desired communicative responses) and reinforce (eg, acknowledge the child's intent/meaning by naming things the child refers to) 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, and from presymbolic to symbolic communication.

Milieu teaching approaches consist of several specific teaching techniques embedded within a child's ongoing activities, interactions, and social routines (The term "milieu" means environment.). Two of these 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 (or target skill) from the child (eg, 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 communication (verbally or with gestures), then prompts the target

response by requesting a more complex child response (eg, the child reaches for the ball, and the adult says, “Can you say ball?”). Common features of these procedures include:

- a) following the child’s lead
- b) arranging the environment (eg, placing toys out of reach) to indirectly prompt child productions or to directly prompt child with more explicit mands (eg, asking questions like “What do you want?”, or asking a child to imitate (eg, “Can you say ‘cookie?’”)
- c) natural social consequences (eg, access to a desired toy through adult assistance)
- d) targeting specific language skills (eg, early word combinations such as agent + action — “Daddy eat,” or action + object — “Throw ball”); vocabulary; gestures to request or comment.

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 to the child’s focus of attention by commenting on actions or toys of interest and modeling language (eg, labels, expansions, extensions).

Direct teaching is characterized by prompting, reinforcing, and giving immediate feedback on grammatical or vocabulary targets within highly 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.²⁰ 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.¹²

Problems

We have made substantial progress in identifying the early predictors of later language development (eg, babbling, showing, giving, and requesting objects using gestures and vocalizations, and vocabulary comprehension;²¹), and documenting approaches that can lead to enhanced language outcomes for young children. However, many challenges remain. One of the primary challenges will be to move research findings into everyday practice. Over 70% of children ages 3–5 years identified with a disability have delays and disorders of communication and language development,²² and this is the single most common reason for special education referral.²³ Only a few comprehensive assessment tools exist (eg, Communication and Symbolic Behaviour Scales²⁴) to measure deficits or delays early in development, and the tests that are available are not widely used by clinicians. Language deficits beginning in early childhood can have a ripple effect throughout a child’s life, which may directly or indirectly affect social opportunities, career options, and an individual’s overall quality of life. To remediate these deficits early on, widespread training is needed for early interventionists, parents, and childcare practitioners on how to use responsive interaction styles and other effective intervention practices in day-to-day early intervention and home settings.^{25,26} The need to address this challenge is heightened by recent evidence demonstrating that some teaching strategies by themselves may not be sufficient to ensure optimal language outcomes,^{27,8} various approaches may be more effective at different points in a child’s development,²⁸ and the

context or type of activity (eg, play-dough, book reading) can strongly influence level of caregiver responsiveness.²⁹ Another challenge in language development is the lack of resources and support needed to provide children with daily opportunities to interact with highly responsive adults; and if necessary, receive additional language stimulation approaches (eg, direct instruction, one-on-one sessions) from trained early interventionists.

Research Context

Over the past three decades, numerous studies have been conducted to develop and examine different procedures or treatment “packages” to enhance the communication and language development in children with mental retardation and developmental disabilities. The movement towards basing treatment and educational practices for young children on empirical evidence has resulted in a number of exemplary reviews summarizing speech and language interventions for children with more severe language deficits associated with autism (eg,³⁰), trends in intervention research (eg,³¹), and evidence-based practices in the field of early intervention/early childhood special education (eg,³²). The majority of experimental research documenting treatment effectiveness for enhanced language and social outcomes is based on single-subject research methods, involving small numbers of children over limited periods of time. Although few in number, empirical data are emerging on the effectiveness of recommended language intervention procedures following larger scale descriptive and comparative, longitudinal intervention studies that (in some recent cases) employ true experimental designs with random assignment of subjects to contrasting treatment conditions.^{33,28,8,34} This impressive body of research provided a framework for a developmental model of fostering early communication and language development. This developmental model

- 1) views the rate and quality of language input a child receives as crucially important for their optimal development
- 2) supports the use of different approaches at different stages in a child’s development based on the nature of the intervention goal.²⁷

For young children with more significant social and communication disorders (eg, autism), this would include attention to learning style and temperament.

Key Research Questions

- What differential effects do the recommended communication interventions have on young children’s language development?
- How should programs and services be evaluated?
- How do we move recent research findings and developmental models of language interventions into widespread practice?

Recent Research Results

Recent research suggests that if the average length of a child’s spoken utterance, that is their Mean Length of Utterance (MLU), is greater than is 2.5, responsive interaction approaches are more effective than milieu teaching; and milieu teaching strategies are more effective for children with an MLU below 2.0.^{35,28} Milieu techniques may be more effective at this point in a child’s development due to limitations in attentional and memory resources necessary to learn from responsive interaction approaches such as

recasts and expansions. For children who are not yet talking, language intervention targets should include critical communication skills that typically develop during the first year of life and contribute to later receptive and expressive language development.^{36,9,34}

In the first and only randomized experiment examining the effect of two prelinguistic communication interventions, Yoder and Warren³⁴ reported that children with highly responsive and more educated mothers benefited the most from prelinguistic milieu teaching. Children with less responsive mothers who had lower levels of formal education benefited most from a modified responsive small group intervention in which the adult followed the child's lead and responded to his communication attempts, but did not use communication prompts and imitation. Intentional communication occurs when a child uses

- a) coordinated joint attention to direct an adults' attention to an object using unconventional gestures or vocalizations, or
- b) uses conventional gestures or words to communicate (eg, requests or comments to an adult).

For children between birth and two years, or children who are not yet speaking (ie, prelinguistic), research demonstrating improvements in intentional communication have important implications for those who show clear delays in these critical early communication skills, and those at risk for language delays or disorders associated with (for example) mental retardation.^{37,38} For children with autism spectrum disorders, effective interventions provided before 3 years of age can have a more significant impact on early social, communication, and behavioural skills than if intervention is provided after age 5.³⁹

Now that we have strong evidence on specific language intervention techniques that can enhance language acquisition in young children, how do we ensure the fidelity of these treatment approaches in early intervention and home programs, and what outcomes do we measure to assess program effectiveness? Investigators of language and social communication interventions for children with disabilities have begun to emphasize the importance of multiple outcome measures, that not only assess changes in isolated target skills, but also are ecologically valid and attend to caregiver and consumer perceptions and concerns.^{40,41,7} Fortunately, a review of trends in intervention research over the last 20 years by Dunlap and colleagues suggest that more studies are now focusing on children ages 0 to 5 years, with researchers spending more time in regular education using more typical social contexts.³¹ These authors also reported an increase in social validation measures, but only within recent years. Future research should make a concerted effort to continue on this path by

- 1) creating additional assessment tools to identify infants and toddlers with language delays or disorders, or those at risk
- 2) collecting data in multiple contexts and across multiple conversational and play partners
- 3) measuring meaningful changes in child and adult outcomes, and the relationship between specific approaches and child–family characteristics
- 4) evaluating and responding to the needs of teachers, caregivers, early interventionists, and other team members.

As greater emphasis is being placed on basing early language intervention services on empirically supported practices, and defining early learning standards,⁴² it will be essential for researcher and practitioners to work together to move research findings into day-to-day practice. This move will require a transdisciplinary approach, with a more concerted and determined effort by all adults invested in the child's development. Identified family activities, caregiver routines, and school play times can be used to assess children's prelinguistic or linguistic development, with planned responsive interventions embedded in these natural environments. Children may also require direct instruction to learn advanced or higher-level language skills (eg, parts of speech such as past tense verb markers or irregular plurals, and more abstract language concepts) through multiple trials, prompts and reinforcement. Developing effective interventions based on the developmental model of early language interventions will require continued research, examining the relative efficacy of different language intervention approaches, and between specific approaches and individual child characteristics. To this end, highly trained scientists will have to conduct well-designed, comparative and longitudinal intervention studies with randomly assigned, matched control samples.

Conclusions

A developmental model of communication and language intervention has been proposed, based on which specific types of adult input are most effective at various points in a child's development. This model assumes that no one strategy or treatment package will be appropriate to enhance or remediate the wide range of skills children need as they progress from prelinguistic communication to more sophisticated linguistic development and reading. It is likely that a continuum of language intervention strategies may be necessary, such as elicited production prompts, models, and contingent adult input to improve early receptive and expressive vocabulary and 2- to 3-word semantic relations for young children; and using growth recast techniques, responsive interaction techniques and direct teaching to facilitate the acquisition of new semantic and syntactic forms for children with higher language levels. These approaches are likely to be particularly effective for children with developmental disabilities and language delays or disorders when provided within highly responsive environments and surrounded by adults (eg, parents, childcare workers, and early interventionists) with responsive interaction styles. Future research aimed at longitudinal, comparative analysis of the relative efficacy of different treatments and between (for example) a specific treatment and learner characteristics, treatment goals, and the instructional context will assist in refining and confirming this developmental model. These types of research may lead to cost-effective, implementation of optimal interventions with sufficient intensity to affect a child's language, social and emotional development trajectory as much as possible.

Implications

Issues of early identification and comprehensive assessments, and providing highly responsive environments early on must be addressed by changes in social-policy initiatives. Further development and the day-to-day implementation of effective language approaches and ongoing measurement of impact on children's social development and emotional well-being will require a commitment to programs that support service delivery to young children (eg, Part B and C of US federal and state-funded agencies),

and the provision of substantial resources to support the work of highly trained scientists. For example, as the intensity and treatment needs increase for children ages 3 to 5 years, additional funds should be available from Part B early intervention programs, to prepare children to meet the cognitive, linguistic, and social demands of the elementary school years and beyond. Given the critical role language and social development play across a life span, and the increased potential for child and family success, translating early language intervention research into widespread practices is an essential and achievable immediate goal.

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