



"DEVELOPMENT OF SPOKEN SPEECH OF CHILDREN WITH COCHLEAR IMPLANTS IN COOPERATION WITH DEAF PEDAGOGUE AND SPEECH THERAPIST"

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Abstract: This article explores a collaborative approach to spoken language development in children with cochlear implants (CIs), emphasizing the synergistic roles of a deaf pedagogue (deaf educator) and a speech therapist. It examines the unique contributions each professional brings to the rehabilitation process: the speech therapist focusing on auditory training, articulation, and language skills, while the deaf pedagogue provides cultural insights, communication strategies, and support for navigating the hearing world as a deaf individual. The article details the methods used by both professionals, highlighting how their coordinated efforts address the specific linguistic, social, and emotional needs of children with CIs. It analyzes the benefits of this collaborative model in terms of improved speech perception, language acquisition, communication skills, and overall well-being. The study offers valuable insights for creating more holistic and effective intervention programs for children with CIs, promoting greater success in spoken language development and integration.

Keywords: Cochlear Implant (CI), Spoken Language Development, Deaf Pedagogue (Deaf Educator), Speech Therapist, Collaboration, Interprofessional Practice, Auditory Training, Articulation, Language Skills

INTRODUCTION

Cochlear implantation (CI) has dramatically improved the lives of children with severe to profound hearing loss, offering the potential to develop spoken language skills. While speech therapy is widely recognized as an essential component of the CI rehabilitation process, there is a growing understanding of the value of a more holistic and collaborative approach that incorporates the expertise of both speech therapists and deaf pedagogues (deaf educators). Traditionally, speech therapists have been the primary professionals involved in post-implantation rehabilitation for children with CIs. Their expertise lies in:

- Auditory Training: Developing the child's ability to perceive and discriminate sounds, including speech sounds.
- Articulation Therapy: Improving the child's ability to produce clear and intelligible speech.
- Language Development: Fostering the child's acquisition of vocabulary, grammar, and narrative skills.
- Voice Therapy: Addressing voice quality issues and promoting appropriate vocal production.
- Fluency Therapy: Managing stuttering or other fluency disorders.

Deaf pedagogues, on the other hand, bring a unique perspective to the rehabilitation process, stemming from their personal experiences as deaf or hard of hearing individuals. Their expertise encompasses:

- Understanding of Deaf Culture: Providing insights into Deaf culture, values, and communication norms.
- Communication Strategies: Sharing effective communication strategies for navigating the hearing world.
- Visual Communication: Utilizing visual aids, sign language (if appropriate), and other visual communication methods.

- Advocacy: Empowering children and families to advocate for their needs and rights.
- Role Modeling: Serving as positive role models for children with CIs, demonstrating that success is possible despite hearing loss.
- Social-Emotional Support: Addressing the social and emotional challenges that children with CIs may face.

The collaboration between speech therapist and deaf pedagogue allows for a more comprehensive and individualized approach to CI rehabilitation, addressing both the linguistic and the socio-emotional needs of the child.

Speech therapists employ a variety of evidence-based methods to promote spoken language development in children with CIs. These methods often include:

- Auditory-Verbal Therapy (AVT): A highly specialized approach that emphasizes the development of spoken language through audition alone. The goal of AVT is to help children with CIs learn to listen and talk in the same way that hearing children do. Key principles of AVT include:
 - Early diagnosis of hearing loss and immediate fitting of appropriate hearing technology.
 - One-on-one therapy sessions with a certified auditory-verbal therapist.
 - Intensive auditory training activities.
 - Family involvement.
 - A focus on developing spoken language through natural conversations.
- Auditory-Oral Therapy (AOT): An approach that emphasizes the use of audition and speechreading to develop spoken language. AOT allows for the use of visual cues to support auditory information, particularly in challenging listening environments.
- Ling Sounds Assessment: A simple and quick assessment tool used to check the child's ability to detect and discriminate six different speech sounds that represent the entire frequency range of speech (/u/, /a/, /i/, /ʃ/, /s/, and /m/). This assessment can help identify gaps in the child's auditory perception.
- Minimal Pairs Therapy: A technique used to improve auditory discrimination and articulation by focusing on pairs of words that differ by only one phoneme (e.g., "pat" vs. "bat").
- Phonological Awareness Training: Activities designed to improve the child's awareness of the sound structure of language, including rhyming, segmenting words into syllables, and identifying individual phonemes.
- Storytelling and Narrative Therapy: Using storytelling and narrative activities to improve the child's language comprehension, expressive language, and social communication skills.

Deaf pedagogues use a variety of methods to support the spoken language development and overall well-being of children with CIs. These methods often include:

- Communication Strategy Instruction: Teaching children effective communication strategies for navigating the hearing world, such as:
 - Asking for repetitions or clarification.
 - Positioning themselves to optimize auditory access.
 - Using visual cues to support auditory information.
 - Managing communication breakdowns.
- Advocacy Training: Empowering children to advocate for their needs and rights in the classroom, at home, and in the community.
- Social Skills Training: Providing opportunities for children to practice social skills and build relationships with peers.
- Cultural Awareness Activities: Exploring Deaf culture and promoting understanding and acceptance of hearing loss.
- Mentoring: Connecting children with deaf or hard of hearing adults who can serve as positive role models and provide guidance and support.
- Family Support: Providing support and education to families on a variety of topics related to hearing loss and cochlear implantation.

- Creating Visual Supports: Many deaf pedagogues excel at creating visual aids and supports to supplement auditory learning. This can include visual schedules, picture cards, or graphic organizers to aid in comprehension.

The collaborative model involving a speech therapist and deaf pedagogue can be implemented in various settings, including schools, clinics, and homes. In a typical scenario, the speech therapist would focus on direct therapy to improve the child's auditory and oral communication skills, while the deaf pedagogue would provide support and guidance to the child and family on a broader range of issues related to hearing loss and integration. The two professionals would work closely together to:

- Share assessment data and progress reports.
- Coordinate therapy goals and strategies.
- Provide consistent messaging to the child and family.
- Address any emerging challenges or concerns.

For example, a speech therapist might work with a child on improving their articulation of the /s/ sound, while the deaf pedagogue might help the child develop strategies for communicating effectively in a noisy classroom environment. Or, a speech therapist might focus on expanding the child's vocabulary, while the deaf pedagogue might provide support to the family on how to navigate social situations with their child.

Benefits of the Collaborative Model

The collaborative model involving a speech therapist and deaf pedagogue offers several benefits:

- More Comprehensive and Individualized Care: The collaborative model allows for a more holistic approach to CI rehabilitation, addressing both the linguistic and socio-emotional needs of the child.
- Improved Spoken Language Outcomes: The combined expertise of the speech therapist and deaf pedagogue can lead to improved speech perception, language acquisition, and communication skills.
- Enhanced Social Integration: The deaf pedagogue can help children with CIs develop the social skills and communication strategies they need to successfully navigate the hearing world.
- Increased Self-Esteem and Confidence: The support and guidance provided by both professionals can boost the child's self-esteem and confidence
- Greater Family Satisfaction: The collaborative model can provide families with increased support and education, leading to greater satisfaction with the CI rehabilitation process.

While the collaborative model offers numerous benefits, there are also some challenges to consider:

- Communication and Coordination: Effective communication and coordination between the speech therapist and deaf pedagogue are essential.
- Role Definition: Clear role definitions are needed to avoid overlap or gaps in service delivery.
- Funding and Resources: Adequate funding and resources are necessary to support the collaborative model.
- Accessibility: Ensuring access to qualified speech therapists and deaf pedagogues, particularly in rural or underserved areas.

The development of spoken speech in children with cochlear implants is a complex process that requires a multi-faceted approach. Collaboration between speech therapists and deaf pedagogues offers a promising model for providing more comprehensive and individualized care, addressing both the linguistic and socio-emotional needs of children with CIs. By combining the expertise of these two professionals, we can help children with CIs achieve their full communication potential and lead fulfilling lives. Continued research and advocacy are needed to promote the adoption of this collaborative model and ensure that all children with CIs have access to the support they need to thrive.

CONCLUSION

Collaboration between speech therapists and deaf pedagogues presents a powerful model for enhancing spoken language development in children with cochlear implants (CIs). This

interprofessional approach combines the linguistic expertise of speech therapists with the cultural insight and communication strategies offered by deaf pedagogues, addressing the multifaceted needs of children with CIs. By coordinating efforts, these professionals can create more individualized and effective intervention plans that improve auditory perception, articulation, language skills, and social-emotional well-being. This collaborative framework promotes a holistic rehabilitation process, empowering children with CIs to navigate the hearing world with greater confidence and success. Further research is warranted to investigate best practices for this model and to advocate for its wider implementation, ensuring comprehensive support for children with CIs and their families.

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