

“Thinking Out of the Box”

A Review of Strategies used in the Academic Curriculum for Deaf Students Diagnosed
with Autism Spectrum Disorders

Jennifer S. Lang

University of North Florida

Introduction

Appropriate and effective instructional strategies are primary concerns for any educator of the deaf. How are these factors compounded when educators must serve students with a disability in addition to deafness? More specifically, the author of this article will address the overwhelming concern of educators who are serving students with a dual diagnosis of deaf and autistic.

The 2008 regional and national summary conducted by the Gallaudet research institute reported that of the 36,710 reported deaf students in the United States, at least 17,407 were noted as having an additional disability or impairment. Of those students, at least 516 were reported as having Autism Spectrum Disorder (ASD), approximately 33% of the population of deaf children with additional disabilities. Very little research has been conducted regarding deaf children with ASD. In part, this may be due to the understanding and diagnosing ASD, even in hearing children (Rhodes & Vernon, 2009). Because of the complexity of diagnosing this disorder and the methods used, deaf children are often diagnosed at a later age than hearing children (Rhodes & Vernon, 2009).

Students with autism are challenged by impaired social interactions, show little emotion through facial expression, lack of eye contact, and often utilize irregular language. These students are also apt to act on their impulses, no matter what the situation may be (Rhodes & Vernon, 2009).

Currently, there are 4 disorders that fall within the Autism Spectrum Disorder. Asperger disorder children are noted to have very high language and verbal abilities while they share all of the social shortfalls of autism. Rhett disorder affects only girls, and by the time that that child reaches 10 years of age, they could be faced with the loss of bladder control, social skills, language skills, and motor skills (Rhodes & Vernon, 2009). With Child Disintegrative disorder, the child matures normally for approximately 2 + years, and then gradually regresses back. The final disorder is Pervasive Developmental disorder. This covers a disorder area where the child displays impairments in certain behaviors but cannot be categorized into other disorders within ASD (Rhodes & Vernon, 2009).

Children with ASD undoubtedly have social and communication impairments. When this disability is paired with deafness, it is easy to see how effective communication can be a challenge in education and many other social settings. There is a great need for educational strategies that can overcome these barriers and open the social and learning opportunities for deaf-autistic children.

The intention of this literature review is to analyze educational related strategies such as the applied behavior analysis, association methods, and Picture Exchange communication System for students with a dual diagnosis of autism and deafness.

Evidence-based Instructional Strategies

Little research has been reported on instructional strategies that have proven to be effective for deaf students with a dual diagnosis, especially those with autism. The following selection reviews applied behavior analysis, association methods, and the Picture Exchange communication system. Researchers have shown these strategies to be the most beneficial for deaf children with autism. (Easterbrooks & Hadley, 2005; Peridoe & Sullivan, 2004; Malandraki & Okadilou, 2004).

Applied Behavior Analysis

Applied behavior analysis (ABA) has a close relationship to operant conditioning and includes intensive one-on-one instruction in an effort to teach positive behaviors to replace negative ones (Brunner & Seung, 2009). In a study conducted in 2003 by Roper, Arnold and Montiero, it was concluded that the characteristics associated with hearing students with autism were not different from deaf students with autism. The only difference noted was the later diagnosis for the deaf group (Easterbrooks & Handley, 2005). ABA methods have a history of being very effective for students with autism and it is because of these findings, it can be assumed that that success found in the ABA method for hearing students with autism, would be just as effective for those students with a dual diagnosis of deafness and autism.

A single subject study was done with a young deaf student with autism to prove the effectiveness of applied behavior analysis for educational and social behaviors. The student's impulsive and disruptive behaviors interfered with his instruction and socialization. The purpose of the study was to find a strategy that would help to minimize these behaviors.

As an introduction to this procedure, the student's behavior of crossing his arms and squeezing was the focus of the study. After obtaining a baseline, the study began with the teacher toughing the student's arm and telling him to put them down. As the intervention progressed, the dependent variable decreased to a meaningful look from the teacher. When the desired result came from the student, the teacher responded with a wink and nod of approval. Because of the student's desire for the teacher's positive attention, the undesired behavior began to decrease in frequency. The study was ended after only having one occurrence of the behavior over a 13 day span. There was also an improvement of the student's social interactions and acceptance with his peers (Easterbrooks & Handley, 2005).

Association Methods

The Association method is the application of teaching an individual to attend, process, store and retrieve spoken and written information effectively and automatically. This method follows a strict set of principles that guide the process. When implementing this method, instructors use incremental teaching and a large emphasis on encouraging any progress. New material is introduced and built upon previously mastered material. Structure and repetition is promoted in the learner's environment and multi-sensory teaching is embraced (Perigoe & Sullivan, 2004).

Teachers implementing the association method in oral programs have experienced great success. The Magnolia Speech School in Jackson Mississippi (a school for deaf children with speech and language disorders) has been using this method since 1956. Here, the association method is implemented through intensive small group instruction,

and individualized support services such as occupational therapy, audiology and oral motor therapy is done through a team approach. The Magnolia Speech School has success with over 2000 students learning through these methods and has seen them as great instructional methods for language related learning (Perigoe & Sullivan, 2004).

Picture Exchange Communication System

The Picture Exchange Communication System (PECS) is a method that combines behavior analysis with alternative and augmentative communication, with the goal of generating self-initiated communication (Malandraki & Okalidou, 2004). Individuals who use PECS utilize a partner exchange approach. With this, a picture of a desired item is show to the partner in order to express needs and wants. This approach helps users to learn cause and effect communication, as well as how to initiate communication in different settings (Malandraki & Okalidou, 2004).

Malandraki and Okalidou (2004) used PECS with a young deaf and autistic boy. The focus of the study was to examine the efficacy of PECS In a non verbal deaf student with autism. The study was broken into several phases. The first was informal assessment that started with observation and moved to PECS training. PECS training was very structured and intensive, with 3 to 5 sessions a week, each lasting a minimum of 30 minutes. As training continued, sessions became less structured, but more intense. The picture cards used were of items found in multiple settings of the boy's daily life. A book was also made to contain the pictures and their matching words. The book also contained areas to form sentences with he phrases "this is" and "I want" (Malandraki & Okalidou, 2004).

By the end of the intervention, the boy was able to identify 150 words independently. He also was able to comprised simple sentences with the key phrases from his book. It was also noted that he began to vocalize in what seemed to be an attempt to read allowed. The final improvement noted by his educators was increase of positive interaction with his peers. The boy was able to initiate play and positive interactions that were warmly accepted and encouraged (Malandraki & Okalidou, 2004).

Discussion

All three of these methods contain aspects that would prove to be beneficial for deaf students with a dual diagnosis of autism. Although the majority of the research done on these strategies has been using autistic participants that are hearing, the studies reviewed indicate that there is potential for achieving the same success with autistic participants that have a hearing loss.

Students who are autistic benefit from consistent daily routines, and tightly structured learning strategies (Kubina & Yurich, 2009). The use of applied behavior analysis is a method that promotes both of these aspects. The strategy is based on simple concepts and can easily be modified to work with a variety of needs. Not only can it be focused on physical behaviors like those in the Easterbrooks and Handley study, but for academic purposes as well.

The shortfalls of this method come from two directions. First of which is the overall lack of research done in regards to the use of ABA on deaf students with autism (Easterbooks and Handley claim to have the only recorded research). There is not much material out there to compare and cross examine effective instructional strategies for deaf students with a dual diagnosis of being autistic. Second of all is the excessive time and effort that must be dedicated for this method to be successful. ABA requires a good deal

of one-on-one instructional opportunities that could be difficult to accomplish classroom setting without the assistance of a teacher's aid.

The step-by-step instruction of the association method also lends itself to the use for deaf students with autism. It appears that it would be a fairly strong method if utilized in the subjects of language and reading because of the incremental steps that can be taken at any pace. These steps can also be skipped if deemed unnecessary by the instructors. This method would most likely be very successful in oral programs for the deaf because of the concept of building onto each step; which is similar to most methods used in oral settings.

The research conducted over the use of the picture exchange communication system shows quite a deal of support for its use with autistic children with hearing losses. The concept of the system itself is actually very similar to sign, in that the use of visual representations is utilized to express words. PECS would be very beneficial to use for students who have difficulty making connections between words and signs. The visuals of the picture cards used in PECS may act as a bridge to help connect these concepts. It is an excellent "first step" in forming interactive communication.

In conclusion, all three of the methods reviewed contain qualities that would work as excellent instructional strategies for deaf students with autism. It is important to remember that the effectiveness of each is dependant upon the instructional setting and the individual student. Though there is very little research of these methods on autistic children with hearing losses available, these strategies show the progress that is being made in the efforts to find effective educational methods deaf children with additional disabilities.

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