Increasing Communication with Intellectually Disabled Students

Abstract

Non-verbal students with severe intellectual disabilities have difficulty communicating wants and needs to the adults who care for them. The purpose of this study is to incorporate a picture exchange communication system and voice output devices into daily classroom activities to enhance/increase students' communication skills.

Statement of the Problem

According to the Center for Disease Control (2015), intellectual disability (IND) is a term used to describe limits to a person's ability to learn at an expected level and function in daily life. Levels of IND vary greatly in children from a very slight problem to a very severe problem. Children with IND might have a hard time letting others know their wants and needs, and taking care of themselves. IND may cause a child to learn and develop more slowly than other children of the same age. It could take longer for a child with IND to learn to speak, walk, dress, or eat without help, and they could have trouble learning in school. In order to communicate, students must have ample opportunity during their school day to make choices and exercise some control of their lives.

Students with IND frequently fail to develop speech and language skills. They may rely on pre-linguistic behaviors such as pointing, reaching, eye gazing, and various facial expressions. Occasionally, the students may also resort to challenging behaviors such as aggression, tantrums, and self-injury. The student may cry and eventually may become physically aggressive toward caregivers when a preferred item is not accessible.

Purpose and Research Questions

The purpose of this study is to provide more opportunities for students with IND to communicate through the use of pictures, voice output devices, and augmentative communication. The following research question will be investigated: How can incorporating PECS and voice output devices increase communication during daily classroom activities for IND students?

Literature Review

Students with severe-profound multiple disabilities may not have full access or control of all the ways that most students communicate, but that does not mean that they have nothing to say, nor does it diminish their need and right to communicate. Modes of communication include speech, vocalizations, sign language, pointing, gestures, body language, pictures, objects, written language. For children with multiple disabilities this learning is disturbed. It may or may not be the case that the reception and processing of language is intact, but the inability to express themselves sets off a pattern of actions that have an adverse effect not only on communication development, but also on social, emotional, and intellectual development, including organizing ideas and thoughts (Varley, 2014).

Research concludes that students with intellectual disabilities need ample opportunities and strategies in order to develop functional communication skills. Of the various augmentative and alternative communication (AAC) modes available, both speech-generating devices (SGD) and picture-exchange (PE) systems are viable alternatives for children with developmental disabilities who fail to develop speech (Lancioni et al., 2007; Mirenda, 2003). Schillingsburg, Valentino, Bowen, Bradley and Zavatkay (2011) found that requesting information is often deficient in children with severe intellectual and cognitive disabilities and can prove challenging to teach. Beginning with basic "who", "what", "where", and "when"

questions to evoke communication and pairing it with a preferred item or activity, proved to encourage responses to the "wh" questions. The students were able to maintain mastery of this skill without further teaching of the skill. Requesting information is useful because it allows an individual to obtain important, unknown information which can in turn help with task completion, social interaction, and development of verbal skills (Schillingsburg et al., 2011). Llaneza et al. (2010) found that communication is an important factor in working with intellectually disabled students. About half of these individuals do not develop enough speech and language to meet their daily needs. Any type of verbalizations, gestures, pointing, and or use of sign language, should be encouraged in the academic setting. They concluded that the Picture Exchange Communication System (PECS) can be used anywhere, is easy to teach, affordable, and facilitates communication skills both in and outside the classroom. Picture symbols represent desirable items and the student learns to request them. It is suggested that the PECS system has positive effects on social interactions.

Sidener, Shibani, Carr, and Roland (2006) also agree that alternative communication such picture exchange, could teach students to request items such as favorite snacks or activities. These basic requests are known as mands. The use of the object as a reward for requesting the item increased students' ability to ask for items which motivated the mand. Especially for the more severely impaired, the picture exchange provided the opportunity to independently engage. Boesch, Wendt, Subramanian, and Hsu (2013) suggested that augmentative and alternative communication is used to address the deficits in communication that individuals with such impairments as autism are typically characterized with. These individuals show unique spoken language difficulties and limited or no functional speech. PECS is an intervention for teaching functional communication skills. Developed by Bondy and Frost in 1994, it involves instruction

of self-initiated communication skills using six phases. A speech generated device (SGD) is an electronic communication aid that has voice output capabilities for those with little to no functional speech. In the study conducted by Boesch et. al (2013), they compared PECS and SGD's to see which of the two strategies increased functional communication skills with elementary school children diagnosed with severe Autism. Their findings concluded that individuals who have limited functional communication, are highly likely to make requests using either strategy. The questions must be worded correctly, and student must first know a response is expected.

Canella, O'Reilly, and Lancioni (2005) stated that individuals with severe and profound disabilities have not been given enough opportunities, and if so very limited, to make simple choices. In everyday life, one makes many choices such as what to wear, what to eat, and what activity to engage in. In giving these opportunities, it is important to know the individuals' preference. The first step is to find out what students' preferences are. Starting with food items, students were given a choice of snack.   The main findings of the study conducted were that choice interventions decreased inappropriate behavior and increased more positive behaviors.

Cihak (2007) found that picture prompts facilitate performance of tasks by having students use the picture to independently perform the task. Individuals use picture prompts to successfully communicate requests, engage in conversation, preferences, and social interaction with teachers and caretakers. His study consisted of three nonverbal students of elementary age, primarily used gestures, and needed communication training. His findings concluded that all students successfully comprehended and maintained the meaning of the pictures. His study also Concluded that with appropriate means of communication, behaviors such as frustration and self-injury decrease.

Lancioni et al. (2009) stated that students that do not develop speech and language skills often use pre-linguistic behaviors such as pointing, reaching, eye-gazing, and facial expressions. They may also resort to aggressive behaviors or self-injury. These behaviors are difficult to interpret. Parents and educators must use augmentative and alternative communication strategies to advance. Manual signs, picture exchange, or voice output devices are examples of such strategies. The conclusion of this study suggests that both PECS and voice output devices are similarly effective for introducing intellectually disabled students, with lack of speech, to making requests. The strategies assessed provide support of the fact that these interventions take minimal time for acquiring new skills. Far greater benefits can be offered when a multimodal approach is taken.

Kagohara et al. (2013) studied the use of iPad technology for academics, transition, and communication. Technological advances are providing more and more opportunities for computer based devices and software development for people with Intellectual disabilities. For the purpose of this study, the device had to be educationally based and increase academic, social, and communication for the individual with a developmental disability. Since increasing numbers of students with disabilities are being served in general education settings, technology introduces a new communication for these students. More and more applications are being produced to help Students communicate which leads to success in and out of the classroom. For users with severe motor impairments, the iPad provides a touch screen display and students can become more engaged. Kagohara et al (2013) concluded that iPad can be effective, however, educators and caretakers would also need to be tech savvy and keep up with all updates of applications. Since there is not sufficient evidence to support the iPad, the integration process can be difficult. Teachers and caretakers would bear the burden of learning exactly what applications are suitable.

For many schools, budgets do not allow for such a purchase and more research needs to be done on the effectiveness as well as the integration process.

Wainer and Ingersoll (2011) agree that the use of technology is promising for teaching social communication skill to individuals on the Autism Spectrum. Computerized interventions permit development of skills while the individual works at their own pace. Intervention via computer is an appropriate motivator for thee students. This can be rewarding, and also teach communication and vocabulary skills simultaneously. Multimedia programs seem to be effective in teaching important skills to individuals with ASD (Wainer & Ingersoll, 2011).

Izzo (2012) suggests the IPad can increase reading comprehension, communication, and daily living skills through use of videos and schedules. Tablets also enhance the achievement of students with disabilities. Educators need to be more flexible in their instruction while maintaining high standards for students. When provided with the right technology, and the opportunity to advance, there exists the possibility for disabled students to achieve.

Rett syndrome (RTT) is associated with a range of serious neurodevelopmental consequences including severe communicative impairment.   In a study conducted by Byiers, Dimian, and

In Symons' (2014) study, three individuals learned to activate a voice output switch to obtain a desired item. By first placing the switch and prompting the individual to press it, verbal praise was given as well as a desired snack or activity. The trials continued to be reinforced and once the individual independently responded within one minute, the training was complete with the most minimal physical prompting. This study shows that individuals with RTT are capable of learning to communicate with caretakers. All three participants in this study quickly learned to activate the switch in order to get the reinforcer. Previously, not much research has been done

on communication of individuals with RTT. It is imperative for the quality of life of these individuals that more research be done.

van der Meer et al (2012) studied children's preference between manual signing, picture exchange, and speech generating devices. Children's preferences need to be considered before implementing augmentative and alternative communication interventions. Stimulus preference assessments were used for each of the four children to determine what would be appropriate. The children were taught to request specific snack and toys. It was found that once the children chose a communication method, they used the same method throughout the entire session. The data concludes that given the opportunity, individuals can make requests using one of the three communication interventions.

Students with severe cognitive or intellectual disabilities have the right to communicate in the most appropriate means necessary in order to have some control of their life. These strategies prove to enhance learning, increase social interaction, and provide functional Communication skills. When the opportunity is presented, the individual can learn to respond accordingly.

Research Methodology

The research will take place with seven students in a self-contained classroom at a high school in Palm Beach County. The seven participants have all been identified as having IND. There will be six males and one female student. All of the participants are non-verbal. Data will be collected during a series of science based lessons, using a tally sheet for each student, and put into a bar graph based on the recorded responses. The special education teacher will be responsible for collecting and graphing data.

Results

Research findings will be available in time for the conference and will be presented.

Implications

The implications of this study include the types and ways communication devices may be used with students with Intellectual Disabilities. Teachers may be able to incorporate daily routines into a device, as well as give the students more opportunities to make choices. Thinking of the students' frustration in being non-verbal also provides insight on behaviors. The student might hurt others /self injure, or disrupt the class for attention, because their needs are not being met. The more students' have some control in there lives, in decisions on activities, food preference, the most basic things, more students' will increase communication.

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