

# THE ROLE OF AAC FOR CHILDREN WITH INTELLECTUAL DISABILITY

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## **Introduction**

For children with intellectual disability, the continuum from mild to profound presents varied challenges in providing communication supports that address both current and future needs. From early childhood to late school-age, Augmentative and Alternative Communication (AAC) systems can provide an immediate means of communication for children with limited speech, while also supporting ongoing language learning. AAC includes unaided systems, most notably manual signs, as used in Key Word Signs and Auslan, and aided systems, including real objects, pictures, photos or other graphic symbols. Such symbols are made available in various forms, such as on low- or no-technology boards and books, and on high-tech electronic devices. In recent years, widespread use of tablet devices has increased the availability of aided AAC, with programs including Proloquo2go™ and Tools2Talk+ increasing access to technology-based AAC systems.

Unfortunately, the potential benefits of introducing AAC early in the life of a child with intellectual disability are often overlooked, increasing the risk of growing frustrations being realized as challenging behaviours and/or a widening language delay. The aim here is to consider the potential role of AAC for children across their early years through to school age.

## **Early Childhood**

For some children whose intellectual disability is not the outcome of a genetic disorder, such as Down syndrome, or those for whom the disorder has not become apparent, such as Rett Syndrome, late or a failure to develop speech is often an early indication of a disability. Parents expressing concerns may be met with a “wait and see” response by medical practitioners. The danger of waiting, however, is the loss of precious time when the brain has the most plasticity, and hence, the child has great potential to learn with appropriate intervention.

Early studies in which signs were taught to children with Down syndrome who were delayed in using words were found to develop early vocabularies in sign (Clibbens, 2001). Over time, children showed a pattern of expressing some words in sign and others in speech, then finally dropping the signs altogether. These studies demonstrated that teaching signs could kick start the children’s early language development, but there were indications that some children hit a plateau when their vocabulary was sufficient in size, such that progression to word combinations would be expected, but was not seen. Research by Iacono and colleagues showed that providing models in sign as well as in pictures on an electronic communication device (which provided speech output) helped children with Down syndrome

and a child with intellectual disability of unknown aetiology move from single to combined words (Iacono & Duncum, 1995; Iacono, Miranda, & Beukelman, 1993). The advantage of providing models using both unaided and aided AAC was that it allowed the child to choose the input that was most useful and met his or her learning preferences and style. Further, the evidence is clear that use of signs or other forms of AAC, whether early or late in development, does not hinder speech, a frequent fear of parents (Cress & Marvin, 2003), but does enhance language learning. One explanation is that access to AAC supports a child's language development, and once the child has mastered a base level of language, she can devote attention to learning speech.

Early childhood settings, such as preschools and early intervention programs, provide rich opportunities to embed AAC to support communication development within social interactions and learning activities (Iacono & Cologon, 2014). Providing ready access to various forms of AAC, such as through visual scripts for activities, activity displays and picture or object calendar boxes (Miranda & Brown, 2009), and integrating signs into daily activities can scaffold a child's comprehension and learning of new language forms. AAC can remain important for a person, not only to communicate, but also to understand others, and to make sense of the social and physical environment, including daily and non-routine events.

Ready access to AAC contributes to the inclusiveness of learning environments in which peers without disability come to know and use AAC, and hence, come to act as peer supports and communication partners for children with intellectual and other disabilities (Iacono & Cologon, 2014). Teachers and peers are able to implement incidental teaching, whereby opportunities for learning can be seized (e.g., in response to a child picking up a toy bottle in the dolly corner, a teacher can model "let's give dolly a bottle" in speech, with picture support, and/or in sign). Such incidental teaching has been found far more effective than traditional drill and practice, that usually occurs in contrived settings, such as clinic rooms (Iacono & Cologon, 2014).

### **Primary School Age**

As children move from early childhood settings to primary school, the presence of picture supports within both the classroom and learning materials dramatically reduces. Words rather than pictures gradually dominate the pages in books, and visual displays around the room lessen, replaced with written words as children progress through the grades. Children with intellectual disability, especially at moderate to severe-profound levels, become more reliant on access to their own AAC systems both for communication, and also to assist participation in curriculum learning activities. Children with mild intellectual disability may also continue to benefit from visual displays, such as through pictured social stories or calendars to support their understanding of what is happening across the day, or to complete multiple-step activities.

AAC research in schools has reflected the education options for students with intellectual and other disabilities in operation in Australia and in most developed countries: that is, special or mainstream schools (Iacono, Keeffe, Kenny, & McInstry, in press). Eligibility for special schools includes having more severe levels of intellectual disability (Forlin, Chambers, Loreman, Deppeler, & Sharma, 2013), but students are taught according to the Australian Curriculum (Iacono et al., in press). According to a rapid review by Iacono (2018), most AAC research conducted in special schools has tended to be on teaching use of the AAC systems or devices; in contrast, most AAC research conducted in mainstream schools has addressed improving interactions with peers, although teaching communication skills has also featured. The role of AAC in enhancing academic learning has been limited. An exception was two studies by Adams and Cook (2014a, 2014b), who programmed AAC devices with messages to support learning maths and science concepts through directing a robot's actions.

The relatively narrow focus of AAC research in schools on providing access to communication, rather than using devices to support social interactions and academic learning may reflect a basic problem in schools – that children requiring AAC have not been provided with appropriate systems. Reasons for limited access to AAC in schools could include an ongoing tendency to see AAC as a last resort, and a lack of awareness and skills required to implement AAC within school settings. Further, funding demarcation lines may further limit access to AAC. Under the National Disability Insurance Scheme, for example, purchase of AAC aids, whether low or high technology, requires demonstration that they are necessary for communication, but not for academic learning, which is the remit of the mainstream system of education. Such criteria fail to take account of a child's needs for continuity of supports, including access to a means of communication and/or AAC as a means to scaffold learning, across home, school and other contexts that, combined, contribute to a child's learning and functioning.



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## **Conclusions**

The most fundamental benefit of AAC is in providing children with intellectual disability access to a means of communication. This benefit is most evident for those who fail to develop speech skills. Yet, even for this purpose, many who stand to benefit from them experience delays in receiving AAC systems, or they are used for narrow purposes. Regardless of severity, AAC has a role to play in scaffolding a child with intellectual disability's expressive language learning, understanding of language and of expectations across environments, and in supporting academic learning and social functioning. AAC is not a last resort when speech fails to develop, but rather provides a key to giving children with intellectual disability access to communication, social interactions and life-long learning.

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### Key points

- A “wait and see” approach puts a child at risk of lifelong frustration and increased delays through missed learning opportunities at the time when the brain is most likely to respond to communication supports, including AAC.
- Contrary to popular belief, use of Key Word Signs and other forms of AAC is not a last resort when speech has failed to develop, but rather provides essential support for language, freeing up the child’s cognitive resources, which can be directed to learning speech.
- Providing children with access to both signs and graphic symbols increases the chances to meet their individual learning styles and preferences.
- AAC helps a person not only communicate, but also to make sense of the social and physical environments, and daily events, from early childhood into later years.
- Communication intervention, whether provided by Speech Pathologists directly or by parents or teachers with therapist supports, is most effective when it occurs in everyday situations, when incidental teaching moments are used to provide meaningful contexts and natural consequences.
- Learning to use AAC needs to be embedded in social interactions, including with peers, as well as within academic activities to support lifelong learning.