Let's talk about it: Challenges in narrative-discourse skills for children who use AAC

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Introduction

Many children who use augmentative and alternative communication (AAC) devices in their day to day lives tend to face difficulties when it comes to narrative language, vocabulary, and peer relationships (Soto, Solomon-Rice, & Caputo, 2009, p. 43). Some challenges that have an affect on the narrative language of AAC users include the time to access the words to create a story, insufficient vocabulary access, and lack of exposure to conversation based interactions (Solomon-Rice & Soto, 2011; Soto, Hartmann, & Wilkins, 2006; Crestani, Clendon, & Hemsley, 2010). Narrative language is an important aspect of a child's language development because it allows the child to re-tell stories and discuss major life events with their peers (Waller, 2006, p. 221). If children are unable to express their experiences, they will find it very difficult to make friends and may even become isolated. This isolation can lead to further impairments in narrative language as the child develops, which is why it is essential for researchers to further investigate this aspect of language in children who use AAC. The intent of this review is to analyze previous research and determine which aspects of using AAC devices may have an impact on the narrative language of children and how these deficits may be altered during speech therapy sessions with the use of specific methods.

Augmentative and alternative communication (AAC)

AAC is used by individuals who have difficulty with oral communication and, in some cases, motor impairments as well (Clarke & Price, 2012, p. 367). AAC may be used to supplement an individual's primary method of communication, or it may take the place of the individual's oral or signed communication all together. There are various forms of AAC which fall into two categories, aided and unaided (American Speech-Language-Hearing Association [ASHA], n.d., para. 4). Several of the unaided AAC systems include, but are not limited to, the use of sign language, gestures, and even facial expressions. In comparison, according to the American Speech-Language-Hearing Association, aided AAC systems include the use of a mechanism. Examples of which include picture communication boards, computer tablets, and speech generating devices (ASHA, n.d., para. 6). It is essential, when choosing an AAC system for a child, to remember that individuals are unique and not one system fits the needs of all children, therefore, a child may be exposed to several systems before finding success in all areas, including their narrative language skills.

Conclusions

Narrative language is developed naturally through exposure to conversations with adults and other interactions throughout childhood (Soto et al., 2006). Due to the lack of exposure to typical back and forth conversation, children who use AAC devices are much more likely to have difficulty with narrative language skills such as story-telling or even the task of re-telling an event that has happened to them (Soto, Yu, & Kelso, 2008). These deficits in narrative language can affect the child's ability to successfully write narratives once they get to the school age as well. Narrative language is such a critical part of our everyday lives and helps us to form relationships based off of past experiences as well. Although much of the literature reviewed included very small samples, we are better able to understand what forms of intervention may improve a child's narrative discourse skills and how to administer the therapy. There is much room for future research in this area of language development and intervention, however, it is essential for researchers to specifically look at the narrative language of children who use AAC. If children who use AAC and their caregivers are educated on aspects such as vocabulary access, the use of open ended questions, and even exposure to naturalistic conversation, many of these children would most likely see improvements overall in their narrative language skills.

Intervention results

Much of the literature in this scoping review are case studies that discuss the types of intervention used to enhance the narrative language of children during speech therapy and the outcomes after a specified period of time. In sum, these methods included storybook reading and retelling, adult co-construction, conversation-based therapy, and/or description tasks. It was observed that in nearly all of the literature reviewed, the researchers used a type of co-construction method with the children in addition to the storybook readings, conversation based tasks and description tasks used. This co-construction method was the adult interaction with the child to help with the task at hand, also known as scaffolding. In these pieces of literature, co-construction included, but was not limited to, repetitions, modeling, asking open ended questions, prompting, and using positive praise. Among the studies, there were improvements in areas such as turn taking, organization, and linguistic complexity in the narrative language of the children. It is important to note that in previous research, it has been shown that the use of adult co-construction with children who use AAC devices helps make the process of communication easier for the child (Solomon-Rice & Soto, 2011). There is still little evidence in current research that looks at narrative language in children who use AAC, therefore more research needs to be done to conclude that co-construction also improves narrative language in children who use AAC. Figure 1 expands upon several studies that showed improvement in specified areas that impact narrative language. Among the studies, there were improvements in areas such as turn taking, organization, and linguistic complexity in the narrative language of the children. Although each piece of literature may have used different methods and assessed slightly different areas of language, all of them targeted the narrative language of children who use AAC.

Limitations: Access to vocabulary

One major factor that influences children's ability to produce narrative language when using an AAC device is their access to proper vocabulary (Crestani et al., 2010). Currently, many speech therapists use wordlists that are made from the conversations of typically developing children in different scenarios to program these devices (Crestani et al., 2010). Reviewing this particular study done by Crestani et al. (2010) helped to conclude whether or not there is an extreme overlap in the words used by children in various narrative tasks, and what words are pertinent to AAC professionals when setting up a system for a child. In sum, it is important for more research to be done in this area to help with the programming of vocabulary in AAC devices for children. One piece of literature by Liboiron and Soto (2006) was discussed in this research because of the probability that the subject in that case study most likely continued to struggle with her narrative language skills due to a lack of proper vocabulary in her device. This is just one example of why it is essential for children who use AAC to have access to vocabulary used by peers of their own age and vocabulary that is used in different settings as well.

Figure 1.

	Interactions/Turn Taking	Organization	Overall Language Complexity
(Waller, O'Mara, Tait, Booth, Brophy-Arnott, & Hood, 2001) Method/Task: Shared Storybook Reading	The authors of this study found that in an interview with the children's caregivers, there was said to be an overall increase in the number of interactions when interactively reading a story with their child.	N/A	N/A
(Liboiron & Soto, 2006) Method/Task: Shared Storybook Reading, Scaffolding	The results of this study showed that there was an increase in turns taken by the child when the speech language pathologist (SLP) used techniques such as asking questions, expanding on ideas, and using gestures and cues during a shared storybook reading activity.	This study, although very small in sample size, showed that there may be a relationship between using a conversation-based intervention and an increase in proper grammar and longer utterances	The researchers found that during the speech therapy session, the participant was able to produce a narrative with seventeen utterances, which they claimed was a "substantive narrative for students who use AAC".
(Soto & Clarke, 2018) Method/Task: Conversation-based Intervention, Scaffolding	N/A	Conversation-based intervention was used by researchers to improve the children's ability to form phrases that were grammatically complete. This is important for this review because many children who use AAC have trouble with the steps of language development prior to acquiring narrative language skills.	This study, although very small in sample size, showed that there may be a relationship between using a conversation-based intervention and an increase in proper grammar and longer utterances
(Soto, Solomon-Rice, & Caputo, 2009) Method/Task: Description Tasks, Scaffolding	N/A	The researchers in this study used the narrative assessment profile (NAP) to assess overall organization of the children's narrative discourse. This assessment tool includes six aspects; topic maintenance, event sequencing, explicitness, referencing, conjunctive cohesion, and fluency. Overall, all three of the children showed an increase in organization within their narrative discourse.	In this study, researchers reviewed the number of different words (NDW) and the number of total words (NTW) to rate linguistic complexity. The number of different words and number of total words helps researchers to analyze the child's vocabulary. Generalization probes were administered one month after therapy ended and researchers concluded that the participants showed little to no regression in the skills they learned in therapy.
(Soto, Yu, & Kelso, 2008) Method/Task: Shared Storybook Reading and Retelling, Description Tasks, Scaffolding	N/A	Although the child showed great difficulties in creating fictional narratives and organizing her thoughts to create a plot, she did show a slight increase in overall organization of narratives.	The researchers found that there was an increase in NDW, therefore an increase in vocabulary. In addition to this, the child showed an increase in sentence complexity as well.