Chapter 97

Recent Advances in Augmentative and Alternative Communication:
The Advantages and Challenges of Technology Applications for Communicative Purposes

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ABSTRACT

With the increased development of mobile technologies, such as smartphones and tablets (i.e. iPhone, iPad), the field of augmentative and alternative communication (AAC) has changed rapidly over the last few years. Recent advances in technology have introduced applications (apps) for AAC purposes. These novel technologies could provide numerous benefits to individuals with complex communication needs. Nevertheless, introducing mobile technology apps is not without risk. Since these apps can be purchased and retrieved with relative ease, AAC assessments and collaborative evaluations have been circumvented in favor of the "quick fix"-simply ordering a random app for a potential user, without fully assessing the individual's needs and abilities. There is a paucity of research pertaining to mobile technology use in AAC. Therapists, parents and developers of AAC applications must work collaboratively to expand the research pertaining to the assessment and treatment of children who utilize AAC mobile technologies for communication purposes.

INTRODUCTION

Augmentative and Alternative Communication (AAC) is a general term for all means of communication, other than verbal speech output, that are used for expressing "thoughts, needs, wants and ideas" (American Speech-Language-Hearing Association, 2014). The terminology of 'AAC' includes a vast range of techniques and systems that is utilized to enhance existing communication abilities and to en-

able effective communication, where it is lacking, in order to improve one's communicative ability and, therefore, his/her quality of life.

This chapter will broadly discuss various types of AAC systems as well as the diversity of children with developmental disorders who use the AAC systems to communicate or to assist in their communicative interaction. Individuals who utilize AAC on a daily basis use the system to communicate and increase social and communicative interaction in a number of settings and situations. Each particular user has his or her specific complex communication needs (CCN), requiring different AAC means to assist in communicating with family and friends, as well as to increase language and literacy skills (Light & McNaughton, 2012). Additionally, this chapter will address various ways to access AAC systems and equipment for the purpose of effective communicative output, based on the specific AAC user's abilities and limitations.

Recent advances in AAC will be highlighted. The rapid evolution of technology in recent decades has brought with it significant changes to the field of AAC. With the development of mobile high technology devices, such as smartphones and tablets (i.e. iPhone, iPad), communication applications (apps) have become more easily accessible to children with various developmental and communication needs. Numerous advantages of these devices have been noted as devices have become more acceptable and more mainstream (Bradshaw, 2013). This chapter will include some examples of recent, popular AAC apps and will highlight other resources (i.e. articles, websites) which enumerate and describe potential apps for communicative purposes. However, the chapter will also delineate some notable concerns to consider when using these technological apps as the AAC user's principal communicative system. The paper will conclude with some functional limitations in the current AAC research in this area, as well as discuss some important research and work in the field which has yet to be accomplished. Some recommendations and suggestions will be proposed in the conclusion as well.

AUGMENTATIVE AND ALTERNATIVE COMMUNICATION: AN OVERVIEW

Augmentative and alternative communication (AAC) refers to any and all assisting communicative functions which 'augment' or serve as 'alternatives' for verbal vocalizations. In addition to verbal speech, these can include any vocalizations, gestures, facial expressions or AAC devices. Furthermore, AAC systems can include light tech tools, such as an alphabet board or communication book (McBride, 2011).

AAC systems are utilized by individuals who require adaptive support for expressive communication, such as reading and writing. People from all age groups, socioeconomic groups, races and religions use AAC as a means to communicate expressively. Children and adults alike who require assistance with expressive communication due to both congenital and acquired language impairments will use AAC systems to communicate with their family and peers. Individuals with congenital impairments such as cerebral palsy, autism, mental retardation and developmental apraxia of speech, use AAC systems as a form of expressive communication which allows them to partake in daily social interactions. These children may require use of AAC devices due to significant communicative needs in their social, family, educational and community environments (Light & McNaughton, 2012). Individuals with acquired impairments which result in profound communication difficulties, such as amyotrophic lateral sclerosis (ALS), stroke, traumatic brain injury, multiple sclerosis (MS) and spinal cord injury, often require some form of AAC for expressive output purposes (Beukelman & Mirenda, 1998).

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