Chapter 8
Multi-Sensory Environments and Augmentative Communication Tools

Cynthia L. Wagner
Lifeworks Services, USA

Jennifer Delisi
Lifeworks Services, USA

ABSTRACT

This chapter discusses the use of augmentative communication tools in conjunction with use of a multi-sensory environment. Though little has been written about the pairing, the authors discuss related literature, the history of their program's use, the emerging communicators with whom they notice a great benefit, and the challenges of implementation. The purpose of this chapter is to open the discussion about the relationship between the two, to examine some of the related research, and to propose new research directions which could benefit adults who face communication challenges due to sensory issues. The focus is on the issues faced by adults with developmental disabilities and autism.

INTRODUCTION

Lifeworks is a non-profit organization that helps people with disabilities live fuller lives that are integrated into the flow of community experience. Lifeworks provides the tools clients need to build the lives they want to live, through employment at area businesses, customized support services, and social enrichment opportunities. Our goal is to support clients to achieve their communication goals using the tools that suit them best.

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Every day we take in sensory information through sight, sound, taste, smell, and touch. Some people with developmental disabilities, or those on the autism spectrum, face sensory challenges. Sensory sensitivity makes it difficult to communicate if you cannot focus or attend to detail. Integration of senses allows a person to take in what is going on around them and communicate effectively. The authors implemented a program addressing the sensory needs with communication goals.

This chapter is based on multi-sensory environments (MSEs) which were introduced in 2007 in our

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day program setting for adults with developmental disabilities, autism, and/or traumatic brain injuries. We will discuss basic sensory needs, how they can be addressed in a MSE, and relate to better use of augmentative communication tools. Helping people to fulfill their sensory needs and communicate to their full potential empowers them to achieve their hopes and dreams.

BACKGROUND

Communication difficulties can be caused by physical impairments, cognitive impairments, and/or sensory impairments. Physical impairments can impact the productive communication skills of a person with communication challenges. Such impairments may prevent them from physically producing certain sounds. These impairments also can limit use of augmentative communication tools because the person may have difficulty pointing to objects, manipulating their hands to form words in sign language, or accessing a communication device through alternative access methods such as switches or a head mouse. For some people with developmental disabilities and autism, physical impairments complicating communication may not be visible.

Cognitive impairments can affect language acquisition in multiple ways. For people with Down syndrome (DS), short-term memory may be a concern (Iglesia, Buceta, & Campos, 2005). Short-term memory is how we initially store new verbal vocabulary, navigate through a new communication device, or remember the meaning of new picture symbols. Another concern is the processing of language. Research "suggests that participants with DS have a deficit in verbal processing" (Iglesia et al., 2005, p. 201). This has also been discussed for individuals with other cognitive impairments. Much of the new vocabulary we acquire comes from things we have heard others say. Motor speech deficits, such as apraxia, can cause difficulty with multiple types of production issues. Koul, Schlosser, and Sancibrian (2001) discuss motor issues specifically in relation to people with autism, but it affects individuals with other disorders as well. When looking at selection options for communication devices, for example, "The movement of the body part or body-part extension (e.g., the headstick) must be sufficiently controllable so that only a single item is activated with each depression" (Beukelman & Mirenda, 1992, p. 58).

Finally, sensory impairments prevent us from acquiring all the information that the environment presents. Iglesia et al. (2005) state that "if more senses are engaged in receiving the information (e.g., sight, hearing), the recall of story details will be facilitated" (p. 199). The opposite is true as well—when fewer senses are engaged in receiving the information, we take in fewer details. These details could be facial expressions which denote sarcasm, inflections which communicate questions versus statements, or endings of words which detail the tense. This is not just the case for visual impairments and auditory impairments, but also for those who have Central Auditory Processing Disorder, those not taking in enough of a particular sense, and for those who take in too much of one sense.

Physical and cognitive impairments affecting communication are those which have more traditionally been addressed through speech therapy. As more has become known about the nature of sensory impairments and how they relate to communication, clinicians have been better able to address these needs. Studies are being done which are investigating the relationship between sensory impairments and language acquisition, but this is a complex issue. Each diagnosis (such as DS, autism, etc.) appears to have pieces of sensory issues affecting their language impairments (when they are present), but isolating each of these issues and accounting for the individuality of the way they present in each person is a challenge. In terms of augmentative communication tools with these types of diagnoses, Beukelman and Mirenda

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