Using Evidence Based Practices
in the Selection of Mobile Mainstream
Technologies as Augmentative
Communication Devices

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Who Uses AAC Systems

- Approximately 3.5 million persons in the United States do not have speech skills to meet their communication needs on a daily basis (Matas, et al., 1985; Beukelman & Miranda, 2005).

- “When someone is not developing speech and language skills or has lost the ability to speak or understand spoken or written language, then Augmentative and Alternative Communication (AAC) intervention approaches are required to meet their complex communication needs” (Cook & Polgar, p. 371, 2008).

Why Use AAC Systems

- AAC systems provide opportunities for education, employment, family, and community participation (Beukelman & Mirenda, 2012).
Personal computing technologies have been introduced as AAC options:
- attractive
- low cost
- mainstream look
  - (Alliano, et. al., 2012).

AAC System Options

Mainstream technologies may be an option for AAC:
- Individual’s skills, participation patterns, and communication needs should be assessed
- Transdisciplinary assessment process
- Determine the most appropriate AAC system
  - McBride, 2011

AAC System Selection Considerations

Current research to support the use of mobile devices and applications as AAC systems:
- (Dietz, et al., 2012; Flores, et al., 2012; Delarosa, et al., 2012)

Participation model:
- (Buekelman & Mirenda, Buekelman & Mirenda, 2012; McBride, 2011; Cook & Pulgar, 2008; Hill, 2006)

Feature based match framework for conducting AAC assessments:
- (Gossling, Costello & Shane, 2011; Alliano, et al., 2012).

AAC System Selection Considerations
The evidence of the use of mobile devices as AAC systems is limited in the current literature.

Use of iPod and iPad systems with both the Proloquo2Go application and Pic a Word has been studied as a means to make requests.

Two of three participants, with developmental disabilities, in a study conducted by van der Meer et al. (2011), developed the ability to request snacks and toys using an iPod Touch with the Proloquo2Go application. van der Meer, Didden, et al. (2012), van der Meer, Kagohara, et al. (2012), and van der Meer, Sutherland, et al. (2012) aimed to teach children with developmental disabilities ages 4-13 to request a preferred stimuli using the Proloquo2Go application on the iPod Touch or the iPad. Overall, these studies indicated success in teaching requesting of preferred stimuli. Flores et al. (2012) study suggested that the iPad with the Pic a Word application has similar outcomes to a low-tech picture based system. Kagohara et al. exposed a barrier to the iPod as a communication device, activation of the device through touch was an early barrier to success (Kagohara et al., 2010).

While the number of AAC applications available for mobile devices is significant, the research on the outcomes of the AAC applications for communication is limited yet evolving.

It is important to consider the historical and evidence based means of selecting AAC systems for persons with complex communication needs.

With limited research on specific AAC applications for mobile devices prior research used to guide the selection of AAC systems is valuable. The participation model offers a systematic AAC assessment process which is based on functional participation. The key to this model is the identification of participation barriers and selecting AAC systems based upon the identification of these barriers. (Beukelman & Mirenda, 2012; Fishman, 2011)
**Feature Matching**

- Shane and Costello (1994).
- This method of AAC system selection is based upon the person’s strengths, abilities, and needs and the selection of an AAC system is matched to these individual needs.
  - (Gosnell, Costello, & Shane, 2011).

Practices in selecting AAC systems, inclusive of AAC applications for mobile devices, include:
- identification of the persons strengths and needs,
- being knowledgeable of communication systems including mobile communication applications and devices,
- matching the persons needs and strengths to the features of communication systems and/or communication applications, and
- conducting AAC system trials to assess appropriateness of the selected system (Gosnell, Costello, & Shane, 2011).
Practitioner-based comprehensive assessment should be the first step in the selection of AAC applications and mobile devices. Consumers and families should be directly involved in this process.

AAC system selection should include considerations of experience, clinical judgment, and evidence.

Selection begins with the person rather than the mobile device and the application.

Selection is determined through assessment which is systematic.

The process of AAC assessment does not include fitting the person to the AAC system, mobile device, or application (Gosnell, 2011; Gosnell, Costello, & Shane, 2011).
Client, consumer, and family values, preferences, characteristics, and contexts directly impact the selection of AAC systems.

These considerations must be embedded in the assessment process for AAC systems.

The participation model (Buekelman & Mirenda, 2012; McBride, 2011; Cook & Pulgar, 2008; Hill, 2006) and the feature based match framework (Gossling, Costello & Shane, 2011; Alliano, et.al., 2012) for AAC system assessment embed these values.

Consumer values, preferences and contexts directly impact the successful communication outcomes for persons with complex communication needs.

Clients, consumers, and families should be directly involved in the assessment process and may need to advocate for involvement.

Practitioners must ensure that consumer values, preferences, and context are an integral part of the assessment process through client, consumer, and family involvement in the assessment process (Saito & Tumblui, 2007).

Understanding the new roles of the consumer and family
- New roles - interpreter
- New responsibilities – programmer, technician
- These roles and responsibilities are added to typically overburdened consumers and families
  - Frustration
  - Guilt
  - Blame
- Financial pressure and lack of support services can contribute to abandonment of technology
  - Marshall and Goldbart, 2008
Clinician Observations

- Consumers using mobile devices for entertainment
- Consumers refusing to use mobile device applications for communication due to the distraction of applications for entertainment
- The need for a mobile device for communication and a second mobile device for entertainment

AAC System Considerations

- Looking into the features of mobile devices which may support AAC systems

Selected References