New and Emerging Access Technologies for Adults with Complex Communication Needs and Severe Motor Impairments

Susan Koch Fager, Melanie Fried-Oken, Tom Jakobs & David R. Beukelman discuss current research and recent development activities related to emerging alternative access technologies for individuals with severe motor impairments and CCN.

Person-centered model of research

Due to the complexity of the challenges that invidiuals with severe motor impairments face, research and technological advances often emerge out of individual case examples.

The authors describe the research and development of 3 emerging access technologies that began with a clinical challenge and led to a technological discovery.

1

Access solutions for individuals with minimal movement capabilities

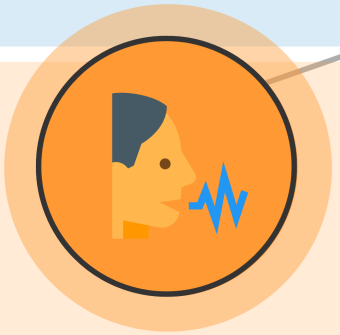
- Leveraging movement sensing technology (e.g., wearable fitness monitors) to detect the unique movement patterns of individuals with severe motor impairment
- Continuing to unlock the potential of Brain-computer Interface (BCI)

2

Technology incorporating multiple input modalities

- Most devices provide multiple access options, but they are typically only available independently of one another
- Integrating Eye-tracking + switch scanning to overcome the challenges of using one access method individually

3



Technology that supplements access demands

- Supplementing speech recognition with other sources of information/other input modalities to increase accuracy
- Supplementing scanning-based message generation (e.g., partners co-construct and provide word predictions during conversation)

Fager, Fried-Oken, Jakobs, & Beukelman (2019)

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