

Review of External Evidence Related to AAC Dynamic Display Technology©

Authors	Participants	AAC system or equipment	Results
Estes & Wessel (1966)	20 undergraduate Stanford students	Monitor with 8, 12, 16 letter display sizes	Advantages to reduced amount of visual information that needs to be processed by operator for accuracy and response time.
Schneider, W., & Fisk, A. D. (1982).	9 able-bodied college students	Computer using multiple frame target detection program	As consistency decreased, detection performance plateaus earlier and at a lower level
Mirenda (1985)	Review of students nonverbal, severely handicapped, yet physically able-bodied	Pictorial (single meaning picture) systems, ie communication book design and layout.	Reduce amount of visual information.
Mizuko, Reichle, Ratcliff, & Esser, (1994)	Normally developing 4-year-old children	Prentke Romich Express 3 with Picsyms. Comparing accuracy on 10, 20, 30, 40 location array size.	Having fewer symbols from which to choose in a fixed display resulted in increased accuracy.
Reichle, Ettlting, Drager, Leiter (2000)	Single-subject case study of experienced augmentative system user	Compared fixed, dynamic active, and dynamic passive displays	Response time was the fastest and accuracy was the greatest for the fixed and dynamic active display types.
Hill (2001)	Twenty adults who rely on AAC, one subject used Vanguard	Collected language samples for 2 contexts.	Reported variety of summary measures and performance outcomes. Results available for adult who relies on Vanguard.
Drager, Light, Speltz, Fallon, & Jeffries (2003)	Thirty typically developing 2 ½ year old children	Compared 3 system approaches to vocabulary organization: taxonomic grid; schematic grid; schematic scene on Freestyle and Dynavox.	Poor performance across all conditions. More vocabulary located on schematic scene. Failure to generalize knowledge to learning novel vocabulary.
Hochstein, McDaniel, Nettleton, & Neufeld (2003)	8 children with cerebral palsy, 8 children without disabilities	Compared variables of single-level (Alphatalker) and dual-level (Dynavox) displays and vocabulary abstractness (concrete vs. abstract words)	Both groups demonstrated same pattern of acquisition making more errors on the dual-level display and making more abstract (category) errors in selecting symbols.
Hill (2003)	Single subject case study of 3 three old with cerebral palsy	Monitored performance on Vanguard with Unity One-hit	Reported MLU-w, TNW, NDW, frequency of language representation method use, core and extended vocabulary acquisition.
Spurk & Hill (2004)	9 individuals with CCN ranging in age 5-44 years old	Compared vocabulary frequency between use on fixed display versus multiple page display.	Reported differences in frequency of use of core vocabulary between two groups. Those on fixed displays had a significantly higher percent of core vocabulary use.
Hill & Spurk (2004)	2 groups of individuals with CCN; males (N=5) and females (N=4) age ranges included children and adults.	Compared patterns of language representation method use on two dynamic display schemes.	Group using multi-level display scheme had a higher frequency of single meaning picture use to access vocabulary. Group using fixed display accessed vocabulary with a higher use of semantic compaction.

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