

**Critical Review:**  
**Speech-generating devices and picture-based systems: Which method is more effective at increasing requesting skills in children with autism spectrum disorders?**

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This critical review examines the current literature that compares speech-generating devices to picture based systems to determine which is more effective at increasing requesting skills for children with autism spectrum disorders. Six studies are reviewed, totaling 29 children (ages 3-12) with autism and other developmental disorders. The research included various single subject experimental designs. Overall, the results are inconclusive. Both methods are successful in increasing requesting skills, but there is not consistent evidence that one is more effective.

***Introduction***

Autism Spectrum Disorder (ASD) is a neuro-developmental disorder that includes a variety of symptoms and deficits along a continuum (Lauritsen, 2013; Sigafoos, O'Reilly, Lancioni, & Sutherland, 2014). A diagnosis of Autism, according to the DSM-IV criteria set out by the American Psychiatry Association (2000), is based on a certain number of characteristics (at least six) from three categories (Mattila et al., 2011). Characteristics fall under the domains of impaired social interactions, restricted or repetitive behaviors, and communication impairments (Mattila et al., 2011). Several authors report a significant percentage (25-61%) of those with ASD that have limited functional communication abilities (Boesch, Wendt, Subramanian, & Hsu, 2013; Ganz, Hong, & Goodwyn,



completed with the condition that “yielded more favorable results” even though there were no statistically significant differences according to the Wilcoxon test. Additional considerations included a small sample size, a participant with a diverse cultural background and various levels of experience with picture-based systems prior to this study.

Overall, Boesch et al. (2013) provides suggestive evidence for the equal effectiveness of both SGDs and picture-based systems for enhancing requesting skills in children with ASD. It is relevant to future research involving SGDs and PECS and applicable to clinical practice when considering i32 5 (h) 4 ( ) -15BT method o recommend.

**Couper et al. (2014)** evaluated the number of request made with three AAC method (SGD - Apple iPod Tou32 5 (h) 4 (®) -357/)8 (i) 7(P) 3 (a) 5 (d) 4 (®) -357(wi) 7(t) 7(h) 4 ( ) -357(P) 3 (r)6 (o) 4 (l) 7(o) 4 (q) 4 (u) 4 (o) a PE ssem, and MS ( New Zealand Sign Language) in a non-concurrent multiple baseline across participants with alternating treatments design (see evidence) . Participants were nine children (ages 4–12) with ASD including one with a dual diagnosis of Down syndrome. The children had limited or no expressive language skills based on an appropriate measure, and various levels of previous experience with both picture

involved an eight item checklist by observers, was reported at 100% across all sessions.

This study had excellent treatment integrity.



Most of the studies included the emergence of new technology, specifically the iPod® /iPad® as an SGD. It was noted to be successful at facilitating requesting skills in several of the studies (Couper et al., 2014; Flores et al., 2012; Ganz et al., 2013; van der Meer et al., 2012). At the very least, the use of this new technology does not take away communicative skills and can be considered in

Mattila, M.L., Kielinen, M., Linna, S.L., Jussila, K.,