Critical Review: In children with Autism Spectrum Disorder, do high-tech devices surpass low-tech devices when evaluating increased communication skills?

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This critical review examines the evidence regarding the effectiveness of high-tech versus low-tech augmentative and alternative communication devices when evaluating increased communication skills in children with Autism Spectrum Disorder. A literature search was completed resulting in six research articles that met the inclusion criteria for this critical review. Studies evaluated included four studies using multiple baseline with embedded alternating treatment design, a meta-analysis of single case studies and a controlled case study with a single participant.

Overall, this study provided suggestive evidence that a low-tech PE system is as easily acquired

A limitation to this study was that researchers only followed protocol for PECS until Phase III, when research indicates speech outcome is typically only seen in Phase IV and V. This limits the outcomes of measuring speech development if they did not follow the protocol to completion. Another limitation is that not all participants had the same amount of intervention sessions. When measuring social communication behaviors researchers grouped all of the outcomes together, which creates difficulty when determining if one behavior increased more than another. Strengths of this study include having three maintenance sessions eight weeks after intervention to assess the long-term effects of the use of the device. The methods were clearly described and the measures obtained were valid and reliable.

Overall, this study is suggestive that social communicative behaviors and requesting occur equally as often with both the SGD and PECS, although the occurrence of these behaviors, as well as speech production, did not increase substantially from baseline measures.

Bock et al. (2005) implemented an alternating treatment single subject design to examine whether PECS or a SGD resulted in a more rapid acquisition rate for requesting skills. This study also analyzed the related generalization of these behaviors in a classroom setting. The SGD used in this study was the GoTalk and the low-tech system used was PECS. Participants were 6 four year-old boys in a pre-school setting. Participant inclusion criteria include: (a) children who were currently educated in a preschool setting, (b) they could physically manipulate and visually locate a laminated 2

physical abilities and concomitant diagnoses are also factors to take into consideration.

The studies examined in this critical review are in the form of meta-analyses, case study design and multiple baseline desig