

Treatment Comparison between PECS™ and Proloquo2Go for Manding Behaviour in a Young Boy with ASD: What does the data tell us?

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ABSTRACT

There has been a growing body of literature examining the use of various augmentative and alternative communication (AAC) systems for individuals with Autism Spectrum Disorders (ASD). There exists emerging evidence to support the Picture Exchange Communication System (PECS) and equivocal evidence for speech generating devices (SGDs) such as an iPad™ with Proloquo2Go to support functional communication skills in non-vocal/minimally vocal individuals.

A young boy, with ASD and limited vocal-verbal behaviour, was taught PECS from Phase I to Phase IV to mastery criteria. Parents and a Speech-Language Pathologist (SLP) from the local AAC clinic recommended transition to an SGD using Proloquo2Go in preparation for school.

A treatment comparison between PECS and Proloquo2Go for manding behaviour was conducted in order to determine the most effective and preferred system for communication.

The results showed that the frequency of manding favoured the SGD while the percentage of correct responses slightly favoured PECS. Clear differences existed in the number of sessions to mastery for Phase IV between the systems. Furthermore, generalization from one system to another was not automatic. Accordingly, data-based decisions are required when implementing and selecting a functional communication system.

INTRODUCTION

The inability to develop functional speech output is an area of concern for approximately 25 to 65 % of people diagnosed with ASD (Lorah et al., 2013). As a result a number of AAC systems are available to assist in teaching individuals to communicate. These systems range from low-tech (e.g., PECS or communication boards) to high-tech systems (e.g., SGDs). To date SGDs have not been established as evidence-based practice.

With increased capabilities, abundant supply, low sticker price, and media hype, it is not surprising that many families are eager to integrate higher tech devices into their child's repertoire. However, there is limited research on how to select the correct communication system, while ensuring the most effective and efficient means for transition between different systems. Frost & McGowan (2011) suggest that learners who have mastered Phase IV of the PECS protocol may be good candidates for using SGDs. Additionally, they caution that the new system must be equally as good or more effective than the initial system for the learner. This should be determined through data collection and treatment comparison in order to accurately determine the most effective and appropriate system for the particular individual. Finally, it has been suggested that the individual's preference for a specific AAC system should also be considered when making a transition to a new device (van der Meer et al., 2012).

As a result of the recommendations discussed, the purpose of this study was to determine:

- if the participant demonstrated a preference for using the SGD over PECS
- which system(s) enabled rapid and accurate learning

METHOD

Participant & Setting

The participant was a 6 year old child diagnosed with ASD exhibiting minimal vocal verbal behaviour. Brandon attended a private centre for an intensive behaviour intervention (IBI) program daily which consisted of 35 to 40 hours per week working 1:1 with an instructor therapist on an intermediate curriculum including targets such as visual skills/MTS, labeling objects and attributes, receptive ID, listener tasks, and imitation skills. The session room was typically equipped with a few small tables, chairs, some toys, and often another therapist and student.

Brandon's initial primary means of communication was through the Picture Exchange Communication System™. Brandon was capable of completing numerous two-to-three word mands (verb+object, verb+attribute+object, subject+verb+object, etc.) per hour using PECS and it was recommended that he transition to the use of an SGD (Proloquo2Go).

Dependent Measures

- Frequency of spontaneous two-three word mand phrases
- Percentage of correct mands
- Rate of acquisition (trials to criterion)

Experimental Design & Procedures

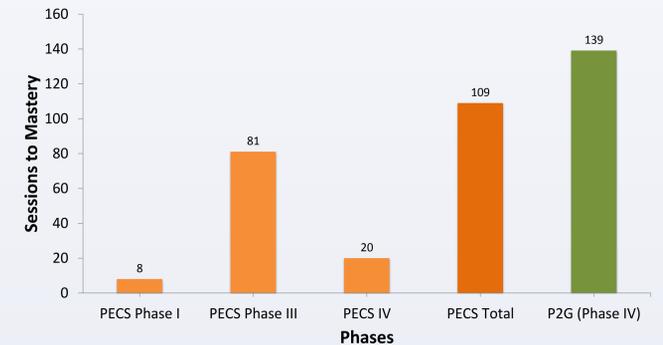
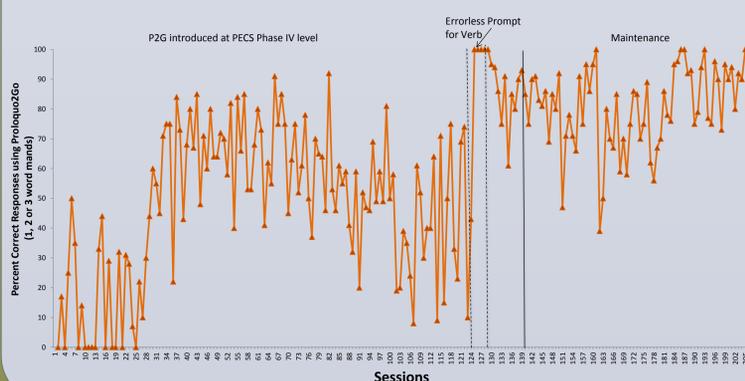
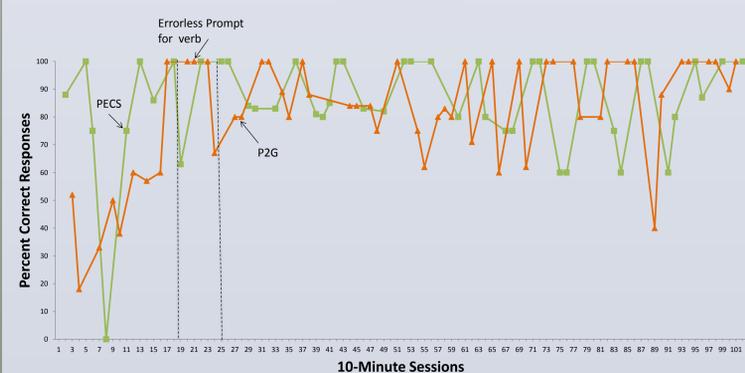
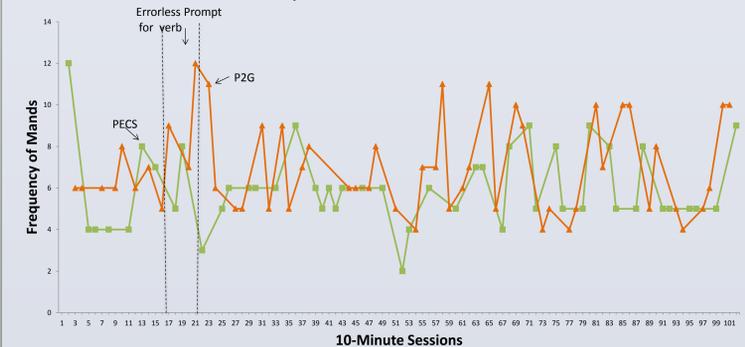
An alternating treatment design with a treatment comparison of PECS and Proloquo2Go was used to assess the most preferred and the most effective communication system for Brandon. Baseline data regarding the number of sessions to mastery for PECS, mand frequency, and percentage of correct mands during 10 minute manding sessions were collected prior to transition to the SGD. Implementation of the SGD mirrored the implementation of PECS with corresponding data collected for treatment comparison purposes.

Initially data was collected on acquisition of PECS from Phase 1 through modified phase IV (typical 2-word phrase without the [I want] sentence starter). Once Brandon met mastery criteria for modified phase IV of PECS, Proloquo2Go was introduced. Data was once again collected on the percentage of correct mands using the SGD at a modified phase IV level. Following mastery of both PECS (at a modified Phase IV) and Proloquo2Go (at a modified Phase IV), the treatment comparison between PECS and Proloquo2Go was conducted.

RESULTS

Results of evaluation of Brandon's frequency of manding using PECS or the SGD during a 10-minute manding session demonstrated a moderate increase in the frequency of manding using the SGD suggesting a slight preference for using the SGD. However, the data collected indicates that mands using PECS were slightly more accurate (i.e., more correct responses were observed while manding with PECS), which suggests that the PECS may be a more effective means of communication for Brandon.

When analyzing the data collected during the acquisition of PECS and the introduction of Proloquo2Go, it is noted that Brandon required significantly more training to acquire a modified phase IV using the SGD than was required to reach mastery criteria for modified phase IV of PECS. Additionally, following mastery criteria for modified phase IV of Proloquo2Go, Brandon's ability to accurately request using the SGD continued to show variability.



DISCUSSION

Comparison studies between PECS and SGD have demonstrated mixed results, not only in the rate of acquisition of the use of the device, but also in the frequency and spontaneity of use (Bock et al. 2008; Son et al. 2006). The data collected throughout the course of this study support these mixed results. Despite the fact that Brandon acquired PECS over a shorter period of time and responded more accurately using PECS, he demonstrated some preference for manding using Proloquo2Go. These data do support the notion that transitioning between AAC systems requires strategic planning and coordination, as rates of acquisition of P2G were significantly slower than that of PECS. Additionally, it cannot be assumed that functional communication can simply transfer across devices without explicit training, especially in order to ensure that the individual does not lose any of their previously acquired skills.

A limitation with regard to this study is the absence of IOA data. This comparison was completed as part of Brandon's IBI therapy and as such there was limited opportunity to collect secondary data. Additionally, Brandon was exposed to a short booster period during the modified phase IV using Proloquo2Go following "mastery", as data indicated he was manding using single words only. This booster session occurred in the midst of the treatment comparison and may have influenced the frequency of responses using the SGD. Finally, although Brandon had an extensive history with using PECS for communication, the iPad was familiar to him as he was highly motivated to watch videos and play games on the device. It is possible that the slight preference noted for the SGD could be a result of his motivation to use the iPad overall.

For future studies, researchers may want to consider a broader range of communication goals when planning a transition from PECS to SGDs. Much of the current research on SGDs focuses on developing a manding repertoire rather than the other verbal operants. Finally, AAC research should be conducted to demonstrate the value of making data-based decisions when choosing to transition from one system to another. It is essential that data is collected to guide the transition, as well as to determine which communication system is most effective.

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