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Courtney Kaczmarek  
*Longwood University*

Payton Yates  
*Longwood University*

Elizabeth Llewellyn  
*Longwood University*

Shannon Graham  
*Longwood Univ*

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# Effect of Instruction Method on Competency and Perception of Proloquo2Go



Shannon Graham, B.S., Courtney Kaczmarek, B.S., Elizabeth Llewellyn, B.S., Payton Yates, B.S.  
Longwood University, Farmville, VA

Faculty Advisors: Wendy Pulliam, M.S., CCC-SLP and Kellyn Hall, Ph.D., CCC-SLP

## Introduction

- With the establishment of the Individuals with Disabilities Education Act (IDEA), more children with severe communication disorders are being educated in public school general education classrooms.
- Augmentative and alternative communication (AAC) devices are often the primary means of communication for nonverbal students and have been shown to improve the communication, language, and literacy skills of children with such deficits.<sup>1</sup>
- Teacher's attitudes toward the use and effectiveness of AAC has been found to be negative.<sup>2</sup>

## Purpose

This study investigated three approaches to learning the basics of Proloquo2Go in order to assess the effectiveness of the instructional method and its effect on the participants' attitude toward AAC.

## Research Questions

- Does instructional method affect the speed at which novel users demonstrate competency in Proloquo2Go?
- Does the type of training influence the attitude of novel users toward AAC?

## Methods

**Participants:**  
27 undergraduate education majors at Longwood University (6 excluded)  
n = 21 (1 male, 20 females); 7 per condition

**Materials:**  
Pre-Test Screener and Post-Test Survey  
iPad with Proloquo2Go  
Laptop with "Proloquo2Go Help Overview"  
Stopwatch

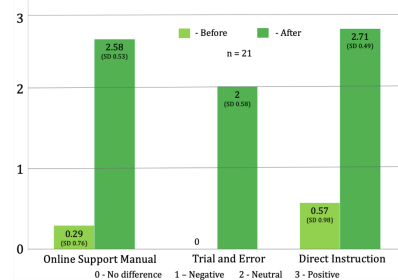
## Timed Test of Competency Completion Rate

Online Support Manual		Trial and Error		Direct Instruction	
Participant	Time	Participant	Time	Participant	Time
ONL1	3:44	TE1	3:15	DI1	2:09
ONL2	4:03	TE2	5:39	DI2	3:04
ONL3	4:59	TE3	5:58	DI3	3:17
ONL4	5:55	TE4	6:12	DI4	4:24
ONL5	7:15	TE5	6:13	DI5	4:53
ONL6	10:22	TE6	7:36	DI6	5:05
ONL7	15:00	TE7	15:00	DI7	5:51
Mean (SD): 7.15 (4.16)		Mean (SD): 7.36 (3.96)		Mean (SD): 3.42 (1.22)	

## Results

- The highest rating of perception of AAC post-testing was from participants in Direct Instruction (Condition 3). The lowest rating of AAC post-testing was from participants in Trial and Error (Condition 2).
- Similarly, the highest rating of effectiveness of instructional method was Direct Instruction (Condition 3), while Trial and Error (Condition 2) was rated the lowest.
- Direct Instruction (Condition 3) also resulted in faster task completion times (M = 3.42, SD = 1.22) as compared to Trial and Error (Condition 2) (M = 7.36, SD = 3.96) and Online Support Manual (Condition 1) (M = 7.15, SD = 4.16).
- Although the time nearly doubled for Trial and Error, One-Way ANOVA revealed no significant results (F = 2.23, p = .14).
- Three participants' data were excluded due to inability to follow the instructions, two participants' data were excluded due to previous experience with AAC, and one participant was excluded due to illness at the time of testing.

## Perception of AAC Before and After



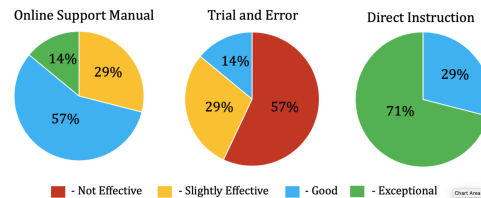
## Timed Test of Competency

- ✓ Add a button for "hand".
- ✓ Add a picture of your hand for "hand" button.
- ✓ Permanently delete "hand" button.
- ✓ Add a folder for "Expressions" by linking to an existing folder.
- ✓ Rearrange the buttons to have the "Yes" button as the first button on the "Expressions" page.
- ✓ Type "hello" using the keyboard.
- ✓ Open up the "Help" section.

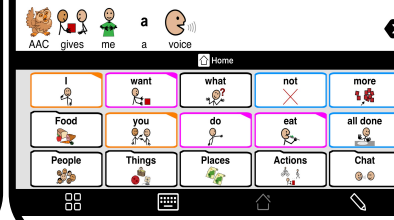
## Discussion

- This was a pilot study to compare the effects of instructional methods on perception of and competency with Proloquo2Go.
- The standard deviations are large within all three conditions, implying high variability in how people learn best.
- There were minimal differences between the means for both Online Support Manual (Condition 1) and Trial and Error (Condition 2), suggesting that Online Support Manual (Condition 1) had minimal benefits in which learners achieved competency in use of Proloquo2Go.
- Trial and Error (Condition 2) received the lowest perception ratings from participants. Ratings did increase from pre- and post-testing suggesting that, while in-person direct instruction is preferred, the perceived negative attitudes toward AAC use may increase with exposure to a device, even with lack of structured training.
- The data collected regarding perception of AAC showed exposure to AAC has a positive effect on users' perception of AAC in general, regardless of instructional method. Therefore, if direct instruction is not a readily available resource, online support manuals may be viable options to introduce AAC to unfamiliar educators.

## Perceived Effectiveness of Instructional Method



## Example Display of Proloquo2Go



## Procedures

- Informed consent was obtained from all participants. Only participants with no prior knowledge and/or experience with AAC were included in the study.
- Participants were randomly divided into three groups: Online Support Manual (ONL), Trial and Error (TE), and Direct Instruction (DI), and tested individually in a quiet, secluded room.
- Online Support Manual (Condition 1):** All participants were provided a laptop with "Proloquo2Go Help Overview" loaded onto the browser. A list of modules was provided with the instructions for the participant to work through each module, reading and/or watching the material present for that module. Participants were given 20 minutes to review all listed modules. A member of the research team monitored the training to provide technical assistance only and to verify that the training was successfully completed.
- Trial and Error (Condition 2):** Participants were provided no instructional method and simply given the iPad with Proloquo2Go to complete the competency tasks.
- Direct Instruction (Condition 3):** All participants received direct, one-on-one training from one researcher who followed scripted training procedures. The iPad with Proloquo2Go was used by the instructor for the training and reviewed the module topics given in the Online Support Manual (Condition 1).
- Seven timed tasks were given to each participant to test competency. These tasks were designed to have the participant apply what they had learned in the reviewed module topics. The participant was asked to complete each task in order. There was a time limit of 15 minutes and the amount of time each participant took to complete the list of tasks was recorded.
- If a participant was unable to complete a task, their data was excluded from the study.
- A post-test survey was administered to each participant. The survey gathered information regarding the participant's perception of AAC pre- and post-testing, as well as the effectiveness of the instructional approach, based on a rating scale created by the research team.

## Limitations/Future Considerations

- The results of this study serve as the foundation for further analysis of the effectiveness of these AAC training methods.
- Future studies should replicate this methodology to include educators who possess a negative attitude towards high-tech AAC, as this could further assess whether instruction improves perception towards high-tech AAC.
- To further assess the effects of instructional methods on task completion times on Proloquo2Go, a large n for each condition should be used.
- Individuals with a self-reported condition that affects the way they learn and/or process new information were included within the study.
- Proloquo2Go's online support manual only educates users on the newest version of Proloquo2Go. This manual will be of minimal use to users with older versions of the application.
- The sample used in this study did not represent the population of interest, working teachers. However, this sample allows for a pilot of procedures for future investigators to replicate using educators currently exposed to AAC in their classroom.

## References

- <sup>1</sup>Ligic, L. & McNaughton, D. (2012). Supporting the Communication, Language, and Literacy Development of Children with Complex Communication Needs: State of the Science and Future Research Priorities. *Assistive Technology*, 24(1), 34-44. doi:10.1080/10400435.2011.648572
- <sup>2</sup>Patel, R. & Shammai-Dubner, R. (2005). An AAC training program for special education teachers: a case study of Palestinian Arab teachers in Israel. *AAC: Augmentative & Alternative Communication*, 21(3), 205-217. Retrieved from <https://login.proxy.longwood.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=EB&AN=1061992006&site=ehost-live&scope=site>

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