

Introduction

- Communication is fundamental to participation in all aspects of life⁴
- Adolescents who are beginning communicators (i.e., use less than 50 words expressively) are left behind due to a misfit between their cognitive, linguistic, and motor profiles and the environment³
- Augmentative and alternative communication (AAC) contributes to this due to the time consuming and complex nature of programming devices
- Visual Scene Displays (VSDs) appear to be a less demanding option for beginning communicators¹
- Just-In-Time (JIT) programming allows fast and simple programming so that content may be added in the moment. This may further lessen demands on beginning communicators by providing immediate access to concepts within their environment⁴

Objectives

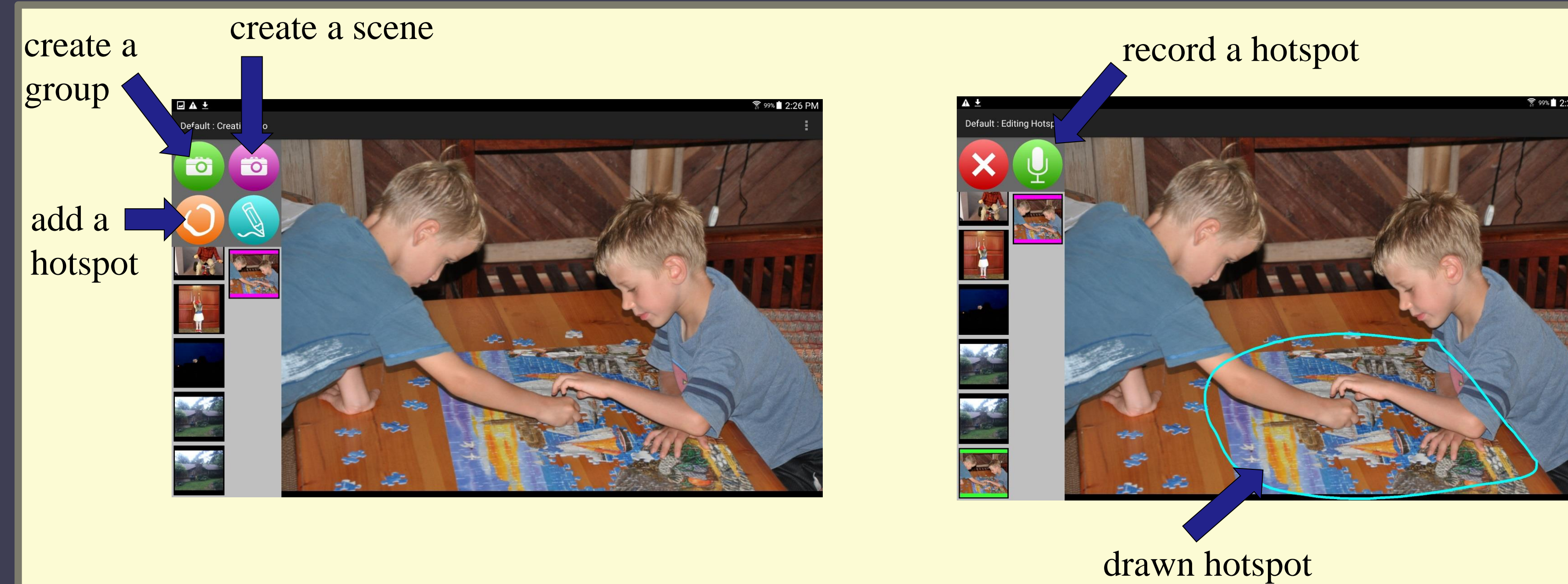
- Primary Measure
 - Investigate the effects of AAC intervention using VSDs with JIT programming on communicative turns in an adolescent with ASD and CCN
- Post Hoc Measures
 - Investigate the effects of AAC intervention using VSDs with JIT programming on visual attention and engagement in an adolescent with ASD and CCN

Methods

Design

- Single-subject, AB design
 - Baseline – access to current communication system
 - Intervention – introduced Android tablet with EasyVSD, an app using VSDs with JIT programming in addition to current communication system
 - Generalization – school professional as partner
- Participant
- 9-year-old male with diagnosis of ASD
 - Used physical communication, approx. 5 signs, picture communication book, and BIGmack Communicator
 - Enjoys music, puzzles, and gross motor activities

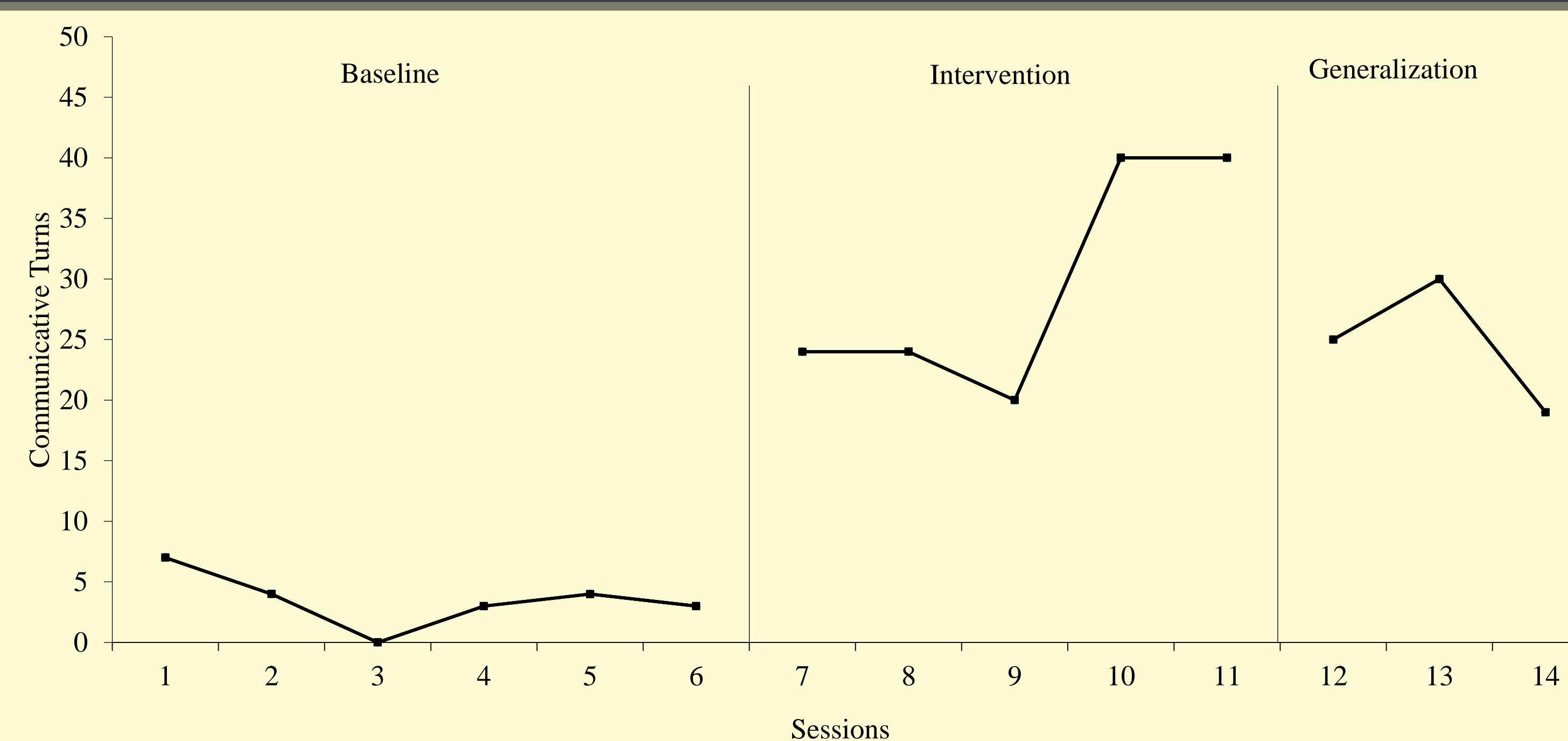
Application Programming Screenshots



Results

Primary Measure

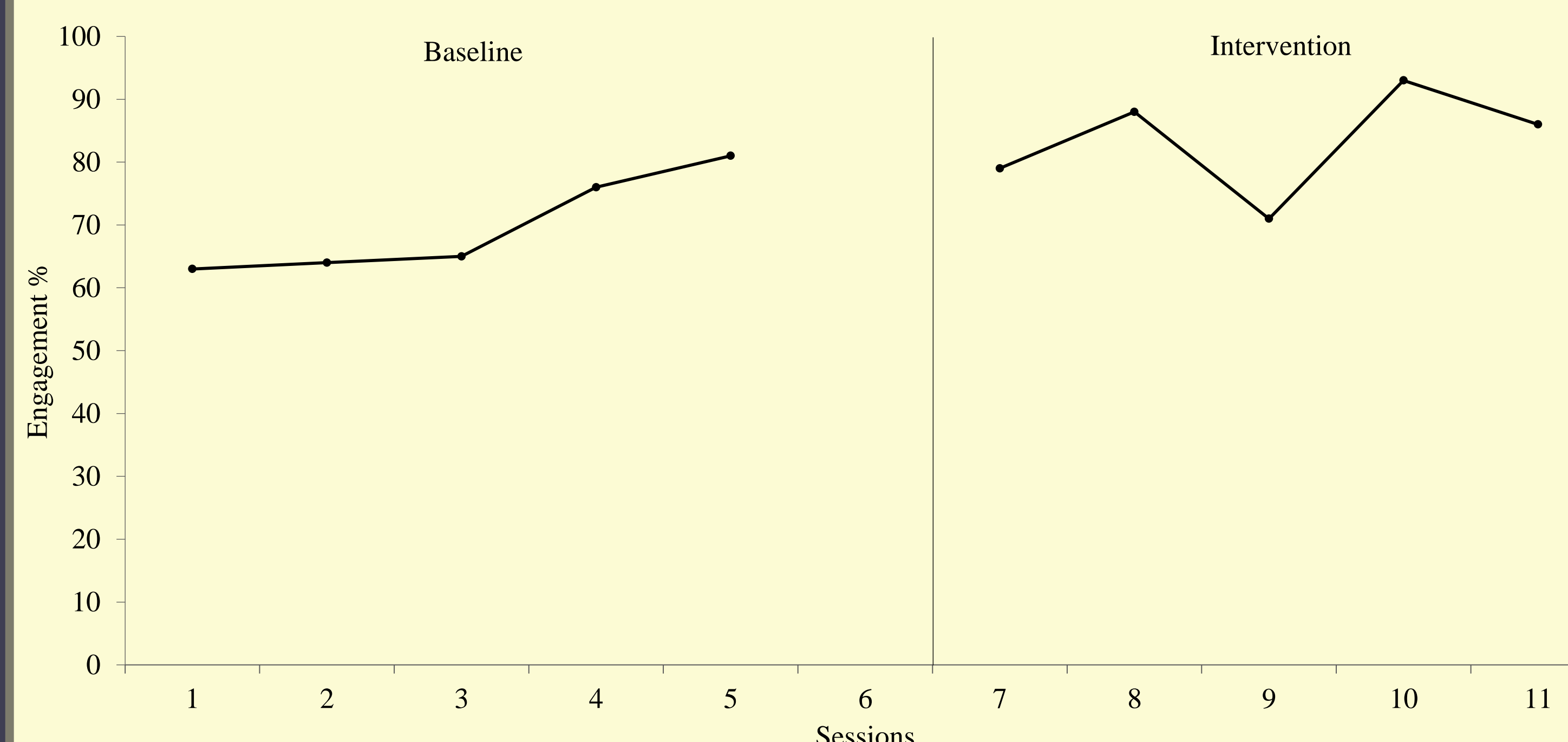
Number of Communicative Turns Per Session



Results

Post Hoc Measures

Percent Visually Engaged Per Session



Participation

Definition

Any independent on-screen selection during the programming process such as the selection of a camera icon to take a photo or selection of the record button to record a hotspot

| | Avg | Range |
|-----|-----|-------|
| Int | 2.4 | 0-5 |
| Gen | 2 | 0-3 |

(per session)

Clinical Implications

- VSDs combined with JIT programming could provide a means to intentionally communicate in rapidly changing contexts
- Simplicity of programming, ability to quickly add new vocabulary relevant to the moment, and ease of use support many challenges of adolescent beginning communicators with CCN
- AAC app developers and programmers who are designing for adolescent beginning communicators should strive for intuitive use

Limitations & Future Directions

- A single case study is not sufficient to draw broad conclusions
- This case study was pulled from a larger study with more participants with various diagnoses who all showed a significant increase in turns, but only the participant profiled here completed generalization²
- Many individuals who use AAC do not have the necessary fine motor skills to use a touch screen
- Further research should address alternative access combined with JIT programming

References

1. Blackstone, S., Light, J., Beukelman, D., & Shane, H. (2005). What are visual scene displays. *RERC on Communication Enhancement*, 1(2).
2. Holyfield, C., Drager, K., Caron, J., & Light, J. (2016). Effects of mobile technology featuring visual scene displays and just-in-time programming on the frequency, content, and function of communication turns by pre-adolescent and adolescent beginning communicators. Manuscript in submission.
3. Light, J., & Drager, K. (2007). AAC technologies for young children with complex communication needs: State of the science and future research directions. *Augmentative and Alternative Communication*, 23(3), 204-216.
4. Light, J., & 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: The Official Journal of RESNA*, 24(1), 34-44.

Acknowledgments and Contact Information

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