Effects of a Group Augmentative and Alternative Communication Learning Experience on Willingness to Communicate and Attitudes toward a Computer-Based System: A Pilot Study

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Psychosocial Aspects of Communication
(Light, 2003, 2014)

Confidence

- Confidence developed through observations of people using AAC successfully and successful, diverse interactions with people who use AAC (Light, 2003)
- Mentor project (Light et al., 2007)
  - Educated adults who use AAC on socio-relational skills
  - Person who uses AAC becomes a mentor to another person who uses AAC
- People who use AAC are a heterogeneous and widespread population

Willingness to Communicate

- Based on trait-based and situational variables
- Learner’s “readiness to enter into discourse at a particular time with a specific person or persons, using a L2” (Schacke et al., 1996, p. 547)
- Situational factors most precede willingness to communicate (WTC)
  - Light (2003) discussion of confidence
- Communicative competence model looks to research in second language acquisition (Light, 1989)
Improving Confidence and Willingness to Communicate

- **Immersion** (MacIntyre et al., 2001; MacIntyre et al., 2003; Baker & MacIntyre, 2003)
- **Robot-assisted simulations** (Lee et al., 2011)
- **Online multiplayer role-play games** (Horowitz, 2016; Reinders & Wattana, 2014)
- **Pair interactions, group dynamics oriented instruction, and cooperative learning techniques** (Alikhani & Bagheridoust, 2017; Ning, 2013; Yu, 2015)
- **Community engagement and service encounters** (Pellettieri, 2011; McNaughton & McDonough, 2015)

Second Language Instruction Methods

**Sociocultural Theory** (Vygotsky, 1978)
- Zone of proximal development
- Does not need to be only between an expert and beginner, but learning can occur between varied levels including beginner and beginner (Lantolf, 2000; Omode, 1994)
- Parallels with many of the methods used to improve confidence and WTC: peer interactions, immersion classrooms, etc.

AAC Instruction Methods

- **School-Based Services**
  - 80% of SLP school services are pull-out (2016 School Survey, 2016)
  - Instructional time available in classrooms
  - Difference of interactions that take place in pull-out vs. push-in (Falk-Ross, 1996)
  - Push-in results in greater gains in language skills and expression for children with language disorders (Falk-Ross, 1996; Stephenson, 2006)
  - Benefits to children without disabilities for language learning (Capirci et al., 1998)
  - Opportunities for co-teaching (Reblin, 1994)

Significance

- Psychosocial factors of communication are important in the communicative competence of people who use AAC (Light, 2003; 2014)
- Motivation, attitude, confidence, and resilience
- People who use AAC may experience a lack of confidence and an unwillingness to communicate using their system
- Although established as theoretically important, research on improving confidence to communicate using AAC is limited

Children who use AAC are not provided with opportunities to interact and communicate with their peers at a level that allows for them to further develop their language (Romski & Sevcik, 1996)
Objective

Does a group AAC intervention result in change in children’s general motivation to communicate, attitude toward using computer-based AAC, and willingness to communicate using AAC when compared to a one-on-one AAC intervention and a control group?

Participants and Design

- 3rd grade students with no history of a communication disorder
- Mixed within/between subjects design
  - Condition 1: Group AAC experience
    • 5-8 students
  - Condition 2: One-on-one AAC experience
    • 5 individual students
  - Condition 3: Non-AAC group control activity
    • 5+ students
    • Non-AAC technology activity

Procedures

- Consent / assent; placement into condition
- Pre-test measures of motivation, attitude, and WTC
- Session 1 Activities
- Session 2 Activities
- Post-test measures of motivation, attitude, and WTC

Instrument Procedures

- Completed on Qualtrics (2005) on iPad
- All items read aloud to the children
- WTC items presented with corresponding image
  • Referenced at each item
Instruments: Motivation

6 items based on Bandura (1986)
• Value of communication and drive to actually communicate
• Sliding scale 0-100 measurement (McCroskey, 1992)

Instruments: Attitude toward AAC

12 items adapted from SLP perspectives on AAC abandonment survey (Johnson et al., 2006)
• Inquires child's attitude toward learning about and using computer-based AAC
• Affective, behavioral, and cognitive items
• Sliding scale of 0-100 (McCroskey, 1992)

Instruments: Willingness to Communicate

18 total items based on scales used by MacIntyre et al. (2001), Ryan (2009), and Yashima (2009)
• 3 situations presented with corresponding images
  • In class with everyone else using AAC
  • In class with no one else using AAC
  • Out of class with no one else using AAC
• Sliding scale of 0-100 (McCroskey, 1992)

WTC Instrument Images

[Images of children using AAC devices]
Group and One-on-One Intervention

- Activities based on second-language classrooms (Curtin & Dahlberg, 2016)
- Students provided with consistent models on device
- All communication expected to be in target language (using AAC)

AAC Device used in Group and One-on-One Sessions

- Proloquo2Go (AssistiveWare, 2009)
- Core Vocabulary
  - Based on Vocabulary for Preschool, School Children (University of Nebraska-Lincoln Augmentative and Alternative Communication, 2019)
  - Activity-based vocabulary
    - Actions and descriptors
    - Breakfast vocabulary

Group and One-on-One Intervention

Session 1
- Demographics/Pre-test
- Greetings
- Simon says

Session 2
- Greetings
- Restaurant interactions
- Post-test

➢ Each session lasting approximately 30 minutes

Control Group

Session 1
- Demographics/Pre-test
- GoNoodle Educational Activity

Session 2
- GoNoodle Educational Activity
- Post-test

➢ Each session lasting approximately 30 minutes
Data Analysis

Psychometric Measures of the Instruments
• Face validity via expert-driven review of instruments
• Pilot with children
• Test-retest reliability via Cronbach’s Alpha

Data Analysis

Between Group Comparisons
• Kruskal Wallis analyses
  • Pre- and post-test median comparisons between the 3 groups
  • 3 separate analyses for the 3 hypotheses
  • Motivation, attitude, and WTC

Within Group Comparisons
• Mann Whitney U analyses
  • Pre/post-test comparison for each group
• Cronbach’s Alpha
  • Test-retest reliability for control group

Between Group Comparisons

Discussion

• Use of quantitative instruments with children
  • Modifications to the instrument items themselves
  • Modifications to administration of the instruments
• Methods of assessing attitude, confidence, and WTC for people who use AAC
  • SLA has also previously used behavioral methods (# of turns taken, # of words used, etc.)
• Next directions for intervention
  • Other methods to pilot with children who do not use AAC regularly?
  • Modifications to current intervention methods/suggestions for inclusion of children who use AAC.

References


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References
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