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Grecol, Christina K.; Sternad, Emily A.; Demiri, Vonesa; Pukys, Nina G.; Roth, Amy; Kasunick, Katherine; and Smith, Kaili, "Reading-related phonological processing interventions for individuals who use augmentative and alternative communication (AAC): A systematic review of the research" (2018). *Undergraduate Research Posters 2018*. 55.

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Reading-related Phonological Processing Interventions for Individuals who use Augmentative and Alternative Communication (AAC): A Systematic Review of the Research

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Abstract	Intervention Studies			
The purpose of this investigation was to conduct a systematic review to etermine the effectiveness of reading-related phonological processing terventions designed to meet the needs of individuals with complex ommunication needs (CCN) who require augmentative and alternative	Accessible Literacy Learning (ALL) Curriculum	Nonverbal Reading Approach (NRA)	Early Reading Skills Builder (ERSB)	Other Approaches
ommunication (AAC). An extensive review of the literature including nonological awareness, letter-sound correspondences, and single-word ecoding was conducted. A total of 22 intervention studies (24 experiments) et criteria for inclusion and advanced to the full coding and analysis phase of	ALL Curriculum (Light & McNaughton, 2009) Fallon (2001) Light McNaughton Wever & Karg (2008)	Nonverbal Reading Approach Heller, Fredrick, Tumlin, & Brineman (2002)	GoTalk Phonics Ahlgrim-Delzell, Browder, & Wood (2014)	Direct Instruction Johnston, Buchanan & Davenport (2009)
e investigation. Results reveal that individuals who use AAC with a wide inge of disabilities and ages can learn phonological processing skills for ading. Studies utilized interventions that were modeled after the Accessible	ALL Curriculum with Extension Activities	Leytham (2013) NRA provided by teacher vs	Early Reading Skills Builder Ahlgrim-Delzell, et al. (2016)	Trinh (2016) Shared Reading:

Accessible Literacy Learning (ALL) Curriculum

The Accessible Literacy Learning (ALL) Curriculum utilizes explicit

instruction methods to promote errorless learning through the use of:

Literacy Learning curriculum, the Early Reading Skills Builder, the Nonverbal Reading Approach, storybook reading with focus on reading-related phonological processing skills, combinations of storybook reading with other approaches, and other approaches.

Methods

Inclusion Criteria: Studies published between 1980 - June 2018 in peer review journal or as a dissertation, published or translated into English, provided intervention with a stated goal to improve reading-related phonological processing, reported data on phonological processing skills before, during, and/or after intervention, utilized a recognized research design or were descriptive case studies, involved individuals who required AAC or utilized an AAC-based intervention. **Exclusion Criteria:** Unpublished studies and studies which provided intervention exclusively to individuals who do not use AAC.

Search Procedures: Database, item-by-item table of contents, and author searches.

Intervention Studies were Coded for: Study identification, study design, participant information, independent and dependent variables, outcomes, and certainty of evidence.

Participants

A total of 93 participants were included in these studies Ages ranged from 3 years; 6 months to 54 years

- Participant's had the following primary diagnoses:
- autism spectrum disorder (32)
- cerebral palsy (22)
- developmental delay (8) • At least 53 participants had a primary or secondary diagnosis of intellectual disability

• down syndrome (6)

• Other diagnoses (31)

Benedek-Wood (2010) Caron (2016)

ALL Curriculum with Pairs of Children Ainsworth (2014)

Yorke (2017)

ALL Curriculum Taught to Instructional

Assistants

Westover (2010)

NRA with Motoric Indicators Swineheart-Jones & Heller (2009)

Coleman-Martin, Heller, Cihak, &

Irvine (2005)

Phonic Faces vs. Alphabet Stories Banajee (2007)

Taught One Skill and Evaluated an

Other Truxler & O'Keefe (2007) Bailey, et al(2011)Bailey, et al(2012)Clendon et al (2005) Naylor (2013)

Early Reading Skills Builder (ERSB)

The Early Reading Skills Builder (ERSB) started as GoTalk Phonics and then moved to the iPad as GoTalk Now with ERSB.

ERSB teaches the following skills:

- Letter-sounds
- 2. Blending
- 3. Decoding
- 4. Encoding
- 5. Comprehension





The ALL Curriculum provides guidance for teaching a number of reading-related phonological processing skills including: letter-sound correspondences, blending,

1. Introduction,

3. Guided practice,

2. Modeling,

- 4. Independent practice
 - m S a
 - 5. Positive or corrective feedback.



Results Summary

Results revealed that individuals who use AAC with a wide range of disabilities and ages can learn phonological processing skills for reading.

**Also importantly, successful studies taught in intervention the same skills later assessed. **

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segmentation, and decoding as well as sight words and shared reading. Each evaluates an individual's learning through pointing to the target item from a field of four.





Nonverbal Reading Approach (NRA)

The Nonverbal Reading Approach (NRA) teaches children to decode by:



Storybook Reading

Storybook Reading uses *Phonic Faces* and Alphabet Stories to teach:

- Letter-sound correspondences
- 2. Initial Phoneme Segmentation

Phonic Faces provides guidance on how to produce the sounds and their oral formation. Alphabet Stories emphasizes only a given letter. As a result, the use of *Phonic Faces* is more effective than the use of *Alphabet Stories*.



Jolly Phonics is a computerized intervention program popular in the UK

This program implements a game system to engage participants in the



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