# Infusing Literacy Supports into AAC Across the Developmental Trajectory

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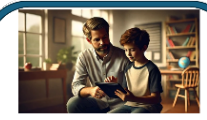The Pennsylvania State University

- Literacy skills are essential for full participation in education, employment, and independent living (Light & McNaughton, 2013)
- For people who use AAC, functional literacy skills are critical for generative, independent communication but are often left out of literacy instruction
- Functional literacy skills require the integration of multiple complex skills (e.g., phonological awareness, sound blending, letter-sound correspondence; Adams, 1990)
- The Transition to Literacy (T2L) features can be integrated into AAC applications to support formative literacy skills, to supplement systematic direct literacy instruction
  - Sight word, decoding, sound blending, letter-sound correspondence
- We aim to provide examples of ways we have used the T2L feature to increase exposure to literacy aspects for a range of participants across the language and literacy developmental trajectory

**Poster and additional resources:**

### Participant panels

**Participants:** 4 preschool aged children with developmental disabilities (3;10 – 5;4)
**T2L Feature:** Single Word
**Targeted Literacy Skill:** Single word reading
**Device:** VSD display
**Activity:** Shared storybook reading
**Outcome:** All 4 participants increased accuracy reading targeted single words (Boyle et al, 2021)

**Participants:** 6 adults with IDD (ages 22 – 55)
**T2L Feature:** Single Word
**Targeted Literacy Skill:** Single word reading
**Device:** VSD display
**Activity:** Social interactions
**Outcome:** 3 of 6 participants increased accuracy reading targeted single words (Holyfield et al., 2020)

**Participants:** 6 children on the autism spectrum (ages 5-10)
**T2L Feature:** Decoding
**Targeted Literacy Skill:** Letter-sound correspondence
**Device:** Grid display
**Activity:** Shared storybook reading
**Outcome:** All 6 participants increased accuracy identifying target letter sounds

**Participants:** 2 young adults with multiple disabilities (ages 22 & 25)
**T2L Feature:** Decoding
**Targeted Literacy Skill:** CVC decoding
**Device:** Video VSD displays
**Activity:** Watching animal TikTok videos over Zoom
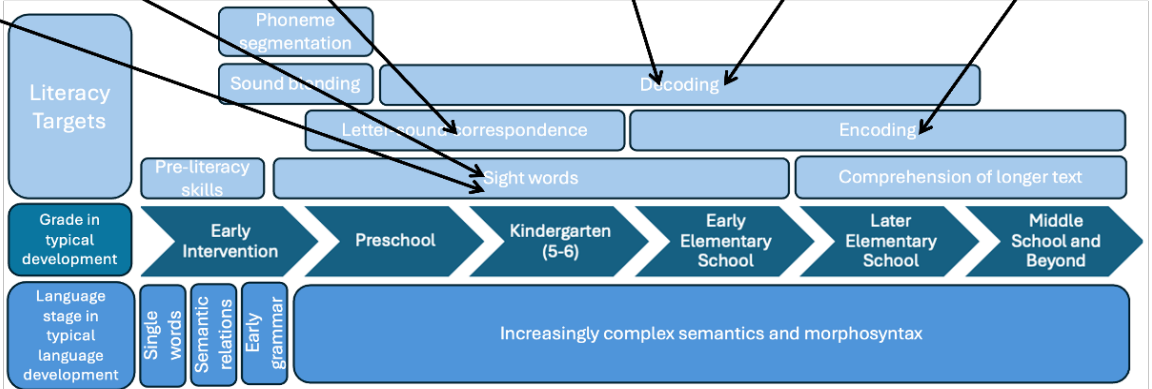**Outcome:** Ongoing study but one participant has demonstrated consistent increased decoding skills

**Participants:** 3 young adults with Down syndrome (ages 18-27)
**T2L Feature:** Decoding
**Targeted Literacy Skill:** Decoding digraphs
**Device:** VSD display
**Activity:** Social interactions over Zoom
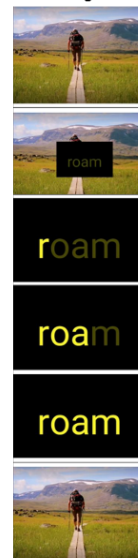**Outcome:** All 3 participants increased accuracy decoding targeted digraphs in novel words (Holyfield et al., 2024)

**Participants:** One 15-year-old adolescent with Down syndrome
**T2L Feature:** Decoding
**Targeted Literacy Skill:** Encoding digraphs
**Device:** VSD display
**Activity:** Social interactions over Zoom
**Outcome:** Participant increased accuracy encoding all targeted digraphs in novel words
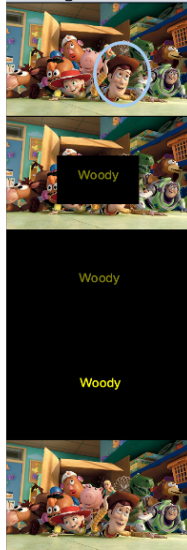
### Literacy Targets diagram

Literacy Targets:
- Phoneme segmentation
- Sound blending
- Decoding
- Letter-sound correspondence
- Encoding
- Pre-literacy skills
- Sight words
- Comprehension of longer text

**Grade in typical development:** Early Intervention → Preschool → Kindergarten (5-6) → Early Elementary School → Later Elementary School → Middle School and Beyond

**Language stage in typical language development:** Single words | Semantic relations | Early grammar | Increasingly complex semantics and morphosyntax

### Literacy Skill Table

| Literacy Skill | Description | | T2L Feature |
|---|---|---|---|
| Preliteracy Skills | • Print awareness in books/the environment<br>• Print motivation<br>Vocabulary knowledge<br>• Narrative skills | | • T2L Single Word feature – print awareness (i.e., drawing attention to print)<br>• VSD-based AAC systems – print motivation, vocabulary knowledge, narrative skills with embedded hotspots to support communication and/or language learning |
| Sound Blending | Merging together individual phonemes to form a word | /d/ /a/ /g/ /d a g/ "dog" → | T2L Decoding feature |
| Phoneme Segmentation | Recognizing the individual phonemes in a word | "cat" /k/ - /aet/ starts with /k/ | T2L Decoding feature<br>Adapted to target initial phoneme segmentation (continuing to other word positions) |
| Sight Word Recognition | Recognizing a whole written word as one symbol | dog grumpy happy bear | T2L Single Word feature |
| Letter-Sound Correspondence | Pairing a letter (grapheme) with the sound it makes (phoneme) | d makes the sound /d/<br>o makes the sound /o/<br>g makes the sound /g/ | T2L Decoding feature<br>Adapted to target initial letter phoneme segmentation with target letter sounds in the initial position |
| Decoding | Sounding out novel words – requires (a) letter-sound correspondence and (b) sound blending skills | dog (written) /d/ /a/ /g/ /d a g/ "dog" → | T2L Decoding feature |
| Encoding | Spelling words by sound – requires (a) letter-sound correspondence and (b) phoneme segmentation skills | "cat" /k/ /ae/ /t/ → cat (written) | T2L Decoding feature |

**T2L Decoding Feature**

**T2L Single Word Feature**

roam — Woody

### Example Intervention Activities
(could target any literacy skill)

| Younger Learners | Older Learners |
|---|---|
| • Shared storybook reading: (a) digital books programmed into VSD apps; (b) storybook topic pages in a grid app (personalized books or commercially available books)<br>• Shared viewing of motivating videos in video VSD apps – e.g., animated storybooks, clips from preferred shows | • Shared viewing of motivating videos in video VSDs – e.g., YouTube/TikTok videos, clips from preferred shows, music videos<br>• Video (or static) VSD models of sequenced activities that are motivating in daily life (e.g., cooking, employment activities, grocery shopping, etc.)<br>• Structure conversation about preferred topics (e.g., sports, music, celebrities, hobbies) in VSD apps – may be in the context of age-appropriate personalized "books" |

| | Scene & Heard Pro | Go Visual | Saltillo Dedicated Devices | Snap Scene | Scene Speak | GoTalk Now |
|---|---|---|---|---|---|---|
| **T2L Single Word** feature | Yes | Yes | Yes | Yes | Yes | -- |
| **T2L Decoding** feature | Yes | -- | -- | -- | -- | -- |
| VSDs | Yes | Yes | -- | Yes | Yes | Yes |
| Video VSDs | Yes | Yes | -- | -- | -- | -- |
| Free Trial Version | -- | Yes | -- | Yes | -- | Yes |

**Referenced Transition to Literacy (T2L) Articles**
Boyle et al. (2021)
Holyfield et al. (2020)
Holyfield et al. (2024)

**Apps with T2L Features**
Scene & Heard Pro
GoVisual; GoVisual Experience (free version)
Saltillo dedicated devices
Snap Scene and Snap Scene Lite (free version)
Scene Speak
GoTalk Now; GoTalk Now Lite (free version)

**Additional Resources**
AAC Learning Center: T2L Decoding
AAC Learning Center Moodle (with self-paced trainings on literacy intervention for AAC users)
Accessible Literacy Learning app (ALL)
AAC Literacy PSU
T2L Bundle through the RERC (free CEUs)