

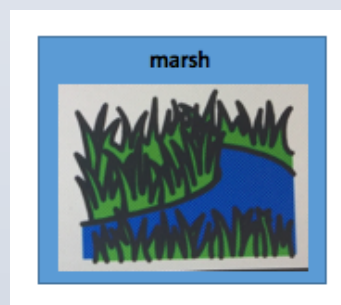
INTRODUCTION

- Changes in federal policy have promoted a new emphasis on teaching academic content to all students.
- This includes those who require AAC to communicate and participate.
- These students must have access, be involved, and progress in the general curriculum, and therefore, instruction must be adapted to meet their needs.

How can we support participation in the general curriculum through AAC systems?

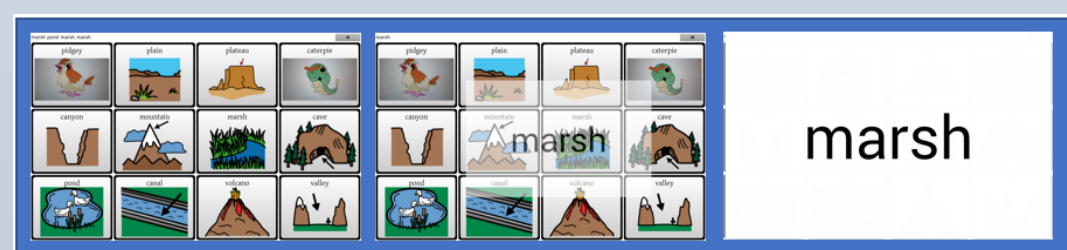
- We can use the student's AAC system to capitalize on content specific literacy and vocabulary skills

- Challenges with current systems:
- Grid-based AAC systems use statically paired text and graphic symbols to represent concepts that individuals communicate with. Yet, previous research has demonstrated the static pairing of print and graphic symbols, blocks word learning.



Example of the static presentation of the text "marsh"

- Potential Solution:
- With minor system design changes, the AAC system can dynamically present the the text (Light et al., 2014)
- The text dynamically appears from the graphic symbol and the text is paired with the speech output of the word



Example of the AAC system dynamically presenting the word "marsh"

AIM

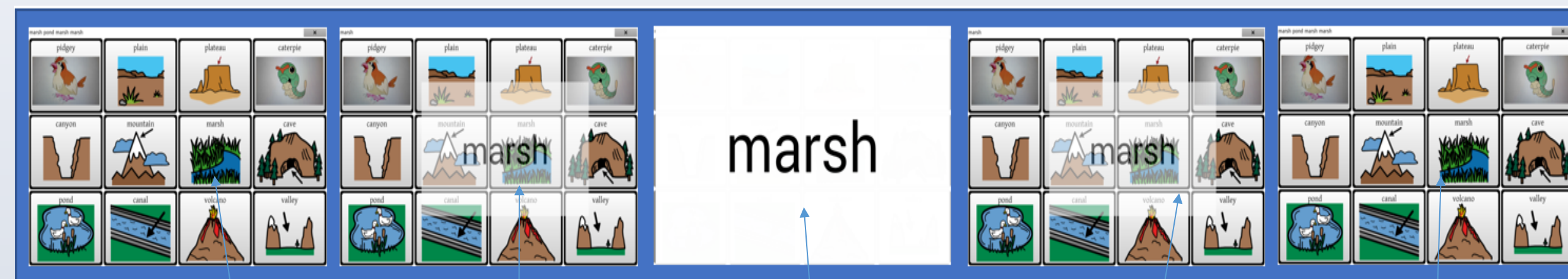
- Investigate the effect of dynamically presenting text, paired with speech output, upon selection of a specific graphic symbol in the device, on the sight word learning of 15 academic content words, for an individual with ASD and CCN

PARTICIPANT

- 9 years old with Diagnosis of ASD (CARS-2: Severe)
- Participates in Autism Support Classroom & inclusion for some subjects (e.g., language arts) with paraprofessional support
- Has Echolalic speech, rote phrases (e.g., "ok, time to work." "no, time for computer")
- Has ~40 sight words, knowledge of letter-sound correspondences, not decoding, not reading connected text

MATERIALS

- Transition to Literacy (T2L) software feature (Light et al., 2014) was used within a NovaChat 12 (Saltillo) with Grid-Based AAC Display of Landform words



1. The individual selects the graphic symbol (e.g., marsh)

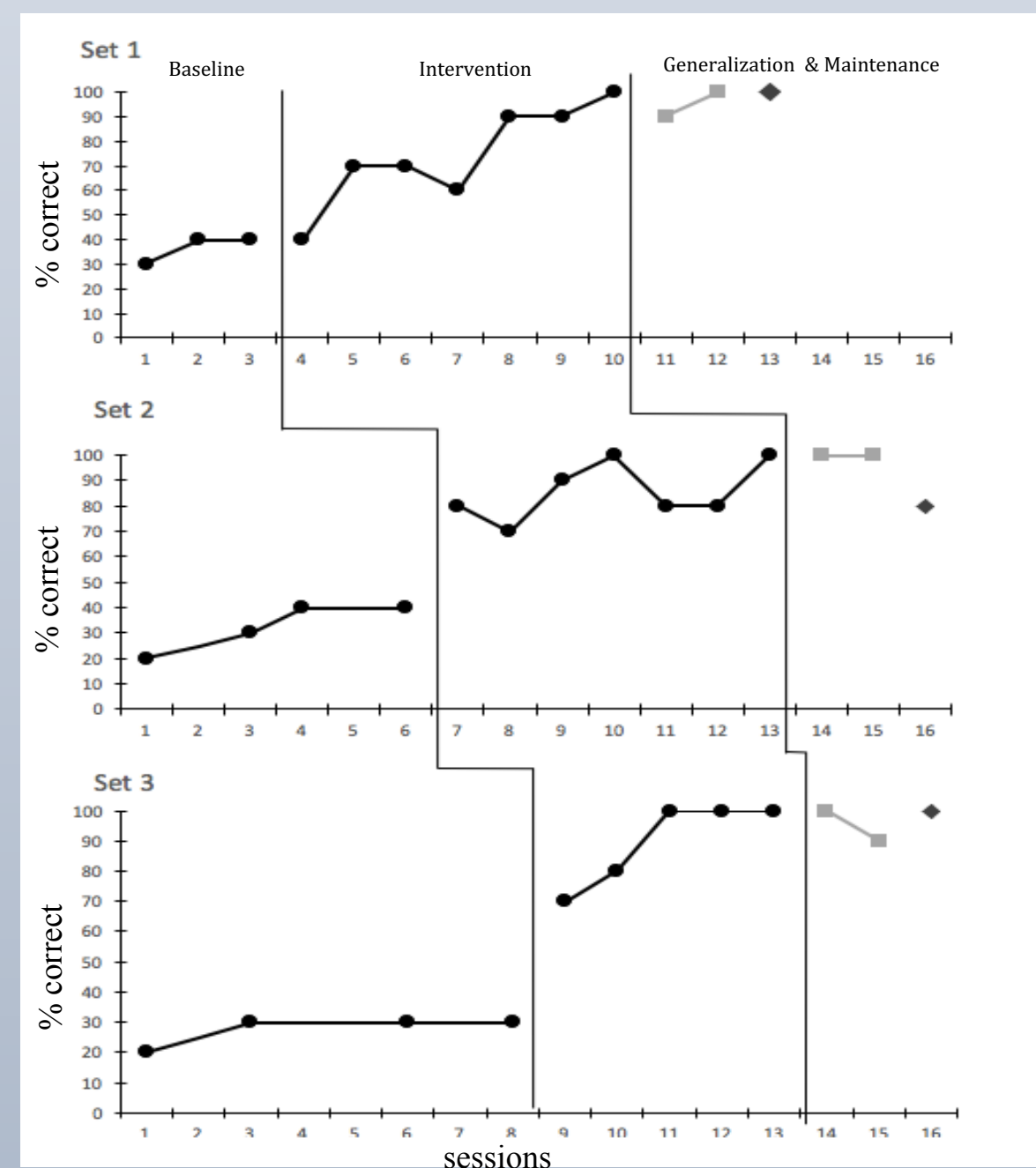
2. The text dynamically appears from the graphic icon that was selected

3. The word is spoken from the device, the text replaces the grid and stays on the screen for 3 seconds

4. The word dynamically disappears back into the graphic icon that was selected

5. The grid is back to original view – with statically paired graphic symbol and text

RESULTS



	Average Baseline Data	Average Intervention Data	Average Gain Score
Set 1	37%	74%	+59%
Set 2	33%	86%	+79%
Set 3	28%	90%	+86%

This table corresponds to the graphs on the left. It contains average baseline and intervention data for each set as well as the average gain score.

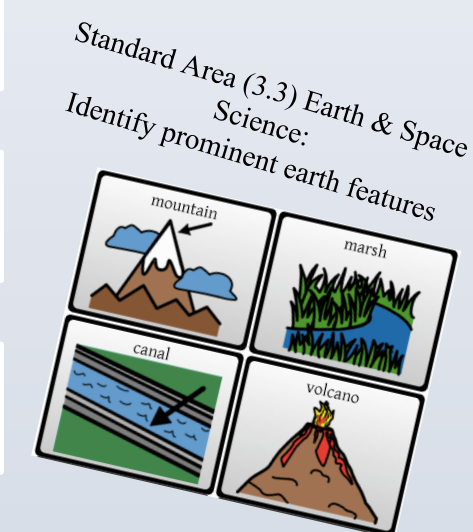
Word Set	Total # of Intervention Sessions	Total # of Exposures per word	Total of Exposure Time per word
Set 1: marsh, mountain, plain, plateau, sandbar	7	28	84s (1 min, 24 sec)
Set 2: cave, valley, volcano, canal, island	7	28	84s (1 min, 24 sec)
Set 3: cliff, canyon, prairie, pond, iceberg	5	20	60s (1 min)

This table contains the total number of interventions sessions per word, total number of exposures per word, and total dynamic text exposure time per word for each set of words. The participant saw the dynamic text 4 times for 3 seconds, per word.

METHODS

- Design: A single-subject multiple probe design across sight word sets
- 3 sight word sets, with 5 words per set → total of 15 words

- Set 1: marsh, mountain, plain, plateau, sandbar
- Set 2: cave, valley, volcano, canal, island
- Set 3: cliff, canyon, prairie, pond, iceberg



PROCEDURES

Paraprofessional implemented probes & intervention (use of device)

Baseline	Intervention	Generalization	Maintenance
-Probes (assessment) -Task 1: Picture matching -Task 2: Definition matching	-Probes (assessment) -Task 1: Picture matching -Task 2: Definition matching *Task 1 & 2 include device with grid display, speech output, & no dynamic text	-Probes (assessment) through picture matching with re-ordered text-only grid display	-Probes (assessment)

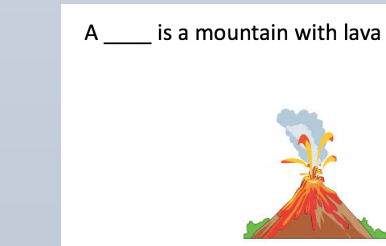
Probe



Task 1: Picture matching



Task 2: Definition matching



CONCLUSION

- Emerging research is demonstrating the effects of the transition to literacy (T2L) feature (Light et al., 2014) on sight word learning (Caron et al. 2018; Holyfield et al. 2018; Mandak et al., 2018). This study extends positive findings to sight word learning for academic related vocabulary with one individual with ASD.
- With minor AAC systems design changes, AAC systems could potentially be used to foster fuller participation in the general curriculum – promoting both communication and literacy learning.