

# The Relation Between Spoken Vocabulary Acquisition and Frequency of At-Home Retrieval Practice in Children

## who are Deaf or Hard of Hearing

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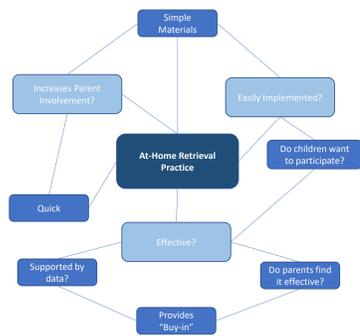
### Background

Children who are deaf or hard of hearing (D/HH) and use spoken language struggle to learn vocabulary at the rate of their same-aged peers with typical hearing (Nott et al., 2009). High vocabulary scores in Pre-K are correlated to higher literacy skills, and consequently, higher academic achievement later in life (Marchman & Fernald, 2008). Because vocabulary builds upon itself, it is vital to begin closing the vocabulary gap as soon as possible. Thus, practices to diminish the gap are essential to deaf educators working in early intervention.

Retrieval practice is a cognitive strategy which relies on recall to pull information "out" of the brain (as opposed to repeatedly pushing it "in"). The study "The Effect of Retrieval Practice on Vocabulary Learning for Children who are Deaf or Hard of Hearing" (2019) by Casey Reimer found retrieval practice of vocabulary to be more beneficial for children who are D/HH in acquiring new words than repeated exposure. Therefore, retrieval practice is hypothesized to be a preferred strategy for teaching vocabulary.

Another strategy to diminish the gap is parent involvement. Parent involvement is an important factor in developing spoken language for children who are deaf or hard of hearing (DesJardin, et al., 2006).

### Purpose



The purpose of this small-scale study is to determine if there is a correlation between expressive vocabulary acquisition and frequency of at-home retrieval practice.

Additionally, this study aims to gain insight on parent perception of at-home retrieval practice. More specifically, do parents feel that at-home retrieval practice is effective for vocabulary growth, does it increase their involvement, and is it simple to implement? The discussion analyzes parent survey reports and feedback.

The implications of this study will help fellow educators determine if at-home retrieval practice can impact growth in expressive vocabulary development. Furthermore, it will provide insight for professionals in early intervention on how to collaborate with parents to execute this strategy.

### Methods

#### In the Classroom

- A weekly thematic unit and 10 related vocabulary words were selected for all 5 participants
- Vocabulary sets were comprised of 6 nouns, 2 adjectives, and 2 verbs
- Each vocabulary word had its own picture card and a label
- On Monday, participants were tested on their expressive baseline knowledge of the vocabulary
  - Participants were presented with the picture card and asked to label it
- Participants completed 3 rounds of individual retrieval practice with their teacher Monday-Friday
  - "round" = all 10 words, 1x each
- Structured group activities for vocabulary targets were completed after individual practice
- On Friday, participants were tested again over their final expressive knowledge of vocabulary
- Baseline expressive scores from Monday, final expressive scores from Friday, and the difference between the two were documented

#### At Home

- Parents were coached on how to facilitate retrieval practice in the home via a written handout, video instruction, and video examples
  - They were informed on rationale for using retrieval vs other types of practice
  - They were instructed on wait time, levels of prompting, how to engage their child, and when to give their child the word if they cannot retrieve it themselves
  - Their teacher checked for understanding and offered opportunities for questions and clarification
  - Parents were encouraged, but not pressured, to practice as much as possible
- Every Monday, parents were provided with an individual set of picture cards with labels to keep at home
- Parents reported frequency of at-home practice Monday-Thursday via a shared calendar.
- The total frequency of at-home practice per week was documented on Friday

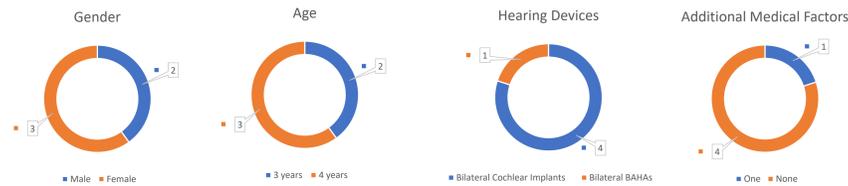
Weekly Schedule				
Monday	Tuesday	Wednesday	Thursday	Friday
Baseline Expressive scores obtained				
Individual retrieval practice with teacher 3x	Individual retrieval practice with teacher 3x	Individual retrieval practice with teacher 3x	Individual retrieval practice with teacher 3x	Individual retrieval practice with teacher 3x
Structured group vocabulary activity	Structured group vocabulary activity	Structured group vocabulary activity	Structured group vocabulary activity	Structured group vocabulary activity
Picture cards sent home for the week -Parent opportunity to practice	-Parent opportunity to practice	-Parent opportunity to practice	-Parent opportunity to practice	-Parent opportunity to practice
				-Frequency of at-home practice recorded
				-Final Expressive vocabulary scores obtained

#### Parent Survey

- At the end of the study, parents were sent a survey with eight closed questions pertaining to at-home practice
- Were you more likely to practice vocabulary at home because of retrieval training & picture cards?
  - Was your child more engaged during retrieval practice than with previously used strategies (such as repeated exposure)?
  - Did you feel more involved in your child's language growth from retrieval practice?
  - Do you feel your child used vocabulary spontaneously more often at the end of the week vs. the beginning?
  - Did retrieval practice make you more likely to use the vocabulary words at home during conversation?
  - Was it difficult to engage your child in retrieval practice at the beginning of the semester?
  - Was it difficult to engage your child in retrieval practice at the end of the semester?
  - Overall, do you feel retrieval practice helped your child's language grow?

Parents were also encouraged to share comments, suggestions, and feedback.

### Participant Demographics



All participants were enrolled full-time at an OPTION, Inc. school and use Listening & Spoken Language as their primary communication mode.

### Results

Data was obtained over the course of 14 weeks. 6 weeks were selected for final analysis. Criteria for selected weeks included all participants being present on Monday and Friday (data collection days) and all participants being present for at least 3 on-site school days.

It is important to note that COVID quarantines and guidelines greatly impacted student attendance during the course of this study.

The average of students' baseline expressive scores, final expressive scores, the percentage point between the two, and frequency of practice were compared.

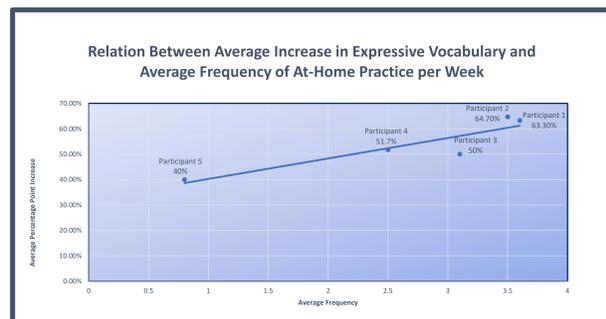
Participant	Average baseline Expressive scores	Average final Expressive scores	Average Frequency of practice per week	Average Increase of from baseline to final expressive scores
1	35%	98.3%	3.6	+63.3%
2	28.3%	93%	3.5	+64.7%
3	21.7%	71.7%	3.1	+50%
4	18.3%	70%	2.5	+51.7%
5	18.3%	58.3%	.8	+40%

Two participants who practiced at-home an average of at least 3.5 times/week demonstrated a >60% increase in vocabulary growth from their baseline to final expressive scores.

Two participants who practiced at-home an average of at least 2.5 times/week demonstrated a ≥50% increase in vocabulary growth.

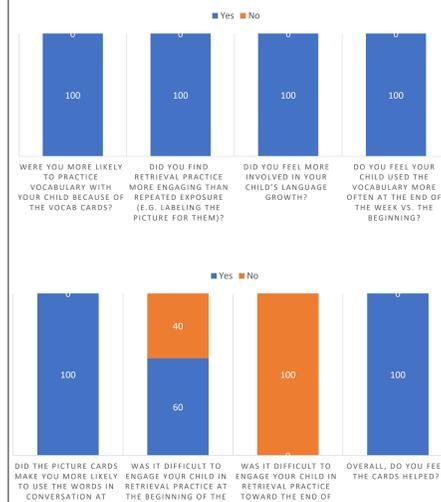
One participant who practiced at-home at an average of at least .5 times/week demonstrated a 40% increase in vocabulary growth.

In this sample size, students who practiced approximately 4.5 more times increased their final expressive scores by 23.3%.



### Discussion

#### PARENT FEEDBACK RESPONSES



The parent survey was comprised of 8 closed questions. The responses yielded overwhelmingly positive responses for at-home retrieval practice. 100% of parents reported they were more likely to practice vocabulary with their child because of the retrieval practice materials (AKA vocabulary/picture cards). 100% of parents found it more engaging for their child than other previously taught Listening & Spoken Language Strategies, such as repeated exposure/labeling. 100% of parents felt more involved in their child's language growth. All parents reported that having picture cards made them more likely to use the vocabulary during conversation in the home. 100% of parents found their child used the vocabulary more toward the end of the week. 60% of parents reported that it was difficult to get their child engaged in retrieval practice at the beginning of the study (semester). However, of those parents, all reported that it was not difficult by the end of the study. Parents shared ways they made retrieval practice more enjoyable for their child. For example, making retrieval practice into a game. Two parents gave anecdotal feedback that by the end of the semester, their children requested to do at-home retrieval practice because they found it fun.

Parents found retrieval practice and picture cards to be beneficial overall.

#### Trends in Parent Feedback

"Even my non-reading daughter can get involved and engaged with (name) using the cards."

"It is a wonderful tool for the whole family!"

"We included her sibling and would do "lightning rounds" whoever said the vocabulary word first won!"

#### Family Involvement

Three of the five parents shared that siblings became involved in retrieval practice. One of the ways this was accomplished was by making retrieval practice a competition. It was also turned into dramatic play opportunity, where the children would take on roles as a teacher or student. The picture cards made it possible for siblings who were similar in age and abilities to still aid in vocabulary growth. Making retrieval practice into a game can increase eagerness to participate, and in turn, increase frequency of practice.

"They are easy to get out during dinner and practice."

"It has become an important tool to easily access and remember which vocabulary to target."

"(The vocab cards) made it easy for us as parents to grab out of the book bag and go over with her."

#### Ease of Implementation

All parents reported that the ease of materials increased their frequency of practice. Two of the five parents indicated that they saved their previous picture cards to help with retention of vocabulary. One parent shared that during holiday breaks, she would get out previous weeks picture cards to review with her child. Another parent shared that keeping all the picture cards offered an easy platform to revisit previous vocabulary. Not only are the picture cards simple to use, but they are materials the parents returned to.

"As the week went on, she would often tell us more than just the word. She would speak in full sentences and sometimes tell us a whole story."

"I loved knowing each week exactly the words that were being focused on. This made it easy for me to bring them up more often in day-to-day activities and conversations."

"(Name) is definitely more talkative about flash card topics he has learned."

#### Opportunities to Expand Language

Participants were expanding on their language in addition to retrieving the vocabulary word during practice. Two of the five parents commented that their child would go into detail after labeling the vocabulary. Details would include what they learned about it at school, a related personal experience, physical attributes, function, and/or related concepts.

### Limitations

- Student Attendance
- Length of study
- Self-survey
- Sample size
- Variation of hearing devices, degree of hearing loss, and additional medical diagnosis for 1 participant
- Standardized vocabulary scores not factored
- Differences in early intervention among participants

### Conclusion

Children who are deaf or hard of hearing and learning spoken language fall behind their same-aged, typical hearing peers in vocabulary development. It is imperative for deaf educators working in early intervention to ameliorate the language gap. Combining the knowledge that parent involvement increases the likelihood of academic success and the recent study on retrieval practice of vocabulary, we can hypothesize that intertwining the two will yield positive results. In this study, results suggested there could be a positive correlation between expressive vocabulary acquisition and frequency of at-home retrieval practice. Parents reported more growth and family involvement in their child's vocabulary development. They also reported retrieval practice to give their child more opportunities to expand their language. Overall, parents had a positive experience with retrieval practice. Future research should aim to conduct a longitudinal study with a larger sample size and factor more variables in the participants.

### References

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