# Word-Learning Toy / Technology:
## Exploration of How Practice Can Inform Design

**Leshell Hatley**

COLLEGE OF INFORMATION STUDIES

## 1 Motivation

The *Achievement Gap* plagues school districts across the country. Researchers suggest this gap starts as early as kindergarten, as some children enter with a knowledge deficit of several thousand words.

## 2 Hypothesis

Word Learning Toys & Technologies designed to mimic effective practical techniques for word learning and reading can provide autonomous instruction and increase the number of words learned with and/or without parent involvement.

## 3 Research Questions

1. What effective techniques are parents using to teach words and reading to their children before they enter kindergarten?

2. How can toys and technologies leverage these techniques to provide autonomous, customized instruction and increase the amount of words learned by toddlers, with and/or without parent involvement?

## 4 Initial Exploration

• Informal (Pilot) Web-Based Survey

• 70 Respondents from different Ethnicities with varying Education and Income Levels

• Descriptive Data Analysis

## 5 Results

| •Average age of first spoken word: | 11 months |

### • When are Words Taught?

• **45%** never read to child in womb
• **57%** taught words before 6 months



### • Top 3 Effective Word Learning Techniques

1. **Words Related to Current Activity** (80%)
2. **Point & Say Words** (63%)
3. **Word Repetition** (49%)



### • TV Shows Watched the Most:



### • Books

• **97%** had home libraries before age 5 with 100+ books
• **60%** currently on or above reading level
• **Picture Books** are most popular
• Books purchased or borrowed from library **once a month**
• Parent & Child **pick books together**

### • Top 3 Effective Reading Techniques

1. Books with Word Repetition (69%)
2. Books of Interest to Child (60%)
3. Point & Say While Reading (60%)



**Most children, if not all, enjoy reading and being read to daily.**

| •Average age when first learned to read: | 4 years |

## 6 Initial Conclusion

• Toy / Technology should be designed for 6 months to 4 years of age
• Design should include featured objects and verbal repetition of object names
• Stories should be featured on a regular basis

## 7 Next Steps

• Further Analysis of Pilot Data
• Redesign & Administer Official Survey based on Analysis
• Conduct Qualitative Interviews with Parents & Children

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