

## Introduction

Careful observation and record keeping are fundamental to Montessori education. Rather than relying on lesson plans for an entire class, Montessori teachers observe the progress of early childhood students through materials of graduated difficulty (Kripalani in Kahn, 1990). They keep detailed records on individual student's progress through the curriculum, evaluate children's learning by observing and documenting their work, and effectively guide children through the individualized curriculum using detailed tracking information for each individual student (Lillard, P., 1996 and Lillard, A., 2005).

The purpose of this investigation was to assess the percentage of Montessori early childhood students who have been introduced to, have worked with, and are proficient in one or more Montessori activities supporting the attainment of select Language Common Core standards.

## Background

The **Montessori Compass Collaborative Research Initiative** was established to support much needed research on Montessori education in a wide variety of school environments across the country. The goal of the initiative is to examine Montessori student progress through the curriculum by age level.

This work is being accomplished through a collaboration with researchers from a wide range of backgrounds, including AMS, AML, and the Montessori Foundation. In addition, the project has the approval of the University of Kansas Human Subjects Committee to ensure that legal and ethical requirements have been met to protect the safety of all research participants.

Montessori Compass provides an Internet-based software application designed to enable Montessori teachers to effectively track their students' progress. The system allows teachers to track all work/lessons that have been presented, practiced, or mastered by each individual student. In addition, the system includes a comprehensive scope and sequence for the Montessori curriculum mapped to Common Core Standards. The data stored in the system provides a unique opportunity to analyze the progress of Montessori students while maintaining the anonymity and security of individual student data.

## Research Question

How well are Montessori Early Childhood students progressing in attaining select Kindergarten Common Core Standards in Language?

## Methods

### Recruitment

- Montessori Compass contacted subscribing schools by email and included project information on website
- Administrators in interested schools consented to participate by responding to a school survey

### Participants

- Selected classrooms with accurate links to kindergarten standards and consistent status updates
- Seven schools
- 245 children in 11 EC classrooms
- 117 girls and 128 boys
- 90 3-year-olds; 94 4-year-olds; and 61 5-year-olds

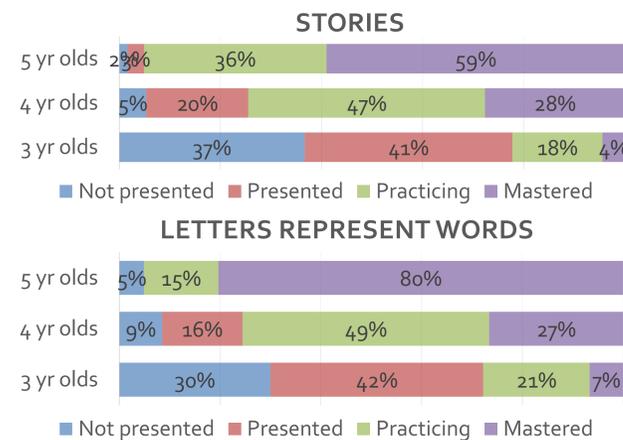
## Criteria for Standard Selection

1. One standard selected from 4 of 5 categories of standards.
2. Selected language standards have a limited number of elements with a range of 3 to 12 with the exception of Print Letters which has 25 elements.

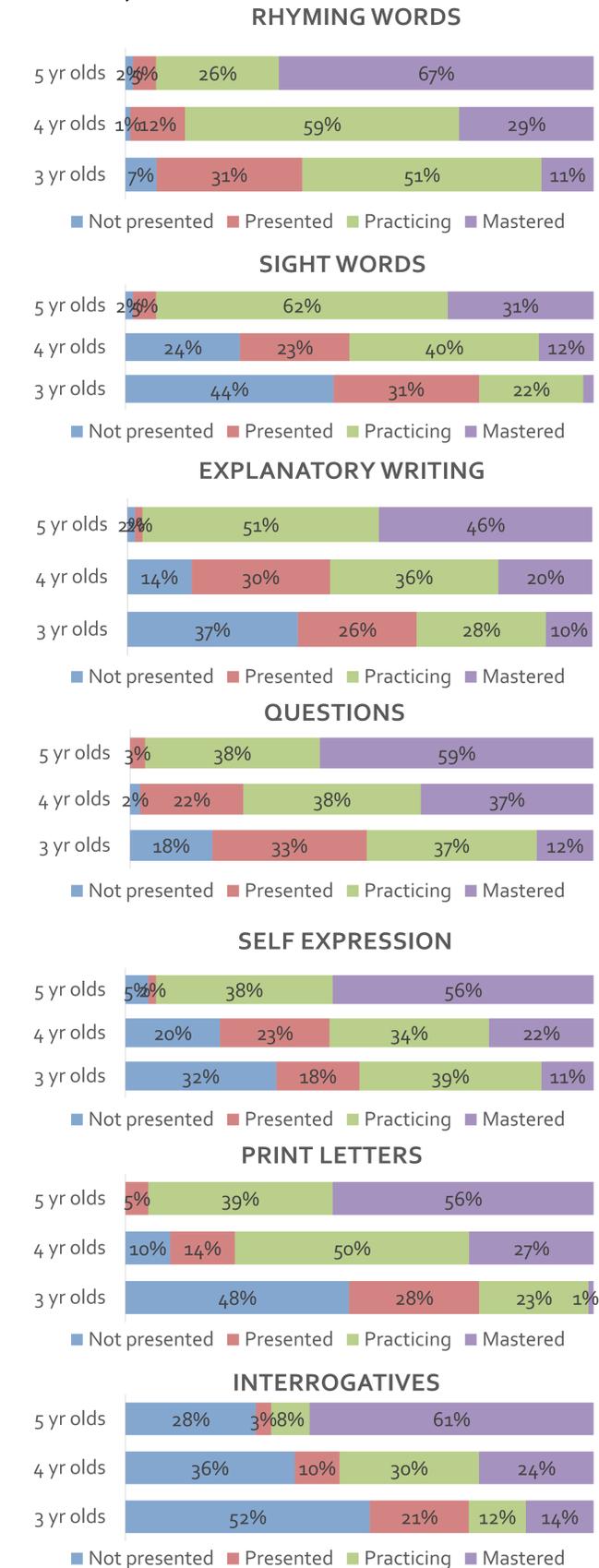
### Language Standards

Category	Topic	Standard	Elements
Literature	Stories	With prompting and support, retell familiar stories, including key details.	<ul style="list-style-type: none"> <li>▪ Story Sequencing with Pictures</li> <li>▪ Picture Book Retelling</li> <li>▪ Folk Tale Retelling</li> </ul>
Foundational Skills	Letters Represent Words	Recognize that spoken words are represented in written language by specific sequences of letters.	<ul style="list-style-type: none"> <li>▪ Letter &amp; Word Cards</li> <li>▪ Picture Stories</li> <li>▪ Word Lists</li> <li>▪ Movable Alphabet</li> </ul>
	Rhyming Words	Recognize and produce rhyming words.	<ul style="list-style-type: none"> <li>▪ Rhyming Activities</li> <li>▪ Word &amp; Sound Games</li> <li>▪ Poetry</li> <li>▪ Rhyme Cards</li> </ul>
	Sight Words	Read common high-frequency words by sight (e.g., the, of, to, you, she, my, is, do).	<ul style="list-style-type: none"> <li>▪ Puzzle Words</li> <li>▪ Beginning Reading Books</li> </ul>
Writing	Explanatory Writing	Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about & supply some information about the topic.	<ul style="list-style-type: none"> <li>▪ Communicating w/ Drawing &amp; Words</li> <li>▪ Description of a Person, Place, Object Essays</li> <li>▪ Informational Essay</li> <li>▪ Procedural Essay</li> </ul>
	Questions	Ask and answer questions in order to seek help, get information, or clarify something that is not understood.	<ul style="list-style-type: none"> <li>▪ Questioning Game</li> <li>▪ Grace &amp; Courtesy Lessons</li> </ul>
	Self Expression	Speak audibly and express thoughts, feelings, and ideas clearly.	<ul style="list-style-type: none"> <li>▪ Story Telling</li> <li>▪ Sharing News</li> <li>▪ Grace &amp; Courtesy</li> </ul>
	Print Letters	Print many upper-and lowercase letters.	<ul style="list-style-type: none"> <li>▪ Sandpaper Letters &amp; Sand Tray</li> <li>▪ Chalkboard and Sandpaper Letters</li> <li>▪ Chalkboard and Letter Families</li> </ul>
Speaking and Listening	Interrogatives	Understand and use question words (interrogatives) (e.g., who, what, where, when, why, how).	<ul style="list-style-type: none"> <li>▪ Questioning Game</li> <li>▪ Naming Objects in the Environment</li> </ul>

## Results



## Results, continued



## Conclusions

Some progression is evident across age groups for all of the language standards examined. However, averaging across all nine standards, just over half of Montessori 5-year-olds have mastered related lessons. Rhyming words is the area where a large proportion of younger children have been introduced to lessons related to the standard. Not surprisingly, the vast majority of third-year EC students have mastered the notion that Letters Represent Words. Sight Words show the lowest level of mastery by the oldest students.

Higher Mastery	Moderate to Low Mastery	Low Mastery
Letters Represent Words	Stories	Sight Words
Rhyming Words	Questions	Explanatory Writing
	Self Expression	
	Print Letters	
	Interrogatives	

## Discussion

These results may reflect that many third year Montessori ECE students have not yet mastered kindergarten standards by the middle of the school year, or they may be the result of misalignment of Montessori curricular focus with Common Core kindergarten standards. Alternatively, these results may simply represent a lack of emphasis on recordkeeping by Montessori Early Childhood teachers.

As Montessori education grows, particularly in the public sector, it is subject to external pressure to provide evidence of effectiveness based on non-Montessori standards such as Common Core. Therefore, it is critical that Montessori educators become familiar with the standards, remain disciplined in keeping records of student progress and understand the linkages between Montessori lessons and standards used to gauge progress across diverse educational settings.

## Future Directions

This is the second analysis of these data that have the potential to address a range of questions that can be examined through a variety of analytical techniques. In addition to expanding into other age groups and analyzing demographic data (gender, SES, urban vs. rural, public vs. private, etc.), the team hopes to incorporate information about classroom practices and student academic outcome for a more complete picture of what is actually occurring in Montessori classrooms today.

## References

- Kripalani, L. A. (1990). Towards a Montessori evaluation approach. In David Kahn (Ed.), *Implementing Montessori education in the public sector*. Cleveland, OH: North American Montessori Teacher's Association (484-489).
- Lillard, A. S. (2005). *Montessori: The science behind the genius*. New York: Oxford University Press.
- Lillard, P. P. (1996). *Montessori today: A comprehensive approach to education from birth to adulthood*. New York: Schocken Books

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