

# University of Michigan Pathways to Literacy Study

Preliminary Study Findings—Spring 2012

## Special points of interest:

- Why we study literacy
- What we hope to accomplish with the data collected
- Information about study tasks and classroom observations
- Initial findings from student projects
- More about the study team
- Future goals and presentations of this research

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## The Importance of Studying Literacy

Literacy is a fundamental skill enabling educational, social, and occupational success. Literacy instruction is particularly important in early elementary school, not only because it is a basic educational tool, but also because reading achievement before third grade strongly predicts future literacy skills.

Our lab at the University of Michigan has studied reading instruction and children's reading ability for over a decade. We have made many contributions to the field in that time, including developing a widely used classroom observation tool and establishing a successful intervention program for low-income schools.

One of the main things that our research has demonstrated is the importance of individualizing instruction for each student within a classroom,

based on that student's current ability level. In general, students with fewer reading skills benefit from the teachers leading them through instruction, and also learn more when their classroom instruction focuses on basic skills such as letter sounds and sentence properties. Higher skilled students benefit from working independently and spending more time reading or discussing comprehension questions.

Further research within the lab has also identified the importance of changing instruction over the school year. Teachers who provide progressively more independent, comprehension and reading activities over the school year have students who make bigger achievement gains.

As we continue our research, we hope to improve the existing intervention and help teachers to successfully

tailor instruction to their students' needs. Through the current study, we hope to not only further the field of literacy research, but also to make suggestions and provide as much new information as possible to teachers and principals.

This newsletter contains some additional information about the study that was conducted this year, in addition to explaining some of the results we have found so far. We are still in the process of collecting background questionnaires and coding the observations that we conducted in the spring, but we hope to have final results later in the summer and early fall!



## Goals for this Year's Study

In addition to confirming prior study results, this year's study has two main goals.

First, in this year's study we collected information about the books, worksheets, and examples that teachers and students used during classroom activities. We hope to consider this important part of

classroom instruction as a way that teachers may be further individualizing instruction for students.

Secondly, we also collected information about the classroom environment, including the materials available to students (e.g., book areas, examples of student work) as

well as the relationships between teachers and students. We are interested in how important classroom environment is when compared to the information we have collected about specific classroom instruction and activities.



## The Literacy and Cognitive Tasks We Use

At the beginning of our study we visited each classroom in order to individually assess each student's ability. We used four sections from the a standardized test of cognitive ability.

The first test dealt with letter and word recognition. We asked students to identify individual letters, pick simple words out of a list, and read as far down on a list of increasingly difficult words as they could. Some children read only the words that they recognized while other successfully sounded out complex words high above their read-

ing level.

The next test measured reading comprehension. We first asked students to read a simple phrase and then choose the matching picture. Then students were asked to read a sentence and fill in a missing word. Some of these sentences were short with matching pictures while others were lengthy and complex.

The next test was a measure of vocabulary. We showed each student pages of pictures and asked them to name the object displayed. These ranged in difficulty from

household objects to historical monuments.

The final test was used to assess the child's self regulation. We gave them a sheet of paper showing rows of balls, dogs, and cups. We gave them a pencil but asked them to only circle the objects when there was a ball followed by a dog. Some managed this task easily while others circled the objects regardless of their order.

These tests were repeated at the end of the study in order to measure the students' growth over the year.

*"The more you read, the more things you will know. The more that you learn, the more places you'll go!"*

*-Dr. Seuss*

## Classroom Observations

Between the two assessment periods we came into each classroom twice to observe. Our primary goal in watching classroom activities was to measure two things. We recorded the amount of time that children spent regulating their own activities, such as individually reading or writing, and the amount of time that the teacher was directly regulating the activity, such as reading to the class. We also looked at the amount of time that students spent in "code

focused activities," which involve spelling, pronunciation and punctuation, and the amount of time in "meaning focused activities" such as reading comprehension and discussing what a particular word means.

We also recorded the books that students were observed reading and collected copies of worksheets. Back in the lab, we looked at the difficulty of both the worksheets and the books. Using a count of how

many words were on the worksheet or in the book was our first step. We then used a word frequency guide to determine the difficulty of each word found in the worksheets and books.

We are hoping to link up both the time and activities we recorded, as well as the difficulty of the worksheets and books used, to help us link what happens in the classroom to students' developing literacy skills.



## Questionnaires and Skill Ratings

We sent out several different types of questionnaires during the course of our study, two of which dealt with the background of the child and teacher, and one that asked teachers to rate the students' abilities.

The background questionnaire for our participating teachers helped us to understand the level of education that each had acquired, the profession-

al development undergone to continue improving teaching and learning, as well as their amount of experience in the field.

The questionnaires sent home to the participating children's parents helped us to understand the background that each is coming from and how that might be linked to student abilities. Many studies have shown connections between

things such as the parents' education and native language and the child's reading abilities when entering school. We also asked how much children are read to at home, which plays a large role in encouraging literacy.

We also asked each teacher to rate each student's abilities, which we hope will help us to interpret the things we observed within the classrooms.

## Links Between Teacher Ratings and Instruction

One of the important aspects of our study was to determine how teachers judged their students individual abilities, and whether or not these were accurate assessments. Teachers may recall filling out a questionnaire for each child asking you to rate their knowledge of letters, reading abilities, self regulation, and other skills.

Using the scores from the tests that we administered we created standardized ratings of child's ability in letter and word recognition, comprehension of small reading passages, and vocabulary. Our ob-

servations of the students' abilities closely matched their teacher's assessments. In other words, the teachers in our study knew and understood each child's weaknesses and strengths.

We did not, however, find a link between the teachers' ratings of their students' abilities and the kind of instruction that the children took part in. Lower ability children often benefit from a focus on basic skills including phonics, while higher achieving students fair better when focusing on reading comprehension. According to the observations that we

conducted in each classroom, however, children of all abilities saw the same kind of instruction.

The curriculum being used, the size of the class, and other factors often prevent teachers from changing their teaching to suit each child's unique needs. We were pleased to find that teachers could recognize their students' skills, which is an important step toward helping a child grow and learn. As our research goes forward, we hope to learn more about the effects of the instruction we saw on children's reading growth.



## The Effects of Class Size on Instruction

Several previous studies have found that the number of students in a class can affect the way in which teachers engage their students and the amount of growth in students' achievement. Small classes often allow from greater individualization, so that lower ability students receive the teacher-supported code-based instruction that they need to grow in reading, while higher level students spend more time honing their reading comprehension skills on their own.

The classrooms that we studied were all similarly sized, ranging from 18 to 26 students. Most classrooms either had about 18-21 students, or 24-26 students. Though the similarity in class sizes prevented us from seeing significant results in this area, we did see a slight tendency for the teachers in smaller classes to provide students with more individualized instruction than teachers in larger classrooms, who leaned toward a more uniform approach.

Unfortunately class size cannot easily be adjusted despite the benefits that smaller classes may have. We observed many instances in every classroom of teachers and aids meeting with small groups of students, however, which is an excellent way of minimizing the number of children being taught at one time and increasing the chance for each to receive individualized instruction.

*"One looks back with appreciation to the brilliant teachers, but with gratitude to those who touched our human feelings. The curriculum is so much necessary raw material, but warmth is the vital element for the growing plant and for the soul of the child."*  
-Carl Jung

## Diverse Classrooms and Productivity

To further explore classroom makeup, we identified the skill range of each child in our study using standardized percentile ranks from our tests. Some classrooms had a range of abilities, while others were more homogenous. In this particular sample the homogenous classrooms were either made up of mostly high achieving or medium achieving students; we saw no uniformly low achieving classes.

We then noted how much time

we spent in the classroom conducting an observation, and compared that to the amount of time each child spent engaged in instruction or learning activities. We termed this ratio "productivity".

When looking at the productivity of each classroom based on whether it was diverse or homogenous, we found that homogenous classrooms saw greater productivity than those with a greater range of

abilities.

Most studies find that diverse classrooms are more productive and more conducive to learning, so these results are interesting and need to be further explored. Our results may be skewed by the lack of uniformly low achieving classes in our study. We hope to link the productivity and amount of diversity in student skills with student achievement in order to look into this finding more closely.





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### Thank you for your help!

Without the incredible support we have received from all of the local school districts, principals, teachers, families and students who have participated this year, this study would not have been possible. Thank you for contributing your time, energy, and kindness of the past year. We look forward to continuing to send you updates about the findings from this study, as well as future publications. We are so lucky to have been able to conduct this research with such a wonderful group of people. Thank you!!

- The Pathways Study Team

### The Study Team!

Our study was conducted by an amazing team of undergraduate researchers, led by Dr. Frederick Morrison, a professor of Psychology and Education, and Stephanie Guthrie, a doctoral graduate student in Psychology and Education.

Eleven undergraduate women helped out with data collection each morning in the schools. Most were seniors majoring in Psychology at the University of Michigan, and they have gone on to join Teach for America, enroll in graduate school in

school psychology, counseling, family law, and social work.

Two of the students who worked with the project this year also wrote honors theses using some of the information collected over the school year. One of these students helped to develop several of the measures used to collect information about students and instruction, and her work on this thesis was awarded Highest Honors by the department faculty.

As we continue to process and code all of the data that was collected this year from students, families, teachers, and classrooms, we are also planning to present our findings at a variety of professional conferences and symposia. A couple of the past and upcoming presentations are listed below!

- Newberg, A., Guthrie, S., & Morrison, F. (April, 2012). *Connections between first-grade teachers' judgments of children's literacy skills and instructional practices*. Poster presented at the annual Department of Psychology Research Forum, Ann Arbor, MI.

- Guthrie, S. & Morrison, F. (July, 2012). *Effective reading instruction in first grade: Teachers' use of individualized instruction*. Poster to be presented at the annual meeting of the Society for the Scientific Study of Reading, Montreal, Quebec, Canada.

- Guthrie, S. & Morrison, F. (April, 2013). *Linking worksheet and book difficulty with reading skill growth in first grade*. Poster to be presented at the biannual meeting of the Society for Research in Child Development, Seattle, Washington.

*"Teaching reading IS rocket science."*

- Louisa Moats

*"Oh, magic hour, when a child first knows she can read printed words!"*

- Betty Smith

