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ANNSLEY FRAZIER THORNTON SCHOOL OF EDUCATION

The Magic Ladder: An Initial Evaluation of Efficacy
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Executive Summary

Background

The Magic Ladder (ML) is an innovative instructional alternative to traditional reading instruction that is a *fundamentally different* method for facilitating the process of learning to read. By leveraging the power of technology, ML is able to assess the student's existing speaking and reading vocabulary, as well as their personal interests, to create a reading instructional system uniquely customized for each student. To understand the extent to which ML enables the learning of reading, an initial evaluation was conducted to determine if a basis exists to suggest it is effective at improving initial reading acquisition. The study was conducted by Dr. David D. Paige, a literacy researcher at Bellarmine University with overall results finding that students in the ML group made greater reading gains than those in the comparison group.

Participants

The study was conducted at Price, Rangeland, Shelby, and Gilmore Lane Elementary Schools in the Jefferson County Public Schools district in Louisville, Kentucky. All four schools serve students who generally come from a background of poverty the result of which, is that as a group they tend to struggle with learning to read. A total of 32 third-grade students attending one of the four above schools, and whose teachers were participating in the JCPS/Bellarmine Literacy Project, a district initiative designed to assist teachers in improving their literacy teaching skills, were randomly selected to receive ML instruction. Another 32 third-grade students from across all Literacy Project schools were randomly selected to comprise a comparison group.

Study Design

This evaluation used a classic randomized-controlled study where students were randomly selected, then assigned to one of two experimental groups who received either ML instruction or "core" instruction from their teacher participating in the JCPS/Bellarmine Literacy Project. This study design is the "gold-standard" for making causal statements regarding ML because it allows for the isolation of the treatment effects and eliminates alternate explanations of the results.

Study Implementation

All students were assessed twice, once at the beginning of the study and again at the end, on three measures of reading achievement. Students received either ML or core instruction for approximately 10 weeks and all ML instruction was generally delivered during the student's reading instruction. Students in the ML group received 3, 45-minute instructional sessions (about 22 hours of instruction) where they worked on an individual basis with a "learning steward" who supervised the student's Magic Ladder instruction.

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Theory of Reading

This study is guided by the notion that students who better understand how the sounds of language match to individual letters and letter combinations, the more quickly they learn how to unlock words from print. This virtuous cycle then advantages the student in their effort to become a fluent, or smooth reader and ultimately enables them to better understand what they read.

Assessments

Gains made by the ML and core instruction groups were statistically compared on three measures of reading: 1) pseudo-word reading, e.g., "fake" words which are decoded like real words (ip, pim, nup, vast, etc.) 2) sight-word reading, and 3) passage reading, e.g., the ability to accurately read aloud a grade-level story.

Results

Pseudo-Word Reading. While students in both groups made gains, those in the Magic Ladder group progressed further; ($F(1,62) = 19.62, p < .001, d = 1.13$ [a very large effect of 14.0 percentile points])
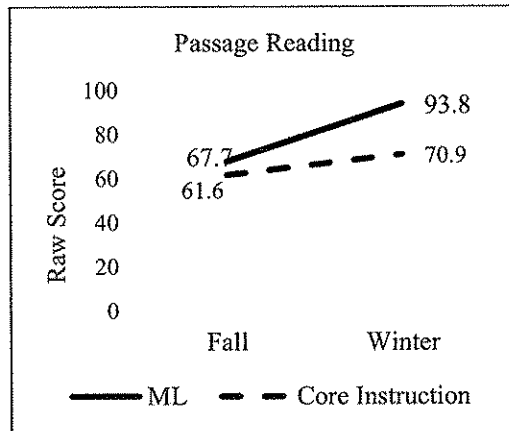

Pseudo-Word Decoding
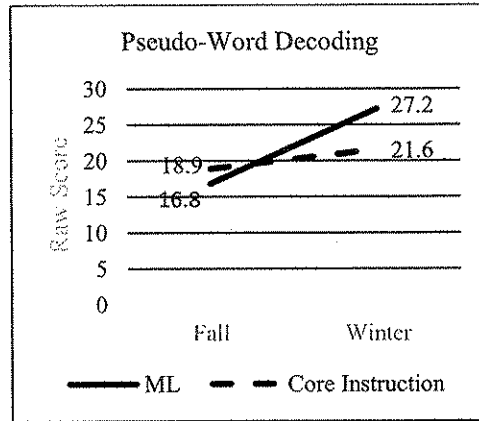
Sight-Word Reading. Both groups made gains, but those in the Magic Ladder group grew more; ($F(1,62) = 6.17, p = .016, d = .63$ [moderate effect of 10 percentile points]).

Sight Word Reading
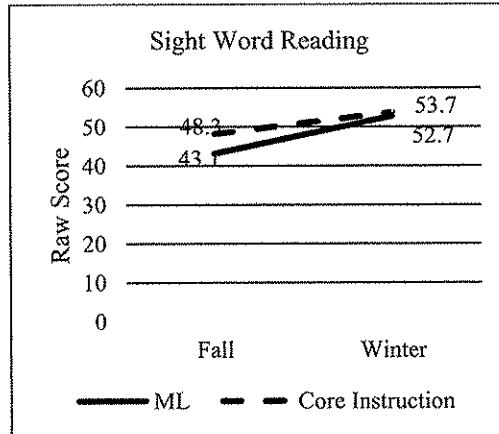
Note that while the ML group began slightly lower they achieved greater growth than the comparison group.

Passage Reading. The Magic Ladder group outgained the core instructional group; ($F(1,62) = 8.29, p = .005, d = .73$ [large effect of 12.5 percentile points])

Passage Reading

Raw Score axis: 100, 80, 60, 40, 20, 0

93.8
67.7
70.9
61.6

Fall   Winter

—— ML   — — Core Instruction

Narrative Comments

Ms. Niles, Principal:
"I met with the third grade team last week and they shared their successes and praise for the significant gains. *Looking forward to our continued partnership!*"

Volunteer Stewards:
"It was amazing to see how quickly Maliyah's reading improved. As a retired teacher, I struggled for years trying to figure out effective ways to individualize instruction. This innovative program does that for reading better than any I've ever seen. This program gives "at risk" children the skills for success.

Waynesha LOVED learning the Alpha and Common sounds, they made sense to her. She used the sounds to help her with new words. *It seemed like all of a sudden she just took off with reading.*
Over and over with the Magic Ladder, I have seen children flip the relationship that they have with reading; where once they were reluctant to participate, they have changed over to exclaiming comments like, *"I love to read!"*

Conclusions

1. Statistically significant evidence exists to conclude that students receiving Magic Ladder instruction improved in their ability to read pseudo- and real words, as well as in their ability to read connected text, beyond that of the core instruction group.
2. While the duration of treatment was approximately 10 weeks, results reveal generally large effects, suggesting the efficacy of the Magic Ladder protocol.
3. Although it is possible that students would improve due to maturation and exposure to the educational environment, this explanation is negated by inclusion of the comparison group.
4. It is significant to note that ML instruction typically occurred during the time that students would have received classroom reading instruction. This one-for-one dosing swap suggests that the "replacement" ML instruction was significantly more effective than that received in the classroom by those students in the core instruction group.

David D. Paige, Ed.D.