



For Immediate Release

Study Results Challenge Commonly Held Reading Instruction Beliefs

'Access Code' and Varied Practice Model help students better learn crucial early reading skills, researchers find

IOWA CITY, Iowa (Dec. 18, 2012) – A study that will be published in the January 2013 edition of the *Developmental Psychology* journal shows greater variation is critical to students' reading development. This is a deviation from long-held beliefs about the effectiveness of the traditional instructional approach, which is based on the similarity of words and letters. Researchers used a version of [Access Code](#), the first program to apply the Varied Practice Model to how students learn reading skills, to conduct the experiment. Access Code was created by [Foundations in Learning](#), developer of applications based on the science of how students learn.

"The Varied Practice Model overcomes the well-established weaknesses of traditional phonics instruction," said Foundations in Learning Co-Founder Jerry Zimmermann, Ph.D. "The Varied Practice Model is known to enhance the retention, generalization and application of skills, which is why we applied the model when developing Access Code."

The study tested the underlying principle of the Varied Practice Model, which has been successfully used in domains such as speech, sports, mathematics, art and music. Access Code incorporates the Varied Practice Model unlike any other reading curriculum. For this reason, researchers at the University of Iowa chose to implement a portion of the web-based application for purposes of the study.

Results surprised even the research team.

The research demonstrated the power of systematic variation in learning to read. Students experiencing more variation in words showed better learning when tested on the words and tasks they encountered in training. More importantly, variation helped students generalize these fresh skills to new words and new tasks.

"Variability was good for the low-performing students, it was good for the high-performing students. It was good for the boys, it was good for the girls. It was good for the words, it was good for the non-words," said University of Iowa doctoral student Keith Apfelbaum.

Apfelbaum and associate professors Bob McMurray and Eliot Hazeltine of the Department of Psychology in the University of Iowa studied 224 first-grade students in the West Des Moines, Iowa, school system. In the experiment, some students learned words organized by traditional phonics instruction, which uses similar word sets to help illustrate the rules and, presumably, simplify the unit for learners. A second group of students used the curriculum of Access Code, which organizes sets of words that are more varied, appearing to make the lesson more difficult.

After three-to-four days of training on phonics skills such as spelling and matching letters, the students from both groups were tested to see if they could read words that they had never seen before, read novel non-words and apply their newly learned skills to tasks they hadn't done before.

“We were expecting a very subtle effect, maybe similar words would help you learn the words you were trained on but maybe not generalize as well, or maybe similar words would help you learn the more difficult rules but you might want variability for the easier ones, but in no case was similarity more helpful than variability,” McMurray said. “This suggests a powerful principle of learning. While we’ve known about this in a variety of laboratory tasks for a while, this study shows for the first time that this principle also applies to early reading skills.”

Developmental Psychology publishes articles that advance knowledge and theory about development across the life span. To access the study, visit www.apa.org/journals/dev.

For more information about Access Code and the Varied Practice Model, visit www.foundations-learning.com.

About Foundations in Learning

Foundations in Learning develops applications, driven by effective learning principles, to optimize student learning. The organization’s flagship application, Access Code, has proved to enhance fluency and comprehension of students with varying abilities by improving fundamental skills. The application draws on years of research from the science of learning. The web-based delivery of Access Code allows it to be tailored to each learner and makes it easy to implement. For more information, phone 888-701-3009, or visit www.foundations-learning.com.

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For more information, contact:

–John Sims, Foundations in Learning, 319.248.1269 ext. 102, jsims@foundations-learning.com

–Saul Hafenbredl, C. Blohm & Associates, 608.216.7300 ext. 25, saul@cblohm.com