

## IRA OUTSTANDING DISSERTATION AWARD FOR 2007

THE INTERNATIONAL READING ASSOCIATION'S OUTSTANDING DISSERTATION AWARD, which has been given yearly since 1964, recognizes exceptional contributions made by doctoral students in reading or related fields. Candidates may be self-nominated or nominated by their dissertation advisors. Each submits a monograph based on the dissertation, which must have been completed during the previous academic year. These monographs undergo rigorous review by the Association's Subcommittee on the Outstanding Dissertation Award. The winner and other finalists are recognized at IRA's annual convention in April or May. The award also carries with it a monetary prize made possible by a donation from Scott Foresman, a U.S. educational publishing house.

The following summary of the 2007 award-winning dissertation has been provided for *RRQ* by its author.

# The effects of multisensory vowel instruction during word study for third-grade students

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**F**or many students, learning to read is a monumental task. Nowhere is this problem more evident than in urban school districts in the United States, where a high percentage of children struggle and fail to achieve success. According to the National Assessment of Educational Progress, almost half of the children living in urban areas in the United States cannot read at a basic level (National Center for Education Statistics, 2002).

The author works in an urban public school district in a large midwestern metropolitan area. The percentages of minority and poor children in this district are substantially greater than both national and state statistical averages: 75% of the district's students receive free or reduced-cost meals in the school lunch program; 78% are minority; 15.1% are classified as having limited English proficiency (Kansas City, Kansas, Public Schools [KCKPS], 2003). Although the children

served by the district reside in homes “containing ample cultural and cognitive resources” (Moll, Amanti, Neff, & González, 1992, p. 134), the richness of their lives appears to have not yet included access to the language and life experiences expected in the public schools. Rapid acquisition of reading proficiency upon entry to school may thus be more difficult. A review of (then current) district data bears this out: In most years, by the end of third grade fewer than half of the children were reading at a satisfactory level on local measures of reading achievement. A substantial decrease in achievement from the end of second grade to the end of third grade was evident, although reading achievement was increasing in the district as a whole (KCKPS, 2003). Yet there were still far too many children failing to succeed at the highest levels at the close of this critical window of opportunity.

To address this issue, the author analyzed reading records and written work of primary students attending several district elementary schools over the course of one school year. From that analysis, it appeared that an obstacle to reading success for many children in the third grade was automaticity in the application of the alphabetic principle, specifically vowels. There was a widespread need for intervention, so whole-class intervention in intact classrooms was deemed appropriate.

A review of the literature revealed that common practice in reading research appears to have a focus other than whole-class interventions with real classrooms, bypassing third grade in most instances. This is evident from the meta-analysis conducted by the National Reading Panel (National Institute of Child Health and Human Development, 2000) and from various recent studies (e.g., McCandliss, Beck, Sandak, & Perfetti, 2003; Pullen, 2000; Rashotte, MacPhee, & Torgesen, 2001; Sunseth & Bowers, 2002).

In contrast with recent research, the author developed a whole-class intervention consisting of 60 multisensory word-study lessons for third grade. Each lesson takes approximately 20 minutes, for a total of 20 hours of instruction. The lessons follow a progression from children’s oral language, to phonological and phonemic awareness, to phonics, to specific vowel-spelling patterns. Many of the multisensory components of the lessons build on use of Animated Literacy (AL; Stone, 2002), a district-recommended program used with success in kindergarten (and, to a limited degree, in first and second grade) to teach the alphabetic principle, providing sufficient exposure so that children unfamiliar with AL could learn to utilize the vowel aspects of the

program within a short time. The multisensory features of the word-study lessons are both receptive and productive, with auditory, visual, and kinesthetic components. The work of numerous researchers supports such multisensory instruction (e.g., Ehri, Deffner, & Wilce, 1984; Marzano, Pickering, & Pollock, 2001).

Each lesson or activity was developed or selected for a specific purpose, intended to support increasing students’ application of their knowledge of regularly occurring vowel phonological–orthographic representations; with increased application comes increased automaticity. Although only a few letters represent the multitude of vowel phonemes in the English language, it is impossible for every instance of vowel graphophonology to be directly taught. Instead, the intervention’s systematic focus on vowels allowed the student to learn alternative graphophonemic possibilities to increase flexibility in applying their repertoire of vowel knowledge; more rapid access to these alternative possibilities should eventually allow a shift of cognitive focus from code-based to meaning-based skills. And, although the primary focus of the intervention was on the numerous combinations of letters used to represent the vowel sounds, incidental learning of additional word structures was anticipated as a by-product of the study of vowels.

A causal–comparative research plan was designed. Study subjects were 450 third-grade students in 25 intact classrooms throughout the district, demographically representative of the district as a whole. Experimental participants were children in the classrooms of teachers who selected word study as their professional development focus for the year from a menu of options offered by the district. Comparison classrooms were then selected on the basis of agreement of principals and classroom teachers to allow administration of assessments. The experimental and comparison schools were matched on the basis of socioeconomic status and ethnicity, as well as school size and reading-achievement data.

To ensure fidelity of instructional delivery, explanation of and practice with the intervention lessons occurred with the participating teachers during a district professional development session prior to the start of the intervention. Teachers were also trained on assessment administration. Lesson plans and program materials were provided for teacher and student participants, a regular practice in this district during the delivery of professional development. Follow-up training was held approximately one month later. A final additional follow-up session occurred after the majority of the 60 lessons had been taught.

Measures for each of the dependent variables were selected for their ready availability to the classroom teacher. The augmented version of the Names Test (Cunningham, 2000; Duffelmeyer & Black, 1996; Duffelmeyer, Kruse, Merkley, & Fyfe, 1994) was selected as a test of the application of the alphabetic principle in a decoding task. The Names Test was administered much like a reading record, with results analyzed by phonic features. The Elementary Spelling Inventory 1 (ESI; Bear, Invernizzi, Templeton, & Johnston, 2004) measured phonological awareness and the alphabetic principle through the ability to encode phonemes with orthographic appropriateness. The Dynamic Indicators of Basic Early Literacy Skills (6th ed.) Oral Reading Fluency assessment (DIBELS ORF; Good & Kaminski, 2002) was used to test automaticity in use of the alphabetic principle within connected text. And, to test comprehension, the Scholastic Reading Inventory Interactive (SRI; 2000) was administered. The ESI, DIBELS ORF, and SRI were administered and analyzed following their author-recommended guidelines.

Site-based personnel, mainly teachers, collected data for participating students. Assessments for the comparison students were administered by a trained team of retired teachers and in keeping with district practices.

Following data collection, the dependent variables were each analyzed, aggregated by teacher, with the resultant data analyzed by treatment (experimental or comparison) with each teacher's class as a case. Both repeated measures analysis of variance and dependent samples *t* tests were conducted, and effect sizes were calculated. For three of the dependent variables, the Names Test, ESI, and DIBELS ORF, there was a meaningful statistically significant difference between the treatment groups. Results suggest that the effects of the experimental treatment were not simply a function of a few teachers. However, for the fourth measure, the SRI, the results, though positive, were not statistically significant, suggesting that when both code- and meaning-based skills must be simultaneously utilized for the highly complex task of reading comprehension, participation in the multisensory word-study program did not have a substantial impact. Data support the effectiveness of the multisensory word-study program as a whole-class intervention in increasing decoding ability, in developing the ability to correctly encode common phoneme-grapheme spelling patterns, and in increasing automaticity in application of the alphabetic principle through word-reading speed while reading in connected text. However, effects of comprehen-

sion instruction in the classroom appear to outweigh the effects of code-based instruction.

On the practical side, the study design was based on the reality of classrooms in the subject district. Instructional effects operate within the context of a given population, both students and teachers: The basic unit of instruction is the classroom. Teachers implemented the program as they interpreted the written materials provided. So, for practical purposes, the results of this research inform classroom instruction by providing insight on what can happen with student literacy achievement when a highly focused, systematic model of phonological awareness training, in conjunction with phonics instruction, is put into place. Because the population from which the sample was selected was necessarily limited to the accessible population, generalizability is limited regarding whole-class instructional methodologies to increase automaticity in application of the alphabetic principle. The research results may be generalizable to intact urban classrooms with similar demographics—the current reality of today's world in hundreds of school districts across the United States.

At this time, in the social context of the lives of the children of this district, the federal government has determined through statistical information that the majority are “at risk” due to poverty and ethnicity. The research results suggest that despite this “at riskness,” children can succeed with appropriate, focused instruction.

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