Summary of EPACC decade of research

Sister Mary Karen Oudeans, Ph.D.

Five studies across a decade

Explicit Phonemic Alphabetic Connections Curriculum (EPACC) has been validated both for classroom-wide instruction, and as an effective Tier 1 and Tier 2 RTI intervention for teaching critical beginning reading skills as a complement to the core reading curriculum. The intervention was determined to be effective in 5 separate studies in 12 different classrooms across a decade of research effort.

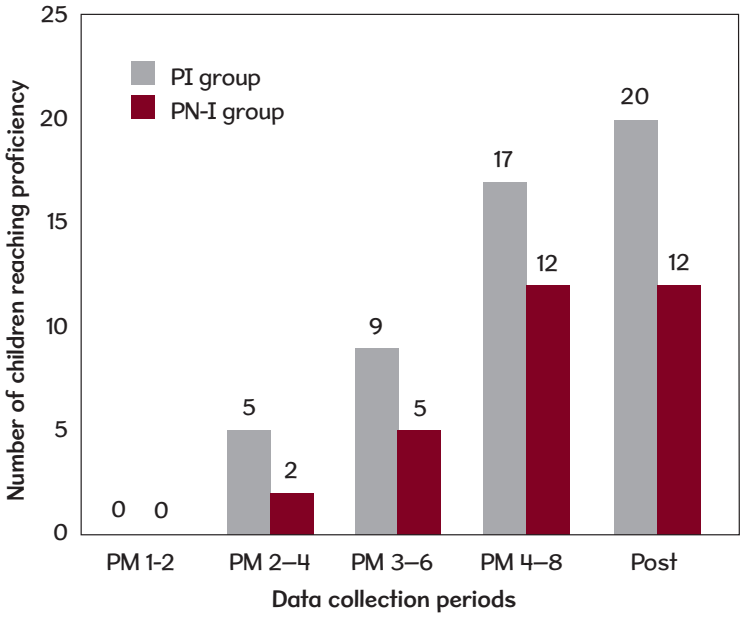
Study 1

Study 1 used an EPACC prototype. The study systematically and explicitly linked and integrated the alphabetic skills of letter-sound correspondences with the phonological skills of phonemic blending and segmenting during instruction involving print (i.e., letters). The result was higher word reading and phonological awareness performance for kindergartners with low phonemic awareness.

Study 1 summary of results

The number of children who reached proficiency by posttest was significantly higher for the parallel integrated (PI) EPACC group than for the parallel non-integrated (PN-I) control group (see Figure 1).

FIGURE 1
Comparison of Phonemic Segmentation Fluency Between Groups



Note. PM 1–2 = Progress monitoring #1 (Week 2), PM 2–4 = Progress monitoring #2 (Week 4), PM 3–6 = Progress monitoring #3 (Week 6), PM 4–8 = Progress monitoring #4 (Week 8), Post = Posttest.

Effects of instructional sequence on phonological awareness. It was a benefit for kindergarten children with low phonemic awareness to be in the PI sequence (EPACC). The PI sequence was effective in closing the gap in phonemic segmentation between children with low segmentation skills and children with adequate skills, by posttest.

More children in the PI sequence reached proficiency on the Phonemic Segmentation Fluency (PSF) measure than in the PN-I sequence at posttest. Children who are proficient on PSF in the winter of kindergarten (i.e., can produce 35–45 phoneme segments per minute) have a better chance of becoming successful readers in first grade.

Effects of instructional sequence on word reading performance. The PI and PN-I sequences were equally effective in teaching children the letter names and sounds in isolation. However, the PI sequence was reliably more effective in helping children apply their letter-sound knowledge to word reading regardless of initial phonemic segmentation skills. Children in the PI sequence read significantly more words per minute at posttest than children in the PN-I sequences.

The results of this study suggest that the PI sequence (EPACC) provided two important advantages to kindergarten children as they started to make sense of the alphabetic writing system when learning to read. First, the PI sequence made explicit those processes that are essential to beginning reading acquisition but that are not typically attended to by kindergarten children with low phonological awareness—the connections between letter-sounds and phonemic blending and segmenting. Second, the PI sequence made explicit the implicit strategies that good readers use to recognize sounds in words, relate sounds to letters, and blend sounds into words.

Studies 2–4

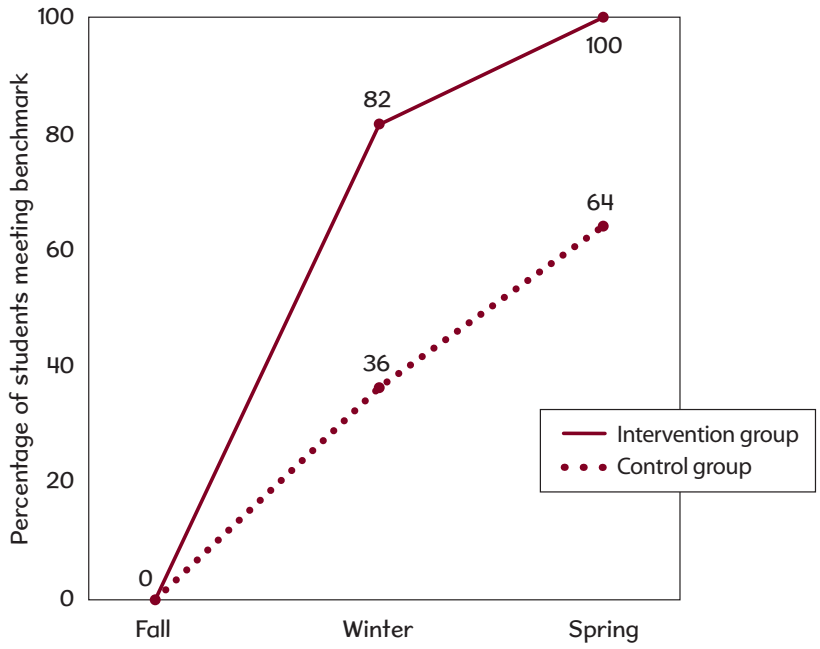
Studies 2–4 used EPACC as a Tier I RTI framework with intact kindergarten classrooms and teachers with 10–17 students. In all three studies, EPACC was used to complement the core kindergarten curriculum, which was teacher-designed instruction grounded in developmentally appropriate practice. These studies compared two programs that taught beginning reading skills in kindergarten. EPACC, taught in addition to the core kindergarten curriculum (CKC) as a Tier 1 intervention, was compared with the CKC alone to determine which program resulted in higher performance in word reading and phonological awareness skills.

Study 2 results

Winter benchmark—mid PSF. At winter benchmark, PSF results revealed significant differences between groups. Even though the significant differences in PSF at pretest favored the control group, the students in the intervention group performed significantly higher on PSF in mid-January. The expected criterion of performance range for PSF is 35–45 phoneme segments per minute by the end of kindergarten. However, 82 percent of the students in the intervention group met the end of kindergarten criterion for PSF by mid-January, compared with 36 percent of the students in the control group (see Figure 2).

Spring benchmark—posttest PSF. At spring benchmark, statistically significant differences were demonstrated by the intervention group on PSF. Spring data show that 100 percent of the students in the intervention group had scores on PSF within the expected criterion of performance range for the end of kindergarten, compared with 64 percent of students in the control group (see Figure 2). Studies 3 and 4 demonstrated consistent results.

FIGURE 2
Study 2: PSF Percent of Students Meeting Benchmark



Study 2 summary of results

EPACC resulted in higher performance in word reading and phonological awareness skills than using the core kindergarten curriculum alone to teach critical beginning reading skills. EPACC made the connections between print and the sounds of spoken language explicit, helping students to break the code in an alphabetic writing system and acquire beginning word reading skills.

Study 5

Study 5 used EPACC as a Tier 2 RTI framework with an intact kindergarten classroom. Tier 2 RTI intervention was conducted with five students. The classroom teacher taught EPACC approximately 15 minutes per day, 4 times per week from mid-September through the end of February, when student assessments indicated that students could return to core curriculum instruction only or move into another Tier 2 intervention group.

Study 5 summary of results

The results of this study indicate that two of the three students receiving EPACC in a Tier 2 intervention met end-of-kindergarten benchmark in February (35–45 phoneme segments per minute), and all three students receiving instruction in EPACC met benchmark by end of kindergarten. Posttest (June) scores on PSF show that the students maintained the phonemic segmentation skills even after they returned to Tier I-only instruction in the core kindergarten curriculum.

EPACC implications for practice from a decade of research

It is critical for kindergarten reading instruction to make explicit those processes that are essential to beginning reading—the connections between print and the sounds of spoken language. The greater effectiveness of the EPACC sequence in strengthening the word reading ability of children with low phonological awareness skills suggests that **how** we teach the two component skills of letter-sounds and phonological blending and segmenting is as important to children's progress in becoming readers as **what** we teach. EPACC teaches the two skills in a parallel integrated approach. As a result, students taught using EPACC achieve higher scores on phonemic segmentation fluency and have a greater chance of becoming successful readers in a core reading program.