Early Literacy Skill Development Provides the Key to Success for Preschoolers at Risk for School Failure

Rebecca J. Russell-Brinks, Education and Child Development Program Director, Grand Rapids Community College, Michigan

Abstract
Literacy development in early childhood is a key factor in achieving success in school. The areas of oral language, phonological awareness, written expression, and alphabet knowledge are widely recognized as critical components. This paper details the results of year three of the 2008 Early Reading First grant, Early Accent on Reading and Learning for Young Children (EARLY). We asked whether the literacy skills of preschoolers were impacted after increasing preschool educators’ knowledge of and skill in using Scientifically Based Reading Research (SBRR) literacy practices. The Classroom Literacy Enrichment Model (CLEM), a play-based framework grounded in SBRR, was used to infuse literacy into all aspects of the classroom and child assessment was a common classroom practice. Professional development activities included coursework, cohort workshops, and site-based coaching. The project involved a treatment group of 176 four-year-olds in 11 classrooms and a control group of 6 classrooms from a demographically similar neighboring school district. All children were in a state funded program for four-year-olds deemed at-risk for school failure. Pre- and post-assessments (PPVT 4, PALS and PreLAS) were administered and compared between groups. Although EARLY children scored at a lower level initially, they outperformed the comparison group in most areas. For example, on the PALS they grew at 2.5x the rate of the comparison group. Using the PALS Readiness Summary parameters this reduced the number of students designated as at-risk for school failure from 93% in the fall to 19% in the following spring. These results highlight the importance of effective teacher education and professional development focused on utilizing SBRR literacy practices. Current and future work through the EARLY grant includes comparing half day versus full day programming, sustaining work after grant funds are exhausted, and promoting the use of intensive professional development for teachers in preschool classrooms.

Introduction
In 2008, Grand Rapids Community College and its partners Grand Rapids Public Schools and the David D. Hunting YMCA, received a $4.5 million Early Reading First grant from the US Department of Education. The Early Accent on Reading and Learning for Young Children (EARLY) was specifically designed to enable teachers to incorporate language and literacy activities based on Scientifically Based Reading Research (SBRR) to support age-appropriate development of oral language, phonological awareness, print awareness, written expression and alphabet knowledge. This paper examines the data from year three of the project to determine to what extent and in what ways the EARLY project impacted the literacy skills of preschoolers.
Oral Language, speaking and listening skills, build a foundation for later success with reading and writing (Adams 1990; Neuman and Dickinson 2006; Committee on the Prevention of Reading Difficulties in Young Children 1998). Intentional, purposeful learning opportunities are critical to develop oral language skills (Strickland and Schickedanz 2004). Strategies such as modeling, questioning, vocabulary building, and use of quality children’s literature, were used to ensure that children’s vocabulary increased and opportunities for conversation were expanded to lessen the gap for children whose exposure to rich oral language experiences puts them at risk (Hart and Risley 1995).

Phonological awareness has been shown to be the second most critical predictor of future reading success (McCardle, Scarborough, and Catt 2001) and needs to be supported during the preschool years to improve later ability to read and spell (Adams 1990; Adams et al. 1998; Lieberman 1989; National Institute of Child Health and Human Development 2000). Rhyming, alliteration and segmentation activities are known to be among the best ways to develop phonological awareness (Bradley and Bryant 1983; Meuter, Humphreys, and Rumiati 2002).

Print awareness develops during the preschool years through repeated exposure to and experiences with books, charts, and other types of functional print (Adams 1990; Strickland and Schickedanz 2004). Children’s background knowledge about the world and print concepts are fostered through experiences with books and shared book-reading experiences. (Teale and Sulzby 1989; Strickland and Riley-Ayers 2006). Reading aloud to children is cited as the single most important activity for developing skills essential for reading success (Whitehurst 1994; Bus, van IJzendoorn, and Pellegrini 1995).

Letter knowledge is one of the best predictors of success in first grade reading (Adams 1990). Research has shown that at-risk children must be exposed to letter knowledge in the preschool classroom (Strickland 1998; Wasik 2001).

Written expression begins in early childhood as children are exposed to the writing process and adults can help develop these skills by observing, modeling, extending, and providing support (Lenski and Johns 2000; McCarrier, Pinnell, and Fountas 2000; Neuman and Roskos 1998; Schickedanz 1999).

The main vehicle for promoting these skills was the use of the Classroom Literacy Enrichment Model (CLEM). The CLEM was developed and used in the 2003 Early Reading First grant issued to GRCC and its partners GRPS, Michigan Family Resources Headstart, and United Methodist Community House and also implemented in the 2005 Great Start Early Childhood Educator Professional Development grant in which GRCC and other community colleges in Michigan collaborated with the University of Michigan.

Professional Development components focused on implementation of the CLEM and using classroom assessment results to improve practices and individualize instruction. Strategies emphasized by EARLY included on-site coaching, monthly cohort workshops, Individualized Professional Development Planning (IPDP), and networking experiences. Preschool educators are in a key position to influence the development of early literacy skills by providing literacy rich classroom environments and using intentional instructional strategies (Bodrova et al. 2003;
Strong professional development related to literacy improves classroom educators’ knowledge, skills and daily practices (National Research Council 2001; Costa and Garmston 2002; Joyce and Showers, 1982); these studies identify the importance of continual, intensive and individualized training. Joyce and Showers (1996) discussed the importance of providing feedback and in-class coaching in addition to theory demonstration to help classroom educators transfer training to their daily instructional practice. An intensive strategy such as coaching is essential for practicing preschool classroom educators. Coaching has been described as providing “ongoing consistent support for the implementation and instruction components” (Poglinco et al. 2003).

A primary focus is to help individuals grow and gain expertise in their current positions. Professional development resource personnel need to be site-based and accessible to classroom educators in order to develop relationships and be effective (Hayes, Patrick, and Hall 1999; Scroggins and Powers 2004; Smith 2002). Professional development research related to literacy points to strategies and characteristics of in-service training that improve classroom educators’ knowledge, skills and daily practices. Such in-service training must be continuous, intensive, and individualized in order to be effective (National Research Council 2001; Hayes, Patrick, and Hall 1999; Joyce and Showers 1996).

Professional development must aim at cognitive processes (Bodrova et al. 2003; Costa and Garmston 2002; Garmston 2000; Guskey 1995; Joyce and Showers 1980). Adult learners have different learning styles and strengths and have more life experience to draw on than younger learners (Heibert and Stigler 2004; National Staff Development Council 2001). Classroom educators must experience first-hand as learners the instructional approaches they in turn will be using with their students (National Staff Development Council 2001). To this end, coaching and cohort workshops provide classroom educators with these experiences and present vivid examples of teaching methods they may practice and adopt as their own.

**Methods**

**Participants**

EARLY engaged 176 children in 11 classrooms in the urban area of Grand Rapids, Michigan during year three of the grant. All of the children were a part of the state’s Great Start Readiness Program targeting four-year-old children at-risk for school failure. All of the EARLY children were classified as low income and 35% were identified as limited English proficient by their parents on their enrollment form.

The comparison group for year three came from a district located on the inner suburban ring southwest of Grand Rapids in Kent County, MI. The demographic distribution for this district is similar to that of Grand Rapids. This group included five Great Start Readiness Program (GSRP) classrooms (three are ½ day and two are full-day) with a total of 96 children in the ½ day programs and 32 full day children. The comparison classrooms were assessed fall and spring with the same assessments (ELLCO, PALS, PPVT4, PreLas). They were provided with
For the data from the pre- and post-assessments, which was then used by the district as the basis for their own professional development.

**EARLY Classroom Literacy Enrichment Model**
The Classroom Literacy Enrichment Model (CLEM) builds from a child-centered foundation using classroom routines and learning centers as the platform for planning intentional literacy instructional strategies. It overlays and unifies existing curricula based on state and national standards using a Balanced Literacy approach. The model takes what many preschool classroom educators already know about how to plan an effective program and integrates this knowledge with the lessons we learned from research on early literacy instruction related to the goals of phonological awareness, oral language, written expression, alphabetic knowledge and print concepts. It is an early literacy approach that actively engages preschoolers in guided play and intentional instruction.

The emphasis placed on literacy in this model stems from the belief that early literacy development is an integral and comprehensive part of the early learning classroom. A literacy rich environment provides opportunities for children to play and explore their environment. This involves providing the experiences, activities, and materials that are suitable for children based on their age, developmental stage, and culture. Learning is interactive and primarily takes place through children’s play and exploration. The CLEM is based on respect for children as learners and for classroom educators as professionals, providing information about teaching strategies and specific activities, but also inviting classroom educators to learn from their children and use their own creativity to make this model match the needs of their own classrooms. The model is divided into two parts. The first section provides information and strategies for enriching literacy during Routine Times. Ideas for augmenting literacy experiences during Group Experiences, Transitions, Food Experiences, and Rest Time are provided to maximize learning during the daily routine.

The second part of the model focuses on strategies to support literacy throughout the classroom environment. Each Learning Center fulfills specific goals to provide for the varying needs and interests of individual and small groups of children, promoting independence and initiative. Centers are equipped with a variety of intentionally chosen learning materials, experiences, and activities that encourage children to become creative problem solvers and construct knowledge. Classroom educators actively engage with children in the learning centers, following their lead and finding opportunities to enrich and build on their literacy experiences (Brinks 2007).

**Assessment Practices**
EARLY provided formal assessment data related to the pre-literacy knowledge of children through pre- and post-tests using Peabody Picture Vocabulary Test IV (PPVT 4), Phonological Awareness Literacy Screening (PALS), and Preschool Literacy Assessment Scales (PreLas). This data was shared in a timely manner to ensure that classroom educators had information to
help them plan instruction for both individuals and groups of children. Informal quarterly classroom educator observations were also cross-tabulated with the data from PALS and PPVT 4 to help the classroom team target interventions for specific children as needed. Year three emphasized using both informal and formal assessments to guide Response to Intervention (RTI) techniques with small groups of children.

The Early Language and Literacy Classroom Observation (ELLCO) was also collected two times per year and shared with educators so that they could use this data to inform the day-to-day work of the Literacy Coaches. The ELLCO was found to be valuable by educators during GRCC’s 2002 grant, as it helped to identify areas of the classroom needing enhancement and direction for professional development and coaching. The intensive professional development used in this project resulted in significant improvements in the mean scores for all areas of the ELLCO when comparing baseline to the final scores in year three (Brinks 2007).

**On-site Coaching**

Intensive on-site formal coaching is a key professional development strategy of EARLY. Coaches spent an average of one day per week in each classroom engaging in the roles outlined in figure 1. Coaching assists educators to “transfer” their learning into their own classrooms (Joyce et al. 1981). With coaching, classroom educators reflected on assessment results and current practices, set goals, identified desired literacy outcomes and strategies to reach those outcomes, created and implemented an action plan, selected coaching strategies, and then reflected collaboratively with the coach.
Figure 1. Coaching planning cycle and roles

Monthly Cohort Workshops
Monthly classroom educator cohort workshops, led by college instructors, Literacy Coaches, classroom educators, and nationally known speakers were scheduled during the academic school year to teach new instructional approaches that coaches and teachers then worked to implement in the classrooms.

Individualized Professional Development Planning
Individualized Professional Development Planning (IPDP) was used to assist each educator to assess key existing strengths and competencies, identify what they needed to develop to improve their teaching, and to determine specific actions needed to achieve their goals. (Sparks et al. 1989). A Professional Development Specialist (PDS) worked closely with educators to create an IPDP that guided an intentional set of professional development activities. Formal meetings took place twice a year and plans were reviewed on an ongoing basis.

Networking Experiences
Networking experiences included visitations to preschool and kindergarten classrooms, peer partnerships with other classroom educators within the project, and book studies. Classroom visitations allowed educators to observe environments and instructional practices of other early childhood professionals. Peer partnerships promoted relationships between participants and book studies built a professional learning community.

Results
The results are described in terms of the Government Performance and Results Act (GPRA), established for the Early Reading First Grants, which are focused on child performance. The first GPRA indicator looks for significant gains in Peabody Picture Vocabulary Test IV (PPVT 4) scores, a receptive measure of expressive vocabulary and word retrieval for standard American English. Because of the variability of pre-test performance, sub groupings as described in the PPVT manual (1 standard deviation or 15 standard score points apart) were used to demonstrate which children EARLY was most effective in impacting. Figure 2 illustrates the percent of children in each of these subgroups.

![Figure 2. Fall PPVT subgroups](image)

The GPRA indicator considers a gain of 4 or more standard score points between pre- and post-testing as a significant gain. EARLY children overall gained 9 Standard Score points, 2.3 times the success criteria, with 71.2% of them making significant gains. As is depicted in Figure 3A, the extremely low subgroup showed the most growth at 4.5 times the success criteria, with 86% of the children showing significant gains. The Moderately Low and Low Average subgroups also showed gains more than 1.5 times the success criteria. These two groups make up 75% of the EARLY children. The High Average group, comprising 15% of the children, showed expected age growth and the Moderately High group did not show expected growth. It should be
noted that this last group makes up 1.3 percent of the group and scored at the very top edge of the tools range to begin with.

**Figure 3.** A. GPRA 1 by subgroup; B. GPRA 1 Comparisons

Finally, in comparing the treatment group with the comparison group in terms of pre-post gains, the gains for EARLY children are statistically significant (t-test, p< .05). Although the EARLY children started the year at a lower level than the comparison group, they caught up (p> .05, ANCOVA, NEGD) by the end of the year. As depicted in figure 3B, overall the EARLY children grew at 2.5 times the rate of the control group.

The second GPRA indicator also uses PPVT scores to determine the percent of children who demonstrated age appropriate receptive skills. Overall the EARLY children began the year with 56% of the children having age appropriate receptive language skills. This percentage grew to 74% in the spring. When applying the same subgroups as described above, EARLY was the most effective with the Moderately Low subgroup, as depicted in figure 4A.
In terms of effectiveness of the intervention relative to the comparison group, the EARLY children’s pre-post gains are statistically significant (t test, p<.05). Although EARLY children began the year with a smaller proportion of children demonstrating age appropriate language skills in the fall they caught up with the comparison group (p>.05, ANCOVA, NEGD) growing at twice the percentage rate (figure 4B).

The third GPRA indicator focuses on the average number of letters children are able to identify as measured by the Phonological Awareness Literacy Screening (PALS) Pre-K Upper Case Alphabet Knowledge. Overall the EARLY children had a mean increase of 16 upper case alphabet letters between fall and spring. All subgroups gained 10 or more letters during this time period. This is depicted in figure 5A.

---

**Figure 4.** A. GPRA 2 by subgroup; B. GPRA 2 Comparisons
In terms of looking at the effectiveness of the intervention, pre-post gains for the treatment group are statistically significant (t-test, p<.05). In relation to the comparison group, the EARLY children started the year with a smaller number of uppercase letters recognized in the fall and then surpassed the comparison group (p<.05, ANCOVA, NEGD). As illustrated in figure 5B, the EARLY group showed increases 3 times that of the comparison group.

Finally, the PALS summary scores can be looked at to determine the overall literacy readiness of the treatment and comparison groups. Again, the EARLY children started at a lower level, but outperformed the comparison group by 2.5 times, reducing the at-risk group from 93% in the fall to 19% in the spring. On the PALS summary, a score greater than 56 is correlated with success in first grade and beyond. Seventy percent of the EARLY children reached this mark. The 19% of children that did not move from the at-risk category primarily represents the lowest performing English Language Learners (ELL) group who did make gains, but these gains were not large enough to move them from the at-risk category.

**Conclusion**

The growth of children, especially in the lower subgroups was very promising in this study. The play-based format of the CLEM actively engaged children in literacy activities in a manner that was comfortable for both children and teachers. The intentional use of both informal and formal
use of data provided both direction and motivation to teachers. As the grant progressed, teachers became increasingly data driven and committed to using assessment results to improve instruction. They began ongoing use of the subtests of the PALS as classroom based measurements to ensure that children were progressing.

Carr and Kemmis (1986) describe action research as being about improving practice, improving the understanding of practice and improving the “situation” in which the practice takes place. The main goal of this project was to improve practices and child outcomes throughout the classrooms involved in the grant. Certainly this matches the premise of action research. While quantitative data such as is presented in this study clearly show significant gains for children, the challenge remains in trying to parse out the effect of specific components of the treatment. In this study it is difficult to separate the impact of each of the elements: Classroom Literacy Enrichment Model, onsite coaching, assessment practices, monthly cohort workshops, and other professional development experiences. While teacher surveys gave some insight into this, the complexity of the work and the emphasis on an action research approach based on continuous program improvement makes this very challenging. For example, in the area of coaching, while the model described earlier was used consistently and coaches and teachers spent approximately the same amount of time involved in the process, the roles and activities were very much individualized based on factors such as the teacher’s level of experience, dispositions, and the relationship between the coach and the teacher.

The action research approach also came in when looking at curriculum. Many of the elementary buildings the preschool classrooms were located in used the Visual Phonics approach (International Communication Learning Institute, 2007). Several of the preschool teachers and coaches piloted adapting this model for preschoolers by integrating the hand signals in classroom routines and play in learning centers. As both qualitative and small samples of quantitative data began to come back showing this as a promising practice, especially in the English language learner population, this adaptation of Visual Phonics for preschoolers was then quickly added to other classrooms at varying levels. This type of inquiry approach oriented treatment reflects the complexity and the practical nature of teaching and learning.

One of the limitations in this study was the length of the day in some of the comparison classrooms. Most of the GSRP programs are ½ day programs due to state level budget limitations and school districts’ desire to serve as many children as possible. During the fourth year of the grant, the external evaluators are focusing on studying the differences in effect between the ½ and full day programs. This information will help in documenting if and to what extent a full-day experience increases children’s literacy skills in comparison with a ½ day experience.

As this project engages in its fourth and final year, the emphasis is on finding ways to sustain the current level of assessment and intentionality without the additional resources the grant provides. Avenues being pursued are peer coaching models, collaborative planning and classroom partnerships. Changes related to assessment use have become a part of the culture and have strong philosophical support by the organizations involved. However, it remains to be seen
as to whether more concrete supports will be forthcoming during a time of budget constraints. Gathering and analyzing assessment data, individualizing instruction based on assessment results and, reflecting on and changing practices all require time and classroom support for teachers.

References
International Communication Learning Institute. 2007. See the Sound: Visual Phonics. Webster, WI: ICLI


Published by the Forum on Public Policy
Copyright © The Forum on Public Policy. All Rights Reserved. 2012.

Acknowledgements
The external data analysis and figure development was provided by PWK Inc.
Lisa Wyatt Knowlton EdD, Cynthia Phillips PhD