Is the Indiana Early Literacy Intervention Grant Program Working?

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There is little debate that the most essential skill for academic success is the ability to read. It follows that students must learn to read before they can read to learn. Despite the broad acceptance of the importance of print literacy, many students remain below grade level in their reading skills. Although the 2005 results from the National Assessment for Educational Progress indicate that Grade 4 reading scores in Indiana were one scale score point above the national average (218 to 217), 70 percent of Hoosier students had reading scores at or below a basic level of proficiency at this grade level.[1]

To improve the literacy skills of students in preschool through Grade 2 who are at risk for academic failure due to poor reading skills, the Indiana Early Literacy Intervention Grant Program (ELIGP) was established in 1997. The grant program was a component of a statewide literacy initiative advanced by the Indiana Department of Education (IDOE) and Dr. Suellen Reed, State Superintendent of Public Instruction.

In this report, the Center for Evaluation and Education Policy (CEEP) reviews the history of the ELIGP, the research base on individual intervention models, and the impact of the grant program on student achievement. In light of this information, CEEP examines the central question, "Is the Indiana Early Intervention Grant Program Working?"

OVERVIEW OF THE GRANT PROGRAM

From its inception, the ELIGP has emphasized local school decision making in choosing literacy interventions that are funded by the state of Indiana through a competitive grant process. Schools interested in receiving ELIGP funds must complete a detailed application describing the early literacy intervention to be used and how it will be implemented; the applications are then reviewed and assessed on their proposed implementation. The grant also funds professional development activities for school personnel that are directly related to the literacy intervention. As a part of the grant application for the 2006-07 school year, applicants have also agreed to administer a fall and spring assessment to determine if program implementation is proceeding as planned, to identify any implementation challenges that may need to be addressed, and to submit student literacy achievement data for state compliance and evaluation. The Center for Evaluation and Education Policy (CEEP) has monitored and evaluated the ELIGP since the 1997-98 school year, and selected findings are discussed here.

In the 2005-06 school year, the program served approximately 12,700 students in 307 schools. Representing 150 school districts, these schools shared $3.62 million in grants for early literacy intervention programs. Individual grants ranged from $4,530 for the Tri-Creek School Corporation to $254,050 for the Indianapolis Public Schools, and the median grant amount was $39,590.[2] (See Figure 1 for ELIGP allocated funds from the 1997-98 school year through the 2005-06 school year.)

During the 2005-06 school year, the three most common literacy intervention models implemented by schools receiving ELIGP funding were Reading Recovery, the Waterford Early Reading Program, and Literacy Collaborative.[3] (See Table 1 for a comparison of these programs.) A variety of other interventions including Success for All, Four Blocks, Even Start, and full-day kindergarten have also been implemented locally with ELIGP funds since the inception of the grant program. Additionally, during the grant application window for the 2006-07 funding period, school corporations submitted requests for other intervention programs not commonly funded in previous grant cycles, including Scott Foresman Early Reading Intervention (ERI), Voyager Passport, and Read Well. CEEP will summarize the components and results of these programs with its report issued at the end of the 2006-07 school year.

Figure 1

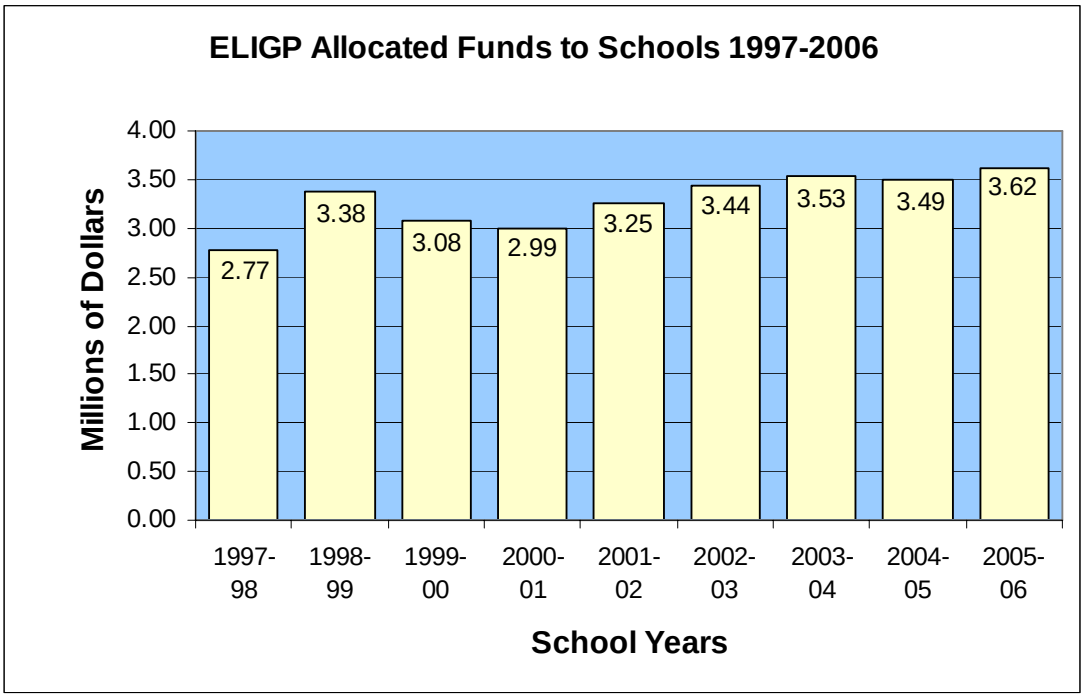

Figure 1 based on Plucker, J.A., Simmons, A.B., & Ravert, R. (2005). Indiana's Early Literacy Intervention Grant Program 1997-2004. Bloomington, IN: Center for Evaluation & Education Policy, and IDOE Andrew Conway, personal communication, 4/21/2006.

INDICATORS OF SUCCESS

Variations among the programs and the measures used to define success complicate the task of comparing individual literacy programs and the likelihood of success for each intervention. Nevertheless, there are indicators which can help identify success, including student achievement, grade retention rates, and special education referrals; measuring parental involvement and professional development activities may also aid in identifying success.

ISTEP+

Improved test scores on the Indiana Statewide Testing for Educational Progress-Plus (ISTEP+) suggest that student achievement in Indiana is increasing. CEEP has studied the relationship between grant funding and the ISTEP+ and has considered other studies that examine similar variables. Research shows moderate evidence of achievement gains among students in schools funded by the ELIGP. Specifically, Reading Recovery has shown promising results in schools facing high rates of poverty. In 2001, CEEP reported an increase of nearly three percentage points in the number of students in high-poverty schools that passed the English/language arts portion of ISTEP+ at Grade 3 when Reading Recovery had been implemented. Likewise, during 2001-02, schools that implemented Waterford had a higher mean ISTEP+ passing rate than schools that did not use Waterford.[4]

Student Retention

If necessary, schools may retain students in their current grades until they have mastered the required literacy skills. However, retention may be a poor option for addressing individual academic needs, or it may be viewed as a sign of an inflexible educational environment. Therefore, a reduction in retention rates may indicate greater flexibility with respect to accommodating learning diversity and greater student mastery of grade level standards. CEEP found that most programs funded by ELIGP between 1997 and 2002 were associated with a reduction in retention rates in the lower grade levels, although not all of the reductions were statistically significant. In particular, for the 2001-02 school year, ELIGP-funded schools had the lower retention rate of .83 percent in contrast to a rate of 1.27

TABLE 1. Comparison of the Primary Intervention Models Funded by the ELIGP (2005-06 School Year)

	Waterford Early Reading Program	Reading Recovery	Literacy Collaborative
Student Population	Grades K-2	lowest 20% of Grade 1 readers	Grades K-6 school-wide framework
Organizational Features	technology-based, classroom-based, ability grouping, diagnostic procedures, frequent assessment, small groups	pullout program, one-on-one, grade limit, book canon, diagnostic procedures, frequent assessment	classroom-based, book canon, literacy-rich environment, small groups, systematic learning, trade books, interactive learning
Instructional Philosophy	child-centered, developmental, phonological awareness	child-centered, phonological awareness, whole language, student empowerment	child-centered, reflective practice, student empowerment, thematic units, whole language
Instructional Features	emergent spelling, essays, predicting meaning, multisensory awareness, creative writing, workbooks	creative writing, predicting meaning, multisensory activities, journals, paired reading, self-selected reading	big books, creative writing, guided composition, multisensory activities, paired reading, story maps, reading aloud
Literacy Outcomes	emergent literacy, meaning-oriented comprehension, critical literacy	emergent literacy, meaning-oriented comprehension, critical literacy	composition, meaning-oriented comprehension, critical literacy
Parental Involvement	book distribution, paired reading, parent awareness, take-home activities	paired reading, reading instruction training	book distribution, parent awareness, reading instruction training
Teacher Development	certified specialist, in-service workshops, school site training, modeling with coaching	certified specialist, ongoing meetings, networking, university training	in-service workshop, teacher collaboration, peer observation, on-site facilitator

Table 1 based on St. John, E.P., Loescher, S.A., & Bardzell, J.S. (2003). *Improving reading and literacy in grades 1-5: A resource guide to research-based programs.* Thousand Oaks, CA: Corwin Press.

percent in schools without the use of ELIGP funds. Furthermore, Reading Recovery was found to have a positive effect in schools with a high poverty rate; those that implemented this program reported a retention rate of .65 percent, in comparison to a rate of 2.96 percent in high-poverty, non-intervention schools. Waterford was the only program implemented during this period that was associated with little or no reduction in retention rates.[5]

Special Education Referrals

A decline in special education referral rates following the implementation of a literacy intervention may also signal a successful intervention. CEEP reports that during the first year of the ELIGP (1997-98), some early literacy interventions were associated with lower special education referrals, although the results were not statistically significant. However, the analysis of data from subsequent school years through 2000 showed that special education referrals were not reduced, no matter which literacy intervention had been implemented. As CEEP noted, the full impact of these programs on special education referrals may require long-term studies, rather than brief, yearly reports.[6] For a contrasting outcome, a New York University study on the impact that Reading Recovery (RR) had on special education referrals in the New York City area over three school years found a 9 percent rate of referral for students who completed RR. Over the same period, students who had not completed the intervention had a 14 percent rate of referral; the 5 percentage points difference was statistically significant.[7]

Additional Indicators

Finally, other outcomes such as an increase in parental involvement and teacher professional development can be used to indicate successful programs. The nature of many intervention programs requires increased communication between the school and the home, and/or professional development to enhance teachers' skills in literacy instruction. Therefore, ELIGP funding has supported both of these aims. For example, ELIGP schools are more likely to distribute books to households in need and to utilize parent volunteers. In addition, funding corresponds with a greater frequency of in-service professional development for school personnel than for comparison schools. These professional development activities may be funded through ELIGP as long as they are tied directly to the literacy intervention program being implemented in the school.[8]

EVIDENCE-BASED RESEARCH

As noted above, it is important that ELIGP funding is utilized to implement literacy interventions for which there is evidence of success based on legitimate research. In order to assess research that investigates the effectiveness of educational practice, including reading instruction, the U.S. Department of Education (USDOE) distinguishes between studies that provide rigorous evidence of educational outcomes from those that do not. Of those studies which provide rigorous evidence, the USDOE classifies them as providing either strong or possible evidence. Strong evidence results from research that is based on well-designed and implemented randomized control trials. Possible evidence may come from one of two sources: 1) studies that include randomized controls, but which are lacking in some other aspect of methodological design, and 2) studies that use a comparison-group design in which there is a strong match between the comparison and intervention groups in factors such as demographics and student achievement.[9]

An ethical hindrance to procuring strong evidence is that in completely randomized control studies, some children may not receive the help they need if they are denied assistance because they are selected to be in the control group that does not receive the intervention. Consequently, educational researchers may include in their studies randomly selected comparison groups of students not in need of an intervention, but who match the students receiving the intervention in a number of factors, as described above.

RESEARCH REVIEW

This review covers the three most commonly implemented literacy interventions in Indiana schools that received ELIGP awards during the 2005-06 school year. Future CEEP reports will provide research review information on the new intervention programs funded during the 2006-07 school year such as Scott Foresman Early Reading Intervention, Read Well, and Voyager Passport. The methodology for all of the following research, except that reported by the Ohio State University, falls within the USDOE guidelines for evidence-based research. The Literacy Collaborative data reported by the Ohio State University derive from a multi-year, nationwide literacy assessment of every student who participates in that program, but those students are not compared to students who are not in the program. Nevertheless, the data from Ohio State provide valuable evidence for the efficacy of Literacy Collaborative.

Waterford Early Reading Program

Unlike Reading Recovery and Literacy Collaborative, the Waterford Early Reading Program (WERP) is a technology-based intervention. Although students participate in the intervention through the use of personal computers, WERP can be implemented as a small group program. Given that WERP is technology-based, the teachers and administrators, in a study reported in the Reading & Writing Quarterly, carefully chose it because WERP corresponded closely to the reading curriculum already in place, and/or it could be used both at home and at school.

The study lasted two years and included children from two consecutive Grade 1 classes in a rural Midwest school. Ethnic and socio-economic data were not available for the students in the study, but the student population of the school as a whole was 97 percent white, and 11 percent of the students were eligible for free or reduced-cost meal programs. Forty-seven students comprised the control group, which did not utilize the intervention, and 46 children were in the experimental group. The students in each of these groups were then classified into low-, moderate-, or high-performing groups, based upon initial testing.

When the reading performance of all the children was tested at the end of Grade 2, researchers found that the students in the experimental group improved their scores to a greater degree than did the students in the control group. In particular, the test scores of the experimental low-performance students were equivalent to those of the moderate-performance students in the control group. Furthermore, the students in the low-performing experi-

mental group experienced more overall improvement than did the experimental students in either the moderate- or high-performing groups.[10]

Other research, conducted by a team based at Buffalo (NY) State College, included over 100 urban children in 16 classrooms. The study investigated the effects of WERP on kindergarten and Grade 1 students participating in the program in comparison to students in the same grade levels not in the program. At the time of the study, the school district was comprised of about 72 percent minority students, and 67 percent of the students qualified for free lunch. Additionally, approximately 18 percent of the district's students had a disability and about 6 percent of the students were English language learners. The school district and Waterford provided training and ongoing technical support for all of the teachers participating in this study. The results of the study indicate that there were no statistically significant differences between the two groups in reading and writing achievement at the end of the school year. Instead, the researchers found that student achievement was significantly associated with a child's entering level literacy skills and the type and amount of teacher interaction with the students.[11]

Reading Recovery

In contrast to Literacy Collaborative and WERP, Reading Recovery (RR) is a pull-out program that generally serves a limited number of Grade 1 students— those who score in the lowest 20 percent of their class for reading skills. Of the three programs reviewed in this report, Reading Recovery (RR) is the only program usually conducted on an individual tutoring basis.

A professor from the University of North Carolina, Greensboro conducted a two-year study on RR in the Southern U.S.; this study compared 62 RR students with 54 students in another early literacy intervention and a control group of 58 students. Many of the students were transient, approximately 65 percent of them were minority students, and about 75 percent were eligible for free or reduced lunch. The results indicated that students who received one or the other intervention performed significantly better on tests of word recognition and spelling at the end of Grade 1, and had lower rates of retention in Grade 1 than those in the control group. In addition, students who received the intervention were less likely to be retained at the end of Grade 2 and continued to receive higher scores on word recognition tests in Grade 2 than their control-group peers.[12]

Another study addressing the effectiveness and efficiency of RR based out of Oakland University focused on 148 Grade 1 students from across the nation. Seventy-four at-risk students were randomly assigned to groups to receive the intervention during either the first or second half of the school year. These students were then compared with a total of 74 low- and high-average students from the same classrooms who did not receive the intervention. Among the four groups, minority student enrollment ranged from 50 to 62 percent, and 36 to 60 percent of the students qualified for lunch assistance. At the end of the school year, the at-risk students who received RR during the first half of the school year scored between the low- and high-average students on ten different measures of literacy skills, and the at-risk students scored higher than the high-average students on one of those tests. Students who received the intervention during the second half of the school year scored between the low- and high-average students on three literacy skill measures, and outperformed the high-average students on three other literacy skill measures at the end of the school year.[13]

Reading Recovery has also been shown to be effective as a diagnostic tool for identifying students who may have a learning disability. For example, in a study using data from New York University's RR database, researchers determined that students who successfully completed the intervention required testing for learning disabilities and/or were placed into special education less often than were students in a control group that did not receive the RR intervention at all, or than students who did not successfully complete RR. The study took place over a three-year period and included 4,124 Grade 1 students in 11 New York City districts. A high percentage of both RR and control students were eligible for lunch assistance (84-89 percent, respectively) and most students were minority (83-86 percent, respectively). The researchers concluded that using RR as a diagnostic tool could help schools and districts save time, money, and long-term educational resources that otherwise might be misspent on children who do not need them.[14]

Literacy Collaborative

Literacy Collaborative (LC) is unique among the three interventions reviewed in this report in that it is a framework designed for use in grades K-6, it is schoolwide, and its implementation is closely monitored by professionals in higher education. Based at Ohio State University and working with several other institutions of higher learning, the LC project conducts nationwide fall-to-fall assessments of every child in LC schools through the use of multiple reading and writing tests. The cumulative results of the assessments enable LC schools to observe trends over time so that they can evaluate curricula and teaching methodology. In part, the 2003 multi-year report looked at trends of student achieve-

ment from 1996 to 2001 as measured by two well-known literacy assessments and used data from 33 schools that had been part of LC for at least four years with the same LC coordinator. These schools were representative of other LC schools in terms of ethnic and economic diversity; 13 of the schools had more than 50 percent minority students, 14 of the schools had more than 50 percent Caucasian students, and 29 of the schools had more than 25 percent of their students qualified for free or reduced price lunches.

The results showed that although the scores of entering kindergarten students for a measure of letter-sound relationships remained relatively constant over the five years, as the students progressed through Grade 1, their scores continually increased. Each successive year of Grade 1 students had higher scores than the Grade 1 students before them, despite the fact that as kindergarten students, each class entered with relatively similar scores. This progression is evidence that the longer LC was implemented, the more improvement each successive group of students demonstrated. Likewise, another assessment of students' total reading skills (including vocabulary and reading comprehension) in the fall of Grade 2 also increased from year to year.[15]

In an independent study, Literacy Collaborative (LC) was compared to three other early literacy interventions: Success for All, Developing Literacy First, and Building Essential Literacy. Participants in the study were 145 Grade 1 students in four Boston area schools; the students were predominantly minorities (68-97 percent) and 85 percent of them received free or reduced lunch. Each of the four interventions was assessed for its efficacy in helping students to develop six literacy skills. An assessment in the spring showed LC proved to be better than two of the other interventions in the development of four skills, and it was better than one other intervention for one skill. In addition, it yielded the highest average writing score of all four interventions. The researchers suggested that the emphasis on writing pedagogy in LC teacher training led to more and better writing help for the students from their teachers. In addition, because LC incorporates the reading and spelling of high frequency words, children receiving this intervention may have had more vocabulary accessible to them during the writing process.[16]

Overall, this brief review of the research literature indicates that these early literacy interventions do have a positive impact on students' literacy development. However, an intervention must be carefully chosen to match the population being served and then be properly implemented and maintained in order to maximize its potential benefits.

GRANT PROGRAM UPDATES FOR 2006-07

In order to improve literacy education and better utilize resources, several new features were incorporated into the ELIGP for the 2006-07 school year. For the first time since the grant's inception, student literacy assessments for every intervention program at participating schools will be conducted to quantify change in student achievement associated with participation in an ELIGP-funded early literacy intervention. CEEP's analysis of assessment data in the fall of 2006 will provide baseline data which will be compared to data from a mid-year or spring assessment. Drawing on empirical data, school personnel will be able to identify the strengths of individual interventions and the challenges to their successful implementation. In addition, these assessments can inform the judgments of school personnel about the efficacy of the interventions in promoting student literacy achievement.

To help maintain consistency in the reporting and assessment of student achievement, the IDOE encouraged schools in 2006 to use DIBELS (Dynamic Indicators of Basic Early Literacy Skills) or the Indiana Reading Assessment. However, grant recipients under certain circumstances (and dependent on the intervention model implemented) will be permitted to use other pre- and post-assessments. Additionally, the IDOE set an earlier submission date for grant proposals, enabling the Department to notify schools of their funding awards well in advance of program implementation. The Department also re-emphasized that funding was available only for evidence-based intervention programs. Furthermore, literacy intervention models that are established as frameworks to guide instruction will be less likely to be funded than intervention programs that directly serve and meet the literacy needs of students. Finally, only professional development directly linked to a school's early literacy intervention may be included in a grant proposal for possible ELIGP funding.[17]

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The Indiana Department of Education efforts to retool and reinvigorate the ELIGP should improve program effectiveness and accountability.

As a result of the required use of student literacy assessments, the Department will be able to provide tangible, quantitative data about the effects of the early literacy intervention programs implemented locally at a depth previously not available. This information should be used to inform program oversight, local implementation, and future grant award determinations, thereby helping to ensure long-term, comprehensive early literacy reforms in the state of Indiana.

Recommendation

The IDOE must guide funded programs to utilize either DIBELS or the Indiana Reading Assessment to assess student literacy skills and monitor compliance with participation. Emphasis on the timely submission of performance data to CEEP is essential to ensure a valid and reliable evaluation of the information to inform future program administration decisions.

Once the performance data have been analyzed and summarized, the IDOE should use this information to further refine and improve program administration at the state level and implementation at the local level. The results from the fall and mid-year or spring midterm assessments should also be utilized to better match interventions with student populations. The IDOE should fund only programs that demonstrate improved student literacy and reading levels.

Conclusion

The IDOE is funding local requests for early literacy intervention programs that research supports as evidence-based.

The research summarized in this report provides substantiation that there is, generally speaking, research and evidence supporting the primary programs funded by the ELIGP. However, grant application requests regularly exceed the availability of grant funds and dollars are being stretched to fund as many applications as possible. Thus, given current funding levels, the funded intervention programs are only reaching a fraction of the at-risk student population.

Recommendation

Given the current statistics for the state of Indiana regarding the reading achievement of students, CEEP finds that continued funding is both warranted and necessary in order to reach a far greater percentage of the student population that are at risk for reading failure. Therefore, the IDOE should seek increased funding of the ELIGP from federal, state, and local sources to scale-up the grant program. By supporting the development of ELIGP, the literacy needs of at-risk students may be addressed in the most effective ways possible.

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