Indiana's Early Literacy Intervention Grant Program 1997-2004

CEEP Center for Evaluation & Education Policy

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Prepared for the
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Executive Summary

In 1997, Indiana's Early Literacy Intervention Grant Program (ELIGP, also referred to as EIGP) was initiated by Dr. Suellen Reed, Superintendent of Public Instruction, with the support of the Indiana General Assembly. The grant provided annual funding for schools to implement Reading Recovery, a highly regarded early literacy program, or other literacy interventions. From its inception, approximately $31.4 million has been distributed through the grant program.

Since 1997, the Center for Evaluation and Education Policy (CEEP, formerly the Indiana Education Policy Center) has conducted a series of evaluations on ELIGP implementation. This report draws from eleven previous reports in order to describe and provide evidence of the effectiveness of the ELIGP program between 1997 and 2004. Findings are based on a variety of data, including records provided by the Indiana Department of Education (IDOE), surveys collected from principals and teachers at funded and comparison schools, observational and interview data collected during site visits, and ISTEP+ results.

Findings indicate that ELIGP has had a considerable impact on literacy education in Indiana, serving more than 10,000 students per year and over 700 schools since 1997. While analysis across the eight years of the grant is complex, due in part to the variability in interventions chosen each year of the grant, data generally links funding to improvements in areas of teacher professional development, lower grade retention, decreased special education referrals, and increased student achievement.

Among Themes Consistently Cited in CEEP Reports:

- ELIGP funds are apparently being awarded to the intended recipients—students at high risk for literacy difficulties. And most of the funded interventions, including Reading Recovery, appear particularly effective among this target group.
- Programs appear to do best given time to develop, as demonstrated in evaluations comparing success rates between first-year programs and those with extended funding.
- Programs associated with success do not necessarily represent extreme departures from standard literacy instruction in Indiana schools. Rather, those programs tend to reflect a balanced approach to literacy education including a comprehensive set of features. Contextual, holistic approaches, as well as more direct, phonics-oriented tactics, are both found in the most successful programs funded by ELIGP, and the combination appears to be associated with desired student outcomes.

Based on these conclusions and drawing from seven years of ELIGP data analysis, the following recommendations are made to the IDOE:

Research and Evaluation

- Continue to conduct an annual survey of ELIGP and comparison schools with the sustained funding in the 2005-07 state budget. Experimental and/or multi-year designs should be considered, to allow for the most rigorous evaluation of program outcomes.
- Continue to identify research-based programs and provide schools with information and assistance to guide their literacy intervention choices and select the most appropriate program for their school context.
- Encourage schools to review and refine their early reading and literacy programs through systematic evaluations.

Funding for Early Literacy Initiatives

- Funding for packaged programs should be targeted on interventions with proven records of success (i.e., evidence-based best practices), especially interventions that focus on reading improvements in Grades 1-3. Of the ELIGP interventions assessed by CEEP, Literacy Collaborative appears especially successful, demonstrating the most consistent positive results. Reading Recovery, Success for All, and Four Blocks all demonstrated favorable results overall. Early Success shows promise, based on limited data collected on that intervention, and merits further attention. The First Steps and Waterford programs both received mixed results and should be examined further.

- Funding for locally designed interventions should be considered carefully, based on each school's previous levels of success implementing literacy reforms. Ongoing funding for these programs should be determined by the effectiveness and sustainability of each program.
- Encourage schools serving low-income students to participate in the ELIGP program. Technical support for planning literacy interventions and applying for funding should be made available to low-income schools that have not applied previously.

Providing Support to Indiana Schools

- Increase emphasis on ongoing professional development in early reading and literacy for elementary teachers.
- Utilize local university support to enhance the implementation of early literacy intervention models. The IDOE should facilitate or encourage closer collaboration between schools and universities concerning ongoing professional development and evaluation that would benefit individual schools and the ELIGP grant program as a whole.
- The IDOE should consider resuming efforts to provide grant workshops and expert guidance on reading research and literacy program implementation.

Indiana's Early Literacy Intervention Grant Program 1997-2004

Introduction

The Early Literacy Intervention Grant Program (ELIGP) was initiated by the Indiana Department of Education in 1997, under the leadership of Dr. Suellen Reed, Superintendent of Public Instruction, and with the support of the Indiana General Assembly. The ELIGP was designed to support schools in their efforts to develop early literacy programs that meet the needs of Hoosier students at risk of school failure. That year, ELIGP provided funds for new projects that served 262 elementary schools in approximately 107 Indiana school corporations. Since then, annual funding has continued with the goal of increasing the literacy skills of students in Grades K-3 who are at risk for school failure.

Since the 1997-1998 funding year, the Center for Evaluation and Education Policy (CEEP - formerly the Indiana Education Policy Center) has conducted annual evaluations of the ELIGP. The evaluations have used a variety of methods to document implementation and outcomes associated with the grant. Specific foci of program reports have included descriptive analyses of funded programs, and statistical analyses examining the relationship between funding and student achievement, special education referrals, and grade retention in ELIGP-funded and comparison schools.

Data collection and analysis methods have included principal and teacher surveys; financial analysis; site visits and case studies; content analysis of program components; and analysis of retention rates, special education referral rates, and ISTEP+ results. The purpose of the current report is to synthesize 11 previous CEEP project reports in order to provide a comprehensive overview of ELIGP implementation and effectiveness.

Information presented in this report draws from CEEP involvement across eight years of the grant program and includes data on financial aspects of the program, its impact on schools, and select student outcomes. Results regarding specific initiatives are detailed briefly, and conclusions are drawn regarding benefits generated by the grant and which students appear to gain most from the initiatives. Taken together, these cumulative findings lead to a number of implications and recommendations which conclude the report.

This report focuses on interventions in Grades 1-3, because that has been the primary focus of the ELIGP grant across its life. Although some preschool (Even Start) and kindergarten programs were the recipients of grant funds during some of these years, those data are limited and insufficient to support the type of summative findings that this report seeks to generate. Table 1 lists major reports produced by the CEEP that were referenced in the current evaluation, the components of those studies, and the outcomes examined in each.

TABLE 1. Table 1: Prior ELIGP Studies Completed by CEEP and Referenced in the Current Report.

Publication Year	Research Approach	Data Timeframe	Outcomes of Interest
1999	Survey of principals in grant and comparison schools, site visits, case studies	1997-1998	• Retention • Referrals • Instructional components
1999	Resource Guide	N/A	• Developing research-based programs
2000	Survey of principals in grant and comparison schools, site visits, case studies	1998-1999	• Program features • Retention • Referrals • Instructional components
2000	Survey of principals in grant and comparison schools	1999-2000	• Program features • Retention • Referrals • Instructional components

TABLE 1. Table 1: Prior ELIGP Studies Completed by CEEP and Referenced in the Current Report.

Publication Year	Research Approach	Data Timeframe	Outcomes of Interest
2000	Impact study combining data from first three years of ELIGP grant	1997-2000	• Program features • Retention • Referrals • Instructional components • ISTEP+ results
2000	Analysis of funding across first 3 years of ELIGP grant	1997-2000	• Amount and percentage of funding for Reading Recovery and OELI projects • Trends in funding
2001	Descriptive study of achievement gains in two ELIGP grant schools	2000-2001	• Pre- and post-student scores on Basic Academic Skills Sample (BASS)
2001	Survey of principals and teachers in grant and comparison schools	2000-2001	• Program features • Retention • Instructional components • ISTEP+ results
2002	Resource Guide	N/A	• Methods for selecting and assessing reading programs
2003	Online survey of principals and teachers in grant and comparison schools, site visits, case studies	2001-2002	• Program features • Retention • Instructional components • ISTEP+ results
2004	Site visits and case studies comparing Four Blocks and Waterford programs	2002-2003	• Application of instructional components in classroom • Teacher opinion • Student activities • ISTEP+ results

Grant Details, 1997 - 2004

Since the program's inception, ELIGP funding has been distributed to approximately 700 Indiana schools to support Reading Recovery, the Waterford Program, and other literacy initiatives. While the level of state funding has remained relatively constant, excepting a 7 percent cut in 2002 under the Deficit Management Plan, the total amount of funds given and the proportion dispersed to intervention types has varied from year to year. CEEP reports have provided descriptive data documenting distribution of

funds for each year of the grant, with the exception of 2002-2003, for which reliable data were not available from IDOE.

Table 2 summarizes ELIGP funding information across the seven years of available data. These data indicate that a total of 674 different schools from 203 school corporations participated in at least one of the grant years. This total excludes schools from 2002-2003, for which no reliable data were available; using a conservative estimate of participants for that year, the total would be easily over 700 different schools across the eight years.

TABLE 2. Table 2: ELIGP Funding 1997-2004

	97-98	98-99	99-00	00-01	01-02	02-03*	03-04
Reading Recovery trainer	$596,482	$105,000	$177,000	$183,000	not available		not available
Reading Recovery	$1,104,000	$1,554,000	$1,197,000	$1,027,500	$1,072,500		$441,496
OELI*	$1,662,335	$1,724,220	$1,706,603	$1,776,104	$2,177,005		$3,091,060
TOTAL	$3,362,817	$3,383,220	$3,080,603	$2,986,604	$3,249,505		$3,532,556
# of Reading Recovery schools	140	173	126	103	113		133
# of OELI schools	142	131	76	79	87		78
# of schools	282	304	202	182	200		211
Est. # of students served	9,685	19,396	10,860	14,487	not available		not available

* Data for 2002-2003 were not available
** Other Early Literacy Intervention

1997-1998

The first study completed by CEEP, titled "Indiana's Early Literacy Intervention Impact Study for 1997-1998," reported that $1.7 million went to Reading Recovery, training 184 teachers and 10 new Reading Recovery teacher trainers (teacher leaders) in 70 corporations. Funds directly benefited 140 schools. Also, 54 school corporations received funding for a total of 63 Other Early Literacy Intervention (OELI) projects, including Four Blocks, Success for All, and others. Almost all school corporations that

applied for grants were funded for at least half of the proposal budget. In all, an estimated 9,685 students were served by ELIGP in 1997-1998. The total amount spent in direct intervention funding was $2,766,335.

1998-1999

The following year witnessed an increase in funding, with $3,383,220 in grants awarded to schools and corporations (source: “Indiana’s Early Literacy Intervention Impact Study for 1998-1999”). Purdue University received $105,000 of those funds for instruction of 10 Reading Recovery trainers (teacher leaders) in seven corporations. In addition, $1,554,000 went toward Reading Recovery programs in 79 corporations and 173 schools. In all, an estimated 2,296 students were served by Reading Recovery in 1998-1999 through the support of ELIGP grant funds. The cost was estimated at approximately $677 per student. Also, OELI programs were supported in 131 schools, with $1,724,220 in grants. Approximately 19,396 students were served with these grants, at a cost of around $89 per student.

1999-2000

In the 1999-2000 year, $3,080,603 in ELIGP funds was distributed (source: “Indiana’s Early Literacy Intervention Impact Study for 1999-2000”). Purdue University received $177,000 of those funds for the instruction of three Reading Recovery trainers (teacher leaders) serving in three corporations. This cost, for training new Reading Recovery teacher leaders, includes replacement salaries (up to $35,000) and living expenses for trainees in addition to direct training costs. The bulk of Reading Recovery funds, $1,197,000, supported Reading Recovery programs in 61 corporations and 126 schools. An estimated 1,823 students received Reading Recovery through the support of the ELIGP program, at a cost of approximately $657 per student. OELI programs were supported in 76 schools with $1,706,603 in ELIGP grants, serving approximately 10,860 students.

1997-2000 Funding

The distribution of funding across intervention types during this first three years of ELIGP funding was among data presented in a 2001 report titled "Indiana's Early Literacy Intervention Grant Program Budget Report 1997-2000." According to the report, the percent of funds allotted to Reading Recovery projects increased from 1997-1998 to 1998-1999 and then decreased from 1998-1999 to 1999-2000. The opposite trend was found for OELI projects. The percent of total funding allocated to OELI projects decreased from 1997-1998 and then increased from 1998-2000.

2000-2001

In 2000-2001, $2,986,604 in ELIGP funds was awarded for literacy interventions (source: "Indiana's Early Intervention Grant Program Impact Study for 2000-2001"). Of those funds, $183,000 was awarded to Purdue University for training of three Reading Recovery trainers (teacher leaders) to serve in three school corporations. A total of $1,027,500 was granted to support Reading Recovery interventions in 53 corporations and 103 schools. The estimated number of students served by Reading Recovery teachers funded by ELIGP in 2000-2001 was 1,816. Therefore, excluding funding for Reading Recovery trainers, the state cost for Reading Recovery was approximately $566 per student that year. Other OELI projects were granted $1,776,104, with those funds going to 79 schools within 52 corporations and serving an estimated 12,671 students. The cost for these interventions was approximately $140 per student.

2001-2002

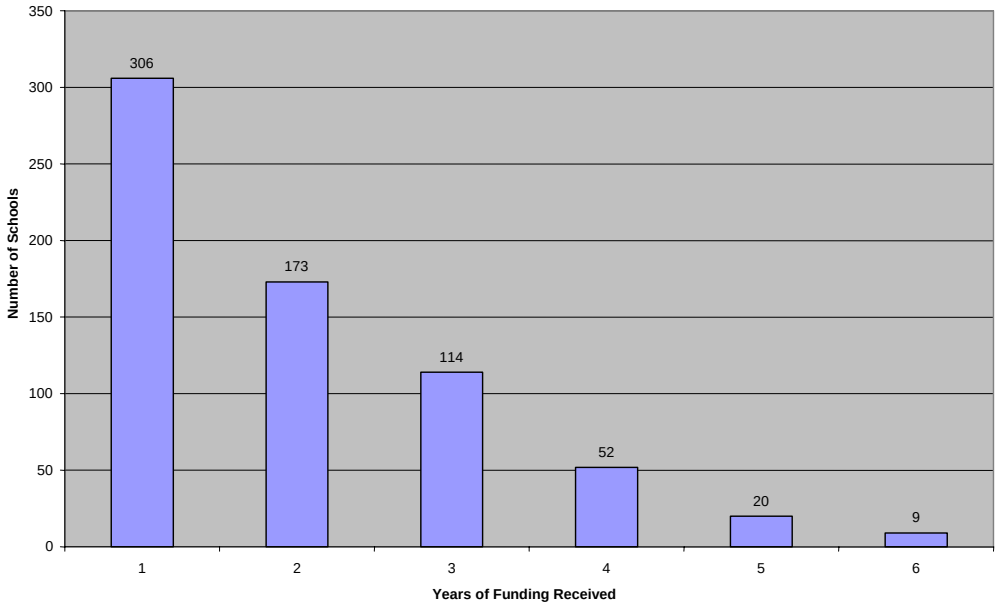
ELIGP grant funds in 2001-2002 totaled $3,249,505 (source: "Indiana's Early Intervention Grant Program Impact Study for 2001-2002"). Of these funds, $1,072,500 supported Reading Recovery interventions in 61 corporations and 113 schools. The remaining $2,177,005 supported other interventions (OELIs) in 87 schools within 49 Indiana school corporations.

2002-2003/2003-2004

Reliable funding information for 2002-2003 was not available from IDOE, and therefore is not included in this report. In 2003-2004, a total of $3,532,556 in grants was awarded. Of those funds, $441,496 was allotted to Reading Recovery programs at 133 schools, and $3,091,060 supported OELI programs at 78 schools.

Table 3 reports the number of grants received by schools across seven years of available data. As shown, a total of 674 different schools were funded between 1997 and 2004 (excluding 2002-2003), and slightly more than one half (55 percent) of participating schools received more than one year of funding.

TABLE 3. Table 3: Number of Grants Received per School Participating in ELIGP Funding 1997-2004.



Impact on Classroom Instruction

Because the design of the evaluation studies has often included a comprehensive analysis of both comparison schools and grant schools, the data allow inferences regarding the general literacy environment found throughout the state, as well as the impact of grant funding. This section, based primarily on studies comparing funded and comparison schools, discusses how the grant appears to effect change within schools. The focus in this section is on programmatic changes that appear related to grant funding, as opposed to student outcomes, which are addressed in subsequent sections. The section first discusses the overall status of literacy education as found in the studies, and then focuses on how the grant schools differed from comparison schools.

Climate of Literacy Instruction in Indiana Schools

Since the first data were collected, CEEP reports have noted aspects of grant initiatives that appear to be consistent with the prevailing climate of literacy instruction in Indiana schools. The 1997-1998 report found that elementary schools in the state used a balanced approach to early reading and literacy, in terms of organization, instruction, and classroom philosophy. That report did not find initiative features to be drastic departures from what schools were already attempting to provide, but concluded that the new interventions were implemented in a state-wide context of instruction that was largely consistent with the interventions. For example, Indiana schools in both ELIGP and comparison groups typically used independent reading and small groups as daily strategies for teaching early reading. The small groups were found to allow for systematic instruction, while independent reading promoted individual student interests and accommodated diverse learning styles. Phonics and reading drills as well as creative writing and emergent spelling were common as well. These findings were taken to demonstrate that both systematic and holistic philosophies and approaches were being used in the Indiana schools studied. Other features that were valued in both funded and non-funded Grade 1-3 classrooms included trade books, a holistic literature-rich

approach, basal readers and Big Books, and systematic student performance evaluation.

Likewise, the 2000-2001 report noted that many Reading Recovery strategies were used frequently or very frequently by teachers in all types of schools, whether grant-funded or not. This was interpreted as evidence of a high degree of congruence between Reading Recovery methods and strategies used by regular classroom teachers.

Features of Funded ELIGP Interventions

Thus, while the instructional approaches of successful ELIGP interventions may not be radically different from those already found in Indiana schools, the data have enabled us to identify where funded and non-funded schools differ with respect to specific features and program emphasis. CEEP reports have been able to identify the extent to which individual features vary among interventions and comparison schools, as described below.

The 1997-1998 report found that the greatest change seen within ELIGP-funded schools was an increase in the use of systematic formative evaluation, trade books, emergent spelling, creative writing, drama, and paired reading. The report concluded, in part, that the funding led to an emphasis on ongoing evaluation of the progress of each student and individualizing of the curriculum. Among other findings, the 1997-1998 study reported that ELIGP schools were more likely than comparison schools to organize their classrooms with alternatives to whole class instruction, including ability grouping, child-initiated learning centers, one-on-one tutoring, pullout instruction, small group interaction, and cooperative learning. ELIGP schools reported more frequent use of trade books, Big Books, basal readers, systematic formative evaluation (e.g., performance assessment such as portfolios or running records), phonics, reading drills, creative writing, and drama.

The 1998-1999 report found that frequency of instructional features was relatively similar between comparison and ELIGP schools. A notable exception included a finding that creative/essay writing was used more frequently in OELI schools than in comparison schools. Also, OELI schools reported that they were less likely to use worksheets/workbooks components than comparison schools. That report suggested that greater reliance on worksheets could possibly be explained by the capacity to use such sheets without training in literacy methods such as those in the grant program.

The 1998-1999 report also examined the degree to which participants' philosophies of their early literacy program leaned toward holistic and reductionist or skills-based approaches (Student-Directed versus Teacher-Directed Instruction, Prescribed Systematic versus Child-Centered/Developmental Curriculum, Code/Phoneme Emphasized versus Meaning/Comprehension, and Code/Phoneme Taught Within versus Outside of Context). While, as reported above, schools were likely to include a balanced approach to literacy instruction, OELI schools were found to be more Student-Directed and to have more Child-Centered/Developmental curricula than comparison schools. As an example, OELI schools reported a significantly greater use of learning centers than did comparison schools. This type of child-initiated means of instruction allows for individualized instruction reflecting student choice and engagement. Therefore, ELIGP funding appears to be related to increased use of child-centered instruction occurring in a natural, rather than isolated, context.

The 1999-2000 report revealed that the ELIGP funding resulted in more time spent in activities where students were either reading independently or to a partner than occurred in comparison schools. Students were also more likely to be engaged in creative/essay writing and less likely to use workbooks or worksheets. Again, ELIGP-funded schools reported greater increases in the frequency of the creative/essay writing component, as well as emergent spelling and reading drills, than comparison schools. ELIGP schools also had classroom organizational structures that foster more individualized and intensive instruction including ability grouping, small groups, child-initiated learning centers, and cooperative learning.

The 2000-2001 report identified three areas which were more prevalent among Reading Recovery programs than other schools. First, pull-out instruction was found most frequently in Reading Recovery schools, which is not a surprising finding, given that this is a core feature of the program. Ongoing written observations were found more frequently in schools with Reading Recovery than other schools. Finally, reading specialists were most likely to be employed in Reading Recovery schools. Reading Recovery teachers were found in 69% of all classrooms in Reading Recovery schools and, similarly, 66% of classrooms in OELI schools had Reading Recovery teachers. In contrast, only 36% of classrooms in comparison schools had Reading Recovery teachers. The fact that findings did not demonstrate extreme departures from instructional norms at Reading Recovery schools was in line with consistent findings across study years. As in earlier studies, the 2001 report concluded that features associated with Reading Recovery were common in other reforms and in regular Grade 1 classrooms and that there is "a high degree of compatibility between the features of Reading Recovery and the Day-to-day practices of Grade 1 teachers in Indiana elementary schools" (p. 50). This evident compatibility between the features of Reading Recovery and the practices of regular Indiana elementary teachers was interpreted to indicate "a high degree of consonance in the structure and practice of reading and language arts instruction across elementary schools in Indiana" (p. 36). Therefore, it appears to be the amount of attention placed on various aspects of literacy instruction among ELIGP programs that may contribute to their apparent success, rather than the novelty of those program features.

Professional Development and Collaboration

One common finding in previous reports regards increased levels of professional development in funded schools. The 1997-1998 report found that ELIGP schools had a higher level of expertise available than comparison schools. Both Reading Recovery and OELI schools were more likely to have certified specialists as teachers or to pro-

vide training to other teachers. In addition, both Reading Recovery and OELI program participants reported greater opportunities for networking and collaboration than comparison schools. The finding that professional development was used more extensively in ELIGP than comparison schools was considered evidence that the grant funding made that outcome possible.

Again, in 1998-1999, a CEEP report found that a greater percentage of funded schools than comparison schools reported an increase in professional development features in terms of increases in certified training and specialists, in-service workshops, and opportunities for networking and collaboration.

Findings were replicated in the 1999-2000 report, which found that funded schools reported significantly more professional development than did comparison schools. OELI schools reported a greater frequency of literacy related in-service workshops than comparison schools. Both Reading Recovery and OELI schools reported a greater use of certified specialists and the opportunity for networking and collaboration among professionals than comparison schools.

In addition to increased professional development and collaboration opportunities apparently made possible by ELIGP funds, some evidence was found that participating in the program itself was associated with increased levels of collaboration among teaching faculty. The 2001-2002 report found that although Four Blocks does not include a specific emphasis on professional development, those schools implementing that program had higher levels of collaboration than comparison schools (though less than other funded schools). The report concluded that the emphasis on professional development in the IDOE grant process may help explain the generally higher levels of collaboration found in funded versus comparison schools. It would appear that simply participating in the ELIGP grant is associated with increased levels of collaboration, whether or not a given funded school's literacy intervention emphasizes collaboration.

Parental Involvement

Parent involvement is often mentioned as an important part of education reform and increasing student achievement. In general, ELIGP findings support that the program was associated with increases in certain types of parent involvement. In 1997-1998, ELIGP schools reported a greater degree of parent involvement in their programs than comparison schools. Reading Recovery and OELI schools were more likely to distribute books to households with a low number of reading materials, include literacy instruction for parents, have parent/child reading programs, and utilize parent volunteers more frequently. The 1997-1998 report concluded that "ELIGP funding is serving to support parent involvement in school programs and maximizing student learning potential by supporting literacy practices at home" (p. v). The 1998-1999 report found four aspects of parent involvement that were indicated to increase significantly in ELIGP schools compared with comparison schools: book distribution, family literacy instruction, paired reading (parent/child), and parent/teacher conferences. Results for the following year (1999-2000) also demonstrated a significantly greater use of book distribution, family literacy instruction, and paired reading (parent/child) in OELI than comparison schools. In contrast to the prior year, that 1999-2000 study found higher levels of parent volunteers among comparison schools than funded schools. Thus, ELIGP funding appears to be consistently associated with several features of parent/family involvement including distribution of books to student households, instruction addressing literacy needs of the entire family, and promotion of parent/child reading. Findings regarding the use of parent volunteers in ELIGP schools were inconsistent and may be an area for future research.

Student Outcomes - Retention

Retention rates—the percentage of students retained at current grade level—have been used in CEEP studies as a measure of school performance. As noted in the 1997-1998 report, "Researchers have viewed such measures as concrete indicators of whether a

child has performed acceptably (Bronfenbrenner, 1979)" (p. 82). While retention may reflect a number of student characteristics (i.e., social immaturity, adjustment difficulties), most children are retained for academic failure. Thus, retention can also be an indicator of the inflexibility of the instructional environment and instructional intolerance to individual student differences. A reduction in grade retention has been used in CEEP studies as one potential indicator that ELIGP-funded programs contribute to positive literacy outcomes for students at risk. Retention is the worst intervention for academic problems and rarely suitable for children struggling in school (Darling-Hammond, 1998).

ELIGP data collected by CEEP have consistently provided at least marginal support that funding is associated with reduced retention, although findings have often failed to meet statistical requirements for significance. The 1997-1998 report concluded that funded schools appeared generally less likely to retain students than comparison schools, although the difference did not reach statistical significance. Reading Recovery schools were found to have higher retention rates than comparison schools, while OELI schools had lower retention rates than comparison schools. These findings could reflect actual differences between the schools, but they could represent findings attributable to chance, since statistical significance was not reached.

A study reporting on retention rates for three years, 1998-2000, found that OELI schools' retention rates decreased across those years, although again, those rates did not vary to a degree that was statistically significant. Retention rates in Reading Recovery schools increased in 1998-1999, as reported above, but were found to be relatively stable in the 1999-2000 report.

The 2000-2001 report found lower grade-level retention rates in Reading Recovery-funded schools than in comparison schools with comparable poverty levels. Schools with Reading Recovery funding retained 1.14% of their students, compared to 1.37% in comparison schools. Most OELI (class-wide) intervention models also resulted in lower rates of retention, even more substantial than Reading Recovery findings. Those

Grade 1-3 programs had lower retention rates (1.06%) than either comparison schools (1.37%) or Reading Recovery-funded schools (1.14%).

The 2001-2002 report found the average retention rate for all ELIGP-funded schools to be .83%, compared to a higher retention rate (1.27%) for comparison schools. Mean retention in Reading Recovery schools was .57%, compared to 1.27% in comparison schools. The difference was most pronounced in the highest poverty quartile, .65% (Reading Recovery) vs. 2.96% (comparison), as discussed in a following section of this report.

A further breakdown of the specific programs in 2001-2002 found that all interventions except the Waterford program were associated with lower retention rates than comparison schools. In particular, the Reading Recovery and Four Blocks interventions were pointed out as having substantially lower retention rates. When controlling for poverty levels of schools, as found in the prior year, within the quartile of schools with the highest poverty-level, Reading Recovery schools had significantly lower retention rates (.65%) than comparison schools (2.97%). However, in contrast to the previous year, 2001-2002 OELIs in the highest poverty schools had a substantially higher average retention rate (4.39%) than both comparison schools and schools with Reading Recovery interventions. Among schools in the upper-middle quartile (50th to 75th percentile) of poverty, comparison schools' retention rates (.54%) were higher than OELI schools (.47%), but lower than Reading Recovery schools (.83%). That same 2001-2002 report found that retention rates for OELI schools were lower than comparison schools' retention rates in all but the highest poverty quartile. This finding, that more retention occurred in high-poverty OELI schools vs. comparison schools, was considered a cause for some concern.

While year-to-year differences in programs assessed and methodologies used make a single, definitive conclusion impossible, reports regarding retention have been relatively consistent across years. Reports have generally concluded that ELIGP funding was asso-

ciated with lower retention rates. And, Reading Recovery appears to have the strongest relationship with reduced retention in those schools with highest poverty levels.

Student Outcomes - Special Education Referrals

As noted in the 1998 report, researchers in special education have theorized that the rate of referral to special education assessment and eventual identification is a consequence of the "instructional tolerance" of a school (Gerber, 1988; Gerber & Semmel, 1984). The theory reflects the legitimate constraints placed on a teacher given the number of students, heterogeneity of student ability, amount of instructional time, expertise, and resources. Often, realizing that limited time, expertise, or resources are available to help students at risk for reading failure, teachers refer students for special education assessment. Based on this rationale, two prior reports examined the relationship between grant initiatives and rates of special education referrals in ELIGP-funded and comparison schools.

The early CEEP reports examined referral rates as a variable among funded and comparison schools, although those comparisons were not done in the most recent analyses. In the 1997-1998 report, CEEP found that OELI programs had significantly lower rates of referral for special education assessment than comparison schools. No statistically significant differences were found between Reading Recovery and comparison schools. That report noted that this difference may be accounted for in part by the fact that OELI programs tend to focus on a broader range of students within the general education classroom, whereas Reading Recovery is an individualized pullout instructional strategy and serves fewer students but with more depth.

A follow-up analysis was included in the 2000 report, "Progress in Early Literacy: Summary Evaluation of Indiana's Early Literacy Intervention Grant Program 1997-98 through 1999-2000 School Year." In that analysis of data for the first three years of the program, trends for reported referral rates were found to be relatively flat for both

funded and comparison schools. While comparison schools tended to report higher referral rates across all three years, the differences were small and not statistically significant. The report also concluded that because the ELIGP funds target those schools with high needs for external support and those with elevated literacy needs, the full impact of the funding might not be seen in short-term studies, but continued monitoring was key to understanding the impact of the program on schools.

Thus, while descriptive data provide some support for the hypothesis that OELI funding would be associated with lower rates of special education referral, statistical tests of significance have been inconclusive. This measure of class-wide referrals may not be as appropriate for Reading Recovery programs as OELI programs, since Reading Recovery is primarily a one-on-one program that provides intensive instruction to only a few students per class.

Student Outcomes - Achievement

CEEP reports in 2000-2001 and 2001-2002 addressed the relationship between grant initiatives and ISTEP+ scores. This section summarizes those findings and additional results from a study using alternative achievement scores, all of which appear to provide moderate evidence of achievement gains among ELIGP-funded schools.

Two major methods of analyses have been used to examine the relationship between ELIGP interventions and ISTEP+ passing rates. In some analyses, passing rates have been directly compared across funded and non-funded schools. The 2000 “Progress in Early Literacy: Summary Evaluation of Indiana's Early Literacy Intervention Grant Program 1997-98 through 1999-00 School Year” compared the impact of four of the major ELIGP programs—Reading Recovery, Success for All, Literacy Collaborative, and Four Blocks—with comparison schools. The percentage of students passing reading achievement tests in Grade 3 was the outcome of interest. In this analysis, significant effects were not seen for Reading Recovery or Success for All. However, schools with Literacy Collaborative and Four Blocks both demonstrated significantly higher

ISTEP+ reading test pass rates than comparison schools. Moderate effects (between .5 and .7) were seen for Literacy Collaborative, and small effects (between .02 and .04) were seen for Four Blocks.

The 2000-2001 report found that high-poverty schools with Reading Recovery had 47.97% of their students pass the ISTEP+ Grade 3 test, compared to a 45.06% pass rate for high-poverty comparison schools. Overall, OELI schools had the highest pass rates, with 64.92% pass rate in OELI schools with Grade 1-3 interventions, compared to 59.80% in Reading Recovery schools, and 62.91% in comparison schools.

A subsequent report, in 2001-2002, found that at the start of the interventions, comparison schools had a higher average percent pass rate (64.98%) on Grade 3 ISTEP+ language arts tests than did the group of schools receiving ELIGP funding (63.87%). They continued to have higher scores following that year's intervention, but the effect size of d = .02 suggested less of a difference between the two sets of scores than prior to the intervention. Schools with four ELIGP interventions (Four Blocks [75.17%], Early Success [80.67%], Literacy Collaborative [71.73%], and Waterford [76.06%]) had higher mean pass rates than the 70.58% rate found in the comparison schools. Reading Recovery and “other” early interventions were found to have passing rates of 68.77% and 68.95%, respectively. That report pointed out that fall ISTEP+ language arts pass rates for Grade 3 tests may not be as strong an indicator of the effects of ELIGP funding as retention rates because the tests are administered at the beginning of the academic year in Grade 3, therefore the students may not yet have received the ELIGP-funded services when the test is taken. Still, the data were sufficient for that report to conclude that “EIGP [sic] funding of interventions is associated with higher pass rates relative to comparison schools, especially in EIGP [sic] funded schools with highest need” (p. 17).

In an alternate method of analysis, regression techniques have been used to assess which school and intervention characteristics are associated with elevated ISTEP+ pass rates. A 2000 study reported on ISTEP+ scores for the students in funded and

comparison schools from the first three years of the project. Two separate ordinary least squares (OLS) regression analyses were conducted to estimate the influence of funding type and of intervention type on ISTEP+ English/Language Arts passing rates within ELIGP and comparison schools. “Funding type” refers to which ELIGP-funded literacy intervention was implemented by each school. Because not all literacy interventions being used in schools are funded by ELIGP (for example, some schools implement Reading Recovery independent of ELIGP funding), a separate analysis was conducted using “intervention type” found within each school, regardless of funding source. In the first analysis, a model containing variables representing school characteristics, funding type, and literacy program features was found to explain 62.8% of variance in school passing rates. Three school characteristics were significant predictors of ISTEP+ passing rates among schools. Having high average ISTEP+ scores was associated with higher passing rates. Having a high percentage of poor students or minorities was associated with lower passing rates. And, one intervention variable was significant: having funding for Reading Recovery was negatively associated with high passing rates. However, in the second regression analysis, which considered “intervention type” rather than “funding type,” having a Reading Recovery program failed to be a significant predictor of ISTEP+ passing rate. These findings were interpreted to support a view that Reading Recovery programs may be less effective in the first year of implementation than in following years, due to teacher training and learning curves. And, given this perspective, the findings of elevated ISTEP+ pass rates among students in the highest poverty schools were considered especially encouraging.

Finally, a 2000 study assessed achievement gains among 618 students in two Indiana elementary schools that had received ELIGP funds. Pre- and post-tests using the Basic Academic Skills Samples (BASS) methodology were used to assess changes in basic literacy skill development. At “Elm Creek” Elementary (pseudonym), which expanded Reading Recovery and implemented Grade 2 Literacy Groups with grant funds, gains were seen both for Grade 1 and Grade 2 students in reading and writing. At “Sycamore Heights” Elementary (pseudonym), which implemented First Steps,

mean gains were found for Grade 1, Grade 2, and Grade 3 students on both reading and writing, and were strongest among the Grade 3 group. While acknowledging limitations to the study, including a lack of a control group, the report presented evidence to suggest that the most impact was on students' writing fluency, and that the focus on reading at Elm Creek led to the greatest impact on reading skills, while at Sycamore Heights, where the focus was on writing instruction, writing fluency benefited most.

Comparing Programs

While the primary purpose of the annual studies has been to assess the overall grant program rather than to compare different literacy approaches, the wealth of data gathered has provided valuable information on various literacy programs chosen and developed by grant recipients. CEEP reports have presented three types of comparative data: a) descriptive information on various literacy models and interventions as intended, b) frequency of instructional features as implemented, and c) statistical analysis comparing programs on given outcome criteria.

Programs as Intended

Two CEEP publications have been prepared with the specific objective of helping educators and administrators select programs based on each school's individual characteristics and planning assessment initiatives. "Improving Early Reading and Literacy: A Guide for Developing Research-Based Programs," published in December 1999, provided easy-to-read overviews of early reading and literacy intervention methods and programs. A framework for comparing interventions was developed for that publication and used as the model for assessing and comparing program components in all subsequent CEEP evaluations. This model considers literacy outcomes of an intervention to be the result of a combination of the following: a) existing school theories, b) professional development features of the intervention, c) implemented philosophy of the intervention, d) parent involvement features of the intervention, e) classroom

instruction features of the intervention, and f) organizational/structural features of the intervention. This model has been the framework for all studies synthesized in the current report.

A second resource guide, "Improving Early Reading: A Resource Guide for Elementary Schools" was published by CEEP in February 2002. Drawing again from the CEEP framework for comparing early reading and literacy interventions, this report provides background on reading reforms and interventions, compares program features of 14 such programs, and offers suggestions for assessing early reading programs. Readers are directed to these guides for thorough descriptions and analyses of early literacy models, and for comparisons of programs as they are intended to be implemented.

Programs as Implemented

Although the publications discussed above allow for descriptive comparison of intervention programs, statistical analyses provide more direct comparison of outcomes associated with adoption of such programs by Indiana schools. Surveys of teachers and principals have allowed CEEP to assess what characterizes actual implementation of the various models.

Table 4 below presents the instructional features reported to be used most frequently by teachers in ELIGP-funded schools. The seven most common ELIGP interventions are included, with remaining interventions making up the "Other" category. Except for the "Other" category, the table presents features that were reported as being used more frequently in that intervention than in other ELIGP or comparison schools in either the 2000-2001 or 2001-2002 study. Because interventions in the "Other" category varied between the two report periods, only features which were reported both in 2000-2001 and 2001-2002 are included for that group.

TABLE 4. Table 4: Features frequently used by teachers in common ELIGP interventions, compared with other-funded and comparison schools (based on 2000-2002 data).

Reading Recovery	• Pullout Instruction • Paired Reading • Written Observations • Reading Specialists
Four Blocks	• One-on-one Tutorials • Ongoing Written Observations • Trade Books • Cooperative Learning • Paired Reading (Classroom) • Paired Reading (Classroom) • Emergent Spelling • Basal Readers • Phonemic Awareness • Pattern Discrimination • Multi-Sensory Phonics Activities
Waterford	• Independent Reading • Pull-out Instruction • Ongoing Written Observations • Paired Reading (Classroom) • Book Distribution • Take-home Reading Activities (nearly as often as comparison schools) • Pattern Discrimination • Multi-Sensory Phonics Activities
Literacy Collaborative	• Independent Reading • Pullout Instruction • Small Groups, Teacher Directed • Ongoing Written Evaluations • Trade Books • Creative Writing/Essays • Collaborative Teacher Planning • Reading Specialist • Book Distribution • Child Centered/Developmental

TABLE 4. Table 4: Features frequently used by teachers in common ELIGP interventions, compared with other-funded and comparison schools (based on 2000-2002 data).

Early Success	• Basal Readers (nearly as often as comparison schools) • Independent Reading • Systematic, Formative Evaluation • Ongoing Written Observations • Paired Reading (Classroom and Parent) • Phonemic Awareness • Teacher Directed • Balanced Approach to Phoneme Instruction • Basal Readers • Small Groups, Teacher Directed • Emergent Spelling • Reading Aloud • Paired Reading
Success for All	• Ability Grouping • Basal Readers • Cooperative Learning • Ongoing Written Observations • Paired Reading (Classroom and Parent) • Systematic Formative Evaluation • Reading Drills • Worksheets/Workbooks
First Steps	• Independent Reading • Small Groups, Teacher Directed • Trade Books • Creative Writing/Essays • Emergent Spelling • Paired Reading (Classroom and Parent) • Parent Communication • Reading Aloud • Child Centered/Development
Other	• Independent Reading • One-on-One Tutorial • Small Groups, Teacher Directed • Ongoing Written Observations • Creative Writing/Essays • Paired Reading

In addition to pointing out features that discriminate funded interventions from each other, Table 4 serves to demonstrate one of the points frequently mentioned in CEEP reports-Reading Recovery programs do not necessarily include a great deal of unique

features compared with other interventions. Rather, that program, to some degree, may represent a balance of approaches common to comparison schools, but enhanced through one-to-one instruction and teacher training.

Program Outcomes

Because the primary purpose of the CEEP involvement in ELIGP funding has been to evaluate overall success of the program and to promote decisions and assessment at the school level, the degree to which prior studies have attempted to compare outcomes associated with particular programs or intervention features is limited. Comparing the success of specific programs across the life of the ELIGP program is complex, due to the number of variables involved, changes in the makeup of interventions each year, and various possible methods of defining and measuring success. However, taken together, findings shed light on which types of programs may be best suited for use in Indiana schools. This section summarizes select findings from prior CEEP reports attempting to compare outcomes of various ELIGP interventions, and concludes with a summary table of all CEEP findings on three student outcomes studied since 1997: special education referral rates, grade retention rates, and ISTEP+ pass rates.

First, some comment on general approaches predictive of positive student outcomes is warranted. As noted previously in this report, CEEP findings have consistently cited advantages of balanced literacy approaches. For example, findings from the 2000 report on the first three years of the program suggest that schools should seek a balance between explicit and holistic approaches to early reading. Explicit approaches were positively associated with higher passing rates on achievement tests but also appeared to be associated with higher grade retention rates. In contrast, holistic approaches were negatively associated with retention rates, indicating that they were successful in moving students toward academic progress. That report concluded that

when selecting or designing an intervention, planning teams should “consider how the intervention would enable them to build an appropriate balance.”

The first CEEP report attempting to summarize ELIGP data across several collection points was a 2000 report titled “Progress in Early Literacy: Summary Evaluation of Indiana's Early Literacy Intervention Grant Program 1997-98 through 1999-00 School Year.” That study compared Grade 3 student reading achievement tests for comparison schools and four of the major ELIGP programs: Reading Recovery, Success for All, Literacy Collaborative, and Four Blocks. Literacy Collaborative had moderate effects (between .5 and .7). Four Blocks had a small effect (between .02 and .04). Neither Reading Recovery nor Success for All had significant effects. Interpreted, schools with Literacy Collaborative and Four Blocks both had significantly higher passing rates on the ISTEP+ reading test than comparison schools, while neither Reading Recovery nor Success for All appeared to show similar elevated levels of passing rates. However, because poverty has been identified as a variable associated with literacy outcomes, it was controlled for in two additional analyses. First, results were generated for high-poverty and low-poverty schools separately. Findings showed that effect sizes were found for all four programs in the high-poverty school group. Therefore, results in this section should be tempered by an understanding that additional variables, such as poverty, may mediate results.

In that 2000 study, when a regression analysis controlled for pre-funding ISTEP+ scores and percent of minority students, Success for All and Literacy Collaborative were associated with lower special education referrals, and Four Blocks was associated with higher special education referrals. Reading Recovery and Success for All were both associated with lower grade retention. The report concluded that these data provided stronger support for Literacy Collaborative, Success for All, and Reading Recovery than for Four Blocks. Further findings with regard to poverty level are discussed in a separate section of this report.

The 2000-2001 report concluded that most of the intervention models resulted in lower rates of retention and/or higher ISTEP+ pass rates in language arts. Interventions consistent with this pattern included Reading Recovery, Literacy Collaborative, Four Blocks, First Steps, and Early Success. While these programs varied in their features and implementation, they all showed substantial signs of success. Success for All was found to be inconsistent in implementation and outcomes. The report also referred to literature suggesting a substantial start-up time for that program, leaving it to appear less advantageous than other programs evaluated.

The 2001-2002 report found that too few schools used Success for All to be considered a separate category. For other models mentioned in 2001-Literacy Collaborative, Four Blocks, First Steps, and Early Success-consistent patterns of implementation and generally favorable outcomes were seen. That is, most of the interventions resulted in lower rates of retention and/or higher Grade 3 ISTEP+ pass rates, even though they differed in their patterns of practice in terms of organizational and instructional features. Two findings pointed out as areas to be watched included implementation within Literacy Collaborative programs and Waterford Early Reading schools, which appeared to be less consistent than other OELI programs examined, and retention rates in Waterford Early Reading schools. But, that report concluded that "In Indiana, Reading Recovery, Literacy Collaborative, Four Blocks, Early Success, and Waterford were generally associated with improved outcomes and merit further implementation" (p. 76). In the 2001-2002 site visits, the Waterford Early Reading program received mixed reviews. Overall, teachers and students found the program enjoyable and teachers agreed that it enhanced reading in the classroom. Concerns included maintenance expenses, the possibility of distraction, and difficulty of monitoring student computer use.

In addition to examining success of the most common ELIGP interventions, CEEP reports have also addressed success rates of those interventions classified as "other" models, models that were not identified in a list of known interventions and/or were developed locally by those schools. Results from the 2000-2001 and 2001-2002

reports were somewhat discrepant, possibly due in part to the inclusion of a different set of interventions in that category in the second year. The 2000-2001 report concluded that the "other" interventions tended to include features that demonstrated a balance between independent, child-centered approaches and more systematic aspects. These schools cited emphasis on one feature—Code/Phonemes Taught Within Context—more heavily than did teachers in other types of schools. The report interpreted this as indicating a literature-rich environment, but with direct phonics deeply integrated into day-to-day practices. These schools were less likely to report higher or lower referral or retention rates compared with comparison schools, most likely because they were already high-performing schools, and "appear to be schools with good records in reading performance that are making an effort to get even better" (p. 95).

The 2001-2002 report also looked at the locally-developed "other" programs. In contrast to 2000-2001, this year these models were not associated with appreciably better outcomes than comparison schools. A possible explanation was that the schools choosing these programs in 2001-2002 were not already high-performing schools compared to the 2000-2001 group. The 2002 report said that this group "struggled to produce appreciable student benefits." The recommendation was that locally designed intervention funding decisions should be considered carefully. The decisions should be based on each school's previous level of success with literacy reform, and implementing research-based strategies may be preferable.

Finally, Tables 5-8 summarize findings as reported in eight 1997-2002 CEEP studies comparing ELIGP and comparison schools. Three outcomes were included in those studies: special education referral rates, grade retention rates, and ISTEP+ pass rates. Literacy programs assessed, outcomes of interest, and specific methods of analysis varied by year. These findings are not meant to substitute for time series or experimental methodologies, which could provide the most definitive conclusions regarding the effectiveness of individual programs. Because pre-intervention levels were not available in most cases, actual change within schools cannot be assessed, and therefore

conclusions for any given year should be viewed with prudence. Taken together, the cumulative results provide evidence supporting the performance of individual literacy programs funded by ELIGP. Readers are directed to the specific reports for further details of methodologies and findings within each study.

In Tables 5-8, “NA” indicates that the report did not include analysis results for that outcome and group, and “NS” indicates that the group was included in analysis for that outcome, but statistical significance was not reached. Levels of statistical significance were .05, unless otherwise noted. In some cases, mean differences were presented but no statistical tests were performed, as indicated by “no statistical test of significance performed.”

Table 5 presents results for those analyses which pooled all ELIGP-funded programs and presented findings which compared that group with non-funded comparison schools. In some cases these analyses crossed over several years of data, whereas other analyses were limited to a single year of data.

TABLE 5. Table 5. Results for ELIGP-Funded Programs Across Eight CEEP Evaluation Studies

Program	Referral Rates	Retention Rates	Achievement
All ELIGP Schools	*97-98 NA* 98-99 Funded schools receiving 2 years of funds had lower referral rates than those with 1 year of funding. 99-00 NS trends seen across 3 years *97-00 (1) NA* *97-00 (2) NA* *97-00 (3) NA* *00-01 NA* *01-02 NA*	*97-98 NA* 98-99 Funded schools receiving 2 years of funds had lower retention rates than those with 1 year of funding 99-00 Funded schools receiving 3 years of funding had lower retention rates than comparison schools in 1998 and 1999, but not in 2000 *97-00 (1) NA* *97-00 (2) NA* *97-00 (3) NA* 00-01 Funded schools had lower retention rates than comparison schools 01-02 Funded schools had lower retention rates than comparison schools	*97-98 NA* *98-99 NA* *99-00 NA* *97-00 (1) NA* *97-00 (2) NA* *97-00 (3) NA* 00-01 Funded schools had lower ISTEP+ pass rates than comparison schools, no statistical test of significance performed. Among highest poverty quartile schools, funded schools had higher ISTEP+ pass rates than comparison schools, no statistical test of significance performed 01-02 Funded schools had lower ISTEP+ pass rates than comparison schools; they also had lower rates before the funding, and the effect size for the difference between the groups was smaller after funding year

Table 6 presents results for ELIGP-funded Reading Recovery programs from previous CEEP studies. Types of analysis included in those studies include comparison of means and regression procedures on special education referrals, grade retention, and ISTEP+ pass rates.

TABLE 6. Table 6. Results for ELIGP-Funded Reading Recovery Programs Across Eight CEEP Evaluation Studies.

Program	Referral Rates	Retention Rates	Achievement
Reading Recovery	97-98 NS difference with comparison schools	97-98 NS difference with comparison schools	*97-98 NA*
	98-99 NS difference with comparison schools	98-99 NS difference with comparison schools	*98-99 NA*
	99-00 NS difference with comparison schools	99-00 NS difference with comparison schools	*99-00 NA*
	97-00 (1) NS predictor of referrals, in regression analysis	97-00 (1) Predictor of lower retention, in regression analysis	97-00 (1) Predictor of higher ISTEP+ pass rates in high poverty schools
	97-00 (2) Predictor of lower referrals, in regression analysis	97-00 (2) NS predictor, in regression analysis	*97-00 (2) NA*
	97-00 (3) NS predictor of referrals in either the first or second regression analysis	97-00 (3) NS predictor in first regression analysis, predictor of lower retention in second regression analysis	97-00 (3) Predictor of lower ISTEP+ pass rates in first regression analysis, NS predictor in second regression analysis
	00-01 NA	00-01 Lower retention rates than comparison schools, no statistical test of significance performed	00-01 Lower mean ISTEP+ pass rates, no statistical test of significance performed. Among highest poverty quartile, higher mean pass rate than comparison schools, no statistical test of significance performed
	01-02 NA	01-02 Lower retention rates than comparison schools, no statistical test of significance performed. Among highest poverty quartile, lower mean retention than comparison schools, no statistical test of significance performed	01-02 Lower mean ISTEP+ passing rate than comparison schools, no statistical test of significance performed

Table 7 presents results for ELIGP-funded programs other than Reading Recovery, by intervention type. These were determined to be the most common intervention types funded by ELIGP, and were therefore examined individually, rather than in the "OELI" category. This set of programs, drawn out for individual analysis, varied by year. Readers are referred to the original reports for complete details on which programs were included in each analysis.

TABLE 7. Table 7. Results for ELIGP-Funded Programs Across Eight CEEP Evaluation Studies - By Type.

Program	Referral Rates	Retention Rates	Achievement
Success for All	*97-98 NA* *98-99 NA* *99-00 NA* 97-00 (1) Predictor of lower referral rates, in regression analysis 97-00 (2) NS predictor, in regression analysis 97-00 (3) Predictor of lower referral rates, in regression analysis *00-01 NA* *01-02 NA*	*97-98 NA* *98-99 NA* *99-00 NA* 97-00(1) Predictor of lower retention, in regression analysis 97-00 (2) NS predictor, in regression analysis 97-00 (3) Predictor of lower retention (weak.1 level) 00-01 Higher mean retention than comparison schools, no statistical test of significance performed *01-02 NA*	*97-98 NA* *98-99 NA* *99-00 NA* 97-00 (1) Predictor of higher ISTEP+ pass rates in high-poverty schools *97-00 (2) NA* 97-00 (3) NS predictor, in regression analysis 00-01 Lower mean ISTEP+ pass rates, no statistical test of significance performed *01-02 NA*
Literacy Collaborative	*97-98 NA* *98-99 NA* *99-00 NA* 97-00 (1) Predictor of lower referral rates, in regression analysis 97-00 (2) NS predictor of referral rates 97-00 (3) Predictor of lower referral rates, in regression analysis *00-01 NA* *01-02 NA*	*97-98 NA* *98-99 NA* *99-00 NA* 97-00 (1) NS predictor, in regression analysis 97-00 (2) Predictor of lower retention rates 97-00 (3) NS predictor, in regression analysis 00-01 Lower retention rates than comparison schools, no statistical test of significance performed 01-02 lower mean retention than comparison schools, no statistical test of significance performed	*97-98 NA* *98-99 NA* *99-00 NA* 97-00 (1) Predictor of higher ISTEP+ pass rates in both low- and high-poverty schools *97-00 (2) NA* 97-00 (3) NS predictor, in regression analysis 00-01 Higher mean ISTEP pass rate than comparison schools, no statistical test of significance performed 01-02 Higher mean passing rate than comparison schools, no statistical test of significance performed

TABLE 7. Table 7. Results for ELIGP-Funded Programs Across Eight CEEP Evaluation Studies - By Type.

Program	Referral Rates	Retention Rates	Achievement
First Steps	*97-98 NA* *98-99 NA* *99-00 NA* *97-00 (2) NA* 97-00 (1) Predictor of lower referral rates, in regression analysis 97-00 (3) Predictor of lower referral rates, in regression analysis *00-01 NA* *01-02 NA*	*97-98 NA* *98-99 NA* *99-00 NA* 97-00 (1) NS predictor, in regression analysis 97-00 (2) NS predictor, in regression analysis 97-00 (3) NS predictor, in regression analysis 00-01 Higher retention rates than comparison schools, no statistical test of significance performed *01-02 NA*	*97-98 NA* *98-99 NA* *99-00 NA* 97-00 (1) Predictor of lower ISTEP+ pass rates, in regression analysis *97-00 (2) NA* 97-00 (3) Predictor of lower ISTEP+ pass rates (at .1 alpha level), in regression analysis 00-01 Higher mean ISTEP+ pass rates than comparison schools, no statistical test of significance performed *01-02 NA*
Waterford	*97-98 NA* *98-99 NA* *99-00 NA* *97-00 (1) NA* *97-00 (2) NA* *97-00 (3) NA* *00-01 NA* *01-02 NA*	*97-98 NA* *98-99 NA* *99-00 NA* *97-00 (1) NA* *97-00 (2) NA* *97-00 (3) NA* *00-01 NA* 01-02 Higher retention rates than comparison schools, no statistical test of significance performed	*97-98 NA* *98-99 NA* *99-00 NA* *97-00 (1) NA* *97-00 (2) NA* *97-00 (3) NA* *00-01 NA* 01-02 Higher mean ISTEP+ pass rate than comparison schools, no statistical test of significance performed

TABLE 7. Table 7. Results for ELIGP-Funded Programs Across Eight CEEP Evaluation Studies - By Type.

Program	Referral Rates	Retention Rates	Achievement
Four Blocks	*97-98 NA* *98-99 NA* *99-00 NA* 97-00 (1) Predictor of higher referral rates, in regression analysis 97-00 (2) NS predictor, in regression analysis 97-00 (3) Predictor of higher referral rates, in regression analysis *00-01 NA* *01-02 NA*	*97-98 NA* *98-99 NA* *99-00 NA* 97-00 (1) NS predictor, in regression analysis 97-00 (2) NS predictor, in regression analysis 97-00 (3) NS predictor, in regression analysis 00-01 Higher retention rates than comparison schools, no statistical test of significance performed 01-02 Lower retention rates than comparison schools, no statistical test of significance performed	*97-98 NA* *98-99 NA* *99-00 NA* 97-00 (1) Predictor of higher ISTEP+ pass rates in both low- and high-poverty schools *97-00 (2) NA* 97-00 (3) NS predictor, in regression analysis 00-01 Higher mean ISTEP+ pass rate than comparison schools, no statistical test of significance performed 01-02 Higher mean ISTEP+ pass rates than comparison schools, no statistical test of significance performed
Early Success	*97-98 NA* *98-99 NA* *99-00 NA* *97-00 (1) NA* *97-00 (2) NA* *97-00 (3) NA* *00-01 NA* *01-02 NA*	*97-98 NA* *98-99 NA* *99-00 NA* *97-00 (1) NA* *97-00 (2) NA* *97-00 (3) NA* 00-01 Lower mean retention than comparison schools, no statistical test of significance performed 01-02 Lower mean retention than comparison schools, no statistical test of significance performed	*97-98 NA* *98-99 NA* *99-00 NA* *97-00 (1) NA* *97-00 (2) NA* *97-00 (3) NA* 00-01 Higher mean ISTEP+ pass rate than comparison schools, no statistical test of significance performed 01-02 Higher mean ISTEP+ pass rate than comparison schools, no statistical test of significance performed

Table 8 presents findings for schools categorized as “Other Early Literacy Interventions (OELI).” There were schools funded by ELIGP, but for programs other than Reading Recovery or any of the other interventions assessed individually during a given year (shown in Table 7). The literacy programs included in this category varied from year to year, depending on which programs were funded and by which programs were examined individually. Readers are referred to the original reports for complete details on which programs were included in each analysis.

TABLE 8. Table 8. Results for ELIGP-Funded Programs Across Eight CEEP Evaluation Studies - Programs Coded "Other" (OELI).

Program	Referral Rates	Retention Rates	Achievement
All OELI Schools*	97-98 Significantly lower referral rates than comparison schools	97-98 NS difference with comparison schools	*97-98 NA*
	98-99 NS difference with comparison schools	98-99 NS difference with comparison schools	*98-99 NA*
	99-00 NA *97-00 (1) NA* *97-00 (2) NA*	*99-00 NA* *97-00 (1) NA* *97-00 (2) NA*	*99-00 NA* *97-00 (1) NA* *97-00 (2) NA*
	97-00 (3) Predictor of lower referral rates, in regression analysis	97-00 (3) Predictor of lower retention, in regression analysis	97-00 (3) NS predictor in first regression analysis, NA in second regression analysis
	00-01 NA	00-01 Lower retention rates than comparison schools, no statistical test of significance performed	00-01 Higher mean ISTEP+ pass rates than comparison schools, no statistical test of significance performed. Also, among highest poverty quartile, higher mean pass rate, no statistical test of significance performed
	01-02 NA	01-02 NA in first analysis. But among schools in highest poverty quartile, higher mean retention rate than comparison schools.	*01-02 NA*

Table 9 presents a list of reports referenced in Tables 5-8.

TABLE 9. Table 9 Reports Referenced in Tables 5-8.

Years Referenced	Publication
97-98	Manset, G., St. John, E., Simmons, A., Michael, R., Bardzell, J., Hodges, D., Jacob, S., & Gordon, D. (1999). *Indiana's Early Literacy Intervention Grant Program: Implementation Study for 1997-98.* Bloomington, IN: Indiana Education Policy Center.
98-99	Manset, G., St. John, E., Simmons, A., Michael, R., Bardzell, J., Hodges, D., Jacob, S., & Gordon, D. (2000). *Indiana's Early Literacy Intervention Grant Program: Implementation Study for 1998-99.* Bloomington, IN: Indiana Education Policy Center.
99-00	Manset, G., St. John, E., Simmons, A., Worthington, K., Chung, C-G., & Manoil, K. (2000). *Indiana's Early Literacy Intervention Grant Program: Implementation Study for 1999-2000.* Bloomington, IN: Indiana Education Policy Center.
97-00 (1)	Manset, G., St. John, E., & Simmons, A. (2000). *Progress in Early Literacy: Summary Evaluation of Indiana's Early Literacy Intervention Grant Program 1997-98 Through 1999-00 School Year.* Bloomington, IN: Indiana Education Policy Center.
97-00 (2)	St. John, E.P., Manset, G., Chung, C., Simmons, A.B., Musoba, G.D., Manoil, K., & Worthington, K. (2000). *Research-Based Reading Reforms: The Impact of State-Funded Interventions on Educational Outcomes in Urban Elementary Schools.* Bloomington, IN: Indiana Education Policy Center.
97-00 (3)	St. John, E.P., Manset, G., Chung, C., Simmons, A.B., Musoba, G.D. (2000). *Research-Based Reading Interventions: The Impact of Indiana's Early Literacy Grant Program.* Bloomington, IN: Indiana Education Policy Center.
00-01	St. John, E.P., Michael, R.S., Chung, C., Simmons, A.B., Worthington, K. Manoil, K., & Loescher, S. (2001). *Indiana's Early Intervention Grant Program Impact Study for 2000-01.* Bloomington, IN: Indiana Education Policy Center.
01-02	Plucker, J.A., Hessing, J.J., Lim, W., St. John, E.P., Simmons, A.B., Patterson, A.P., & Dow, G.T. (2003). *Indiana's Early Intervention Grant Program Impact Study for 2001-2002.* Bloomington, IN: Indiana Education Policy Center.

As demonstrated in Tables 5-8, of the individual ELIGP-funded interventions included in prior CEEP evaluations, Literacy Collaborative has most consistently demonstrated success on student outcomes. Reading Recovery, Success for All, and Four Blocks have also demonstrated favorable results overall. Early Success shows promise, based on limited data collected on that intervention, and merits further attention. The First Steps and Waterford programs are both associated with mixed results and should be examined further.

Meeting Needs of Students in Low-Income and Urban Schools

Several CEEP reports have addressed the success of ELIGP with Indiana students considered at highest need for literacy improvement. The intention of the ELIGP grant program was to improve reading skills of young students considered at risk for poor literacy outcomes. One group considered at greater risk of not learning to read consists of students who attend urban schools (Slavin, 1991; Snow, Burns, & Griffith, 1998). Also, a strong predictor of reading scores in general is the rate of poverty in a school. Thus, several CEEP reports have specifically attempted to assess ELIGP funding within these contexts. With regard to poverty, studies have reported on how funds have been allocated to high-poverty schools, and have collapsed data across poverty levels in order to assess effectiveness of programs specific to schools' income status. One study looked specifically at ELIGP programming within urban schools in order to generate conclusions most likely to be valid for that population. Brief summaries of these prior findings are summarized below.

CEEP reports have consistently indicated that ELIGP funds were appropriated to schools with the most need, and have suggested a relationship between a school's poverty level and the type of ELIGP-funded program used by that school. The initial ELIGP assessment, 1997-1998, reported that schools that implemented Reading Recovery had lower SES status than OELI or comparison schools. This was seen as an important consideration, particularly because it was thought to be a possible explanation for the limited measurable improvements over comparison and OELI schools. Data from the 2000-2001 study also show that Reading Recovery schools had a mean of 34.5% of students eligible for free lunch, compared with 24.2% of students in Literacy Collaborative schools, and 28.9% for other early interventions.

Also, the 1998-1999 report found that schools in the second funding year had a greater percentage of students at risk for reading failure than comparison schools, according to income and achievement attainment indices. That is, schools that year had a signifi-

cantly greater percentage of students from low-income families in their schools and a greater percentage of students retained and referred for special education assessment than the randomly selected sample of comparison schools. They also had lower ISTEP+ scores on the English/Language Arts scale. Based on this information, the report stated "that the program is meeting the goal of targeting those students at greatest risk for reading failure" (p. iv).

In order to examine program effectiveness with regard to poverty level, reports between 2000 and 2002 used both comparative and regression methods of analysis to assess the relationship of income and program success within schools.

The 2000 CEEP report, "Progress in Early Literacy: Summary Evaluation of Indiana's Early Literacy Intervention Grant Program 1997-98 through 1999-00 School Year," looked at Grade 3 reading achievement rates in low- and high-poverty schools implementing Reading Recovery, Success for All, Literacy Collaborative, and Four Blocks. The low-poverty schools were in the quartile with the lowest percentages of students receiving free or reduced price lunch. High-poverty schools were in the quartile with high percentages of students receiving free or reduced price lunch. That study found that in low-poverty schools, only Literacy Collaborative and Four Blocks showed significant gains in passing rates on ISTEP+ reading test scores. However, within high-poverty schools, both Reading Recovery and Four Blocks interventions demonstrated small effect sizes, and Success for All and Literacy Collaborative had effect sizes larger than found in low-poverty schools. Therefore, it appeared that any effect of each of the four programs was greatest in the high-poverty school group. Other findings included:

- Reading Recovery was associated with reduced grade-level retention in high-poverty schools.
- Success for All was associated with lower special education referral and grade-level retention in high-poverty schools.
- Literacy Collaborative was associated with reduced lower special education referral in both high- and-low poverty schools.

- Four Blocks was associated with higher special education referral in both high- and low-poverty schools.

A subsequent regression analysis on all schools controlled for pre-funding ISTEP+ scores, percent of students receiving free or reduced cost lunch, and percent of minority students in the school, and found poverty to be a consistent predictor of literacy-related outcomes. Controlling for the influence of poverty and other variables that influence literacy outcomes (pre-funding ISTEP+ scores and percent minority), Reading Recovery, Success for All, and Literacy Collaborative were associated with improvement in literacy outcomes, leading that report to conclude that "clearly these programs merit further funding" (p. 19). The evidence for Four Blocks was not considered as compelling, since it appeared to be associated with ISTEP+ passing scores but also with increased referrals.

The 2000-2001 report presented strong evidence that ELIGP-funded interventions were most effective in schools with high poverty rates. In that study, ISTEP+ Language Arts passing rates of Reading Recovery schools exceeded those of comparison schools only among schools in the quartile of highest poverty schools. OELI school pass rates were higher than comparison rates in the highest two quartiles, but not the lowest two. Thus, that report concluded that "…findings suggest that the funded interventions were most effective in schools with the greatest need" (p. 28). The report also found lower retention rates among Reading Recovery and OELI schools than in comparison schools, and that those differences were most notable in the schools with the highest levels of poverty. Although the comparison of means for retention rates did not achieve statistical significance, a clear trend in the direction of increased retention differences with increasing levels of poverty was noted.

Again the following year, the 2002 CEEP report stressed the advantages of the ELIGP programs among schools serving with high poverty populations. Specifically, high-poverty Reading Recovery schools that year had 53% of their students pass the ISTEP+ Grade 3 test prior to the funded intervention, compared to 56% for comparison schools, but had 60% of students pass that test the following year (after ELIGP

funding was implemented), compared to 59% for comparison schools. That report stated, “Schools serving low-income students should be actively encouraged to participate in the Early Intervention Grant Program, especially given the record of success in schools with low-income students” (p. 76).

Finally, a study published in 2000, “Research Based Reading Reforms: The Impact of State-Funded Interventions on Educational Outcomes in Urban Elementary Schools,” used regression analysis to examine three years of ELIGP data within urban schools. That study used a subpopulation of ELIGP and comparison schools located in urban school districts. In the average school in the sample, 44% of the students qualified for free or reduced price lunch and 31% were minorities. Among findings, the percentages of minority students and of students on free and reduced price lunch were significant and positively associated with retention rates. Having a teacher funded through Reading Recovery and having an OELI intervention were associated with lower retention rates. The study found that explicit approaches did not relate to reductions in either special education referrals or retention, leading to the conclusion that some calls to place more emphasis on explicit instruction did not seem warranted based on the data. Rather, evidence suggested that having comprehensive approaches to early reading improvement was most beneficial for the urban school children, and that “having funded projects for both Reading Recovery and other literacy interventions (OELI-1-3) [sic] improved educational progress related to early reading. Funding comprehensive programs aimed at improving early reading appears to make a difference for urban school children” (p. 26). The study also concluded that both funding and program maturity are important factors in the success of ELIGP interventions, particularly in the case of Reading Recovery. The study concluded “…there is strong evidence to support the idea that categorical funding for early reading interventions can improve educational outcomes in urban schools.” (p. 27).

Cost and Savings

The first CEEP report, 1997-1998, estimated the state cost for training Reading Recovery teachers to be $917 per student served by those teachers. Costs for OELI projects were estimated at $162 per student served. This difference in cost reflects the differing focus of the programs, since Reading Recovery is a pull-out program that targets the lowest achieving 20% of students, where OELI programs typically involve the entire classroom of students in the intervention.

Costs per student in the 1998-1999 report were estimated as approximately $677 per student for Reading Recovery students, and approximately $89 per student for OELI programs. The following year, those costs were estimated at $257 for Reading Recovery program students and $157 for OELI program students. The costs of both programs were therefore said to be “considerably less than other common remedial options, such as grade retention and special education services” (p. 6). This was based on an estimate that each student retained in early primary grades cost the state and districts $4,387 that year, and that the average state cost for serving students identified as having a learning disability ranges from $1,522 - $2,577 a year.

Based on a comparison of retention rates between funded and non-funded schools, the 2000-2001 report concluded that, due to expenses associated with retaining students, Reading Recovery resulted in a savings of $1,200 for every 100 students, an amount equal to 55% of the average per student cost (p. 106), considering the cost of the intervention and savings due to decreased retention. This was based on an estimate that each student retained in early primary grades cost the state $5,399 for the 2000-2001 school year (Theobald & Michael, 2000).

Thus, CEEP reports have concluded that in addition to weighing program gains in terms of student achievement, fiscal outcomes should be considered as well. Data demonstrating reduced grade retention and special education referrals among ELIGP-funded schools indicate that the state may recover substantial portions of those grant funds when programs succeed.

Conclusions and Implications

Whereas prior ELIGP studies conducted by CEEP have focused on one to three years of ELIGP data, this report spans the eight years of the program and seven years of evaluation findings in order to identify trends, themes, and conclusions that were not possible in the prior short-term reports. Major conclusions include the following:

- The grant program has had a considerable impact on literacy education in Indiana. ELIGP has served more than 10,000 students per year and over 700 schools since its inception in 1997. Evaluation reports provide evidence that the grant program has resulted in direct improvements in areas of teacher expertise and collaboration, student achievement, lower grade retention, and in some cases a reduction in special education referrals. The program's indirect influence on statewide literacy practices over the past eight years, considering the degree to which professional development and collaboration may positively impact teachers and students in other grades and even other schools, is difficult to evaluate, although it should be considered in future evaluations.

- Funding and implementing research-based interventions appear to be associated with positive student outcomes. Providing categorical grants that encourage schools to select interventions that meet their local needs is an effective approach. An important part of program selection and implementation should be systematic evaluation within and across schools. Research serves to provide valuable information on cost-benefits, program components, and student outcomes related to various ELIGP-funded interventions.

- Generally, the interventions funded by ELIGP do not represent drastic departures from standard practice, but most seem to fit into prevailing Indiana literacy instructional practices. Interventions that take a balanced approach are most likely to complement Indiana's existing literacy education environment and appear to be most effective. ELIGP-funded programs tend to promote more student-centered literacy instruction than comparison schools, but within a balance

of skills-based and holistic instruction that appears to be associated with significant success.

- The ELIGP program appears to have met the goal of reaching Indiana students with the greatest need for literacy improvement. CEEP reports have consistently concluded that ELIGP-funded programs, and Reading Recovery in particular, were associated with especially good outcomes in high-poverty schools.

Recommendations

These conclusions lead to nine recommendations to the Indiana Department of Education (IDOE), in the areas of future research and evaluation, funding for Indiana early literacy initiatives, and providing support to schools in need of ELIGP resources:

Research and Evaluation

- Continue to conduct an annual survey of ELIGP and comparison schools with the sustained funding in the 2005-07 state budget. These activities serve to document how funding has been distributed, where those dollars have been spent, and what student gains can be attributed to the initiative. A variety of research methods have proven useful. Site visits and case studies provide in-depth and contextual information on the nature of specific interventions. Large-scale analyses of the effects of ELIGP on standardized outcomes such as ISTEP+ results, student retention, and special education referrals provide quantitative data that allow outcome comparisons across interventions, schools, and years. Future evaluations should consider utilization of randomized experimental designs. Although this type of evaluation would take several years and considerable collaborative efforts to achieve, the results would allow for rigorous evaluation information not available to date. This information would also be useful to any other state-funded or state-supported literacy interventions, such as the federal Reading First program.

- Continue to identify research-based programs and provide schools with that information in order to guide their program and funding choices. Provide schools with assistance in selecting or developing the most appropriate scientifically-based reading literacy program for their needs. For example, evidence from ELIGP data suggests that balanced approaches to literacy instruction, incorporating features consistent with both phonics and whole language tradi-

tions, and including child-initiated as well as direct instruction elements, are most likely to result in success.

- Encourage schools to review and refine their early reading and literacy programs. More specifically, encourage more site-based action research to build a base of empirical data on program outcomes. It is especially important that new interventions be accompanied by systematic evaluations.

Funding for Early Literacy Initiatives

- Funding for packaged programs should be targeted on interventions with a proven record of success (i.e., evidence-based best practices), especially interventions that focus on reading improvements in Grades 1-3.

- Of ELIGP interventions assessed by CEEP, Literacy Collaborative appears especially successful, demonstrating the most consistent positive results of programs examined. Reading Recovery, Success for All, and Four Blocks all demonstrated favorable results overall. Early Success shows promise, based on limited data collected on that intervention, and merits further attention. The First Steps and Waterford programs both received mixed results and should be examined further.

- Given the Early Literacy Intervention Grant Program's record of success in schools with low-income students, all schools serving low-income students should be actively encouraged to participate in the program. Technical support for planning and applying for ELIGP funding should be made available to low-income schools that have not applied previously.

Providing Support to Indiana Schools

- Increase emphasis on ongoing professional development in early reading and literacy for elementary teachers. ELIGP evaluations demonstrate the importance

of professional development and collaboration in interventions seeking to improve early literacy outcomes.

- Utilize local university support to enhance the implementation of early literacy intervention models. The IDOE should facilitate or encourage closer collaboration between schools and universities concerning ongoing professional development and evaluation that would benefit individual schools and the ELIGP grant program as a whole.
- The IDOE should consider resuming efforts to provide grant workshops and expert guidance on reading research and literacy program implementation.

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