Investing in Early Learning Strategies

A Welborn Baptist Foundation White Paper

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Monica Candal Rahim, PhD, has worked in the education sector for over 10 years – as a classroom teacher, researcher, and in state government. Her research has focused on training and professional development in mathematics for elementary teachers and on parent involvement among minority parents. She currently works as a consultant for nonprofit organizations, charter schools, and foundations around a range of educational issues, including the funding, design, and implementation of early learning systems.

A number of best practice programs and solutions are identified and discussed in this paper. These are included to provide an array of what other communities have found useful. Not every best practice tactic listed will be accepted for funding by the Foundation.

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I. Executive Summary

Early Learning (EL) programs that serve children birth through eight have been closely linked to improved child outcomes, family outcomes, and community outcomes. In addition, early investments in high-quality EL programs have been demonstrated to produce significant long-term financial returns through reduced need for special education, workforce development, and public safety services. EL programs are especially important for at-risk children, particularly those living in poverty, and the return on investment in high-quality EL programs is higher for these children than for middle-income children.

Attributes of High Quality Early Learning Programs

Ensuring that children are attending high-quality EL programs is an integral part of realizing the positive effects of EL participation. High-quality programs are often those that have the following features:

- Full-day programs that are 5 days per week
- Highly educated teachers, often with better compensation
- Small class sizes with low child:teacher ratios
- Monitoring and evaluation of children and teachers
- Teacher coaching and opportunities for professional development
- Research-based curricula with intentional teaching focused on specific learning goals

High-quality programs are more typically expensive to implement. However, they also have greater returns on investment.

Early Learning in Indiana

Indiana has approximately 500,000 children aged 5 and under in the state. One-fourth of those children live in poverty while two-thirds live in households where all parents work. Despite the great need for high-quality childcare in the state, the state has enough high-quality seats to serve only 13% of young children.

Research suggests that Indiana currently has some strong foundational EL practices in place, including an Early Learning Advisory Committee (ELAC) that is actively conducting statewide needs assessments, as well as developing long-term strategic plans to address the shortage of high-quality seats in the state. The current work in Indiana provides an important opportunity for Indiana to capitalize on national research around EL policies and practices.

Recommendations

The Welborn Baptist Foundation has identified two long-term community changes that they hope will be driven by focused investments in EL:

1. First, more children will arrive at Kindergarten ready to learn.
2. Second, more 3rd graders will meet or exceed grade-level benchmarks for school success.

Given the research that suggests the importance of high-quality EL in driving these community changes and the shortage of high-quality EL seats in Indiana, the Welborn Baptist Foundation has identified four strategies related to EL that the Foundation intends to prioritize for funding:

1. Family Engagement
2. Provider Effectiveness
3. Affordable, High-Quality Enrollment
4. Academic Supports

This White Paper presents research findings and recommendations for investments regarding each strategy. Recommendations are summarized below.

- Family Engagement: EL parent involvement activities with the strongest research bases are: home visit programs, transition activities for children moving from EL programs to the K-12 system, and parent activity programs. Home visits, in particular, should be coordinated across providers as much as possible to make sure that resources are used efficiently.

- Family Engagement: Staff at EL programs dedicated specifically to family aspects can facilitate parent engagement and ensure that it becomes an integrated part of programming.

- Provider Effectiveness: EL teachers should have at least a BA in a related discipline. However, existing EL staff may need intensive academic and personal supports to attain this degree.

- Provider Effectiveness: Job-embedded coaching offers another way for EL teachers to continue to improve. Coaching that focusing on specific learning goals or based on particular measurement tools will result in the greatest improvement.

- Provider Effectiveness: Nationally and in Indiana, EL teachers are significantly underpaid versus their K-12 counterparts. Innovative models to encourage higher education and increased compensation for EL teachers include state policies and programs like T.E.A.C.H., WAGE, and INCENTIVES.

- Affordable, High-Quality Enrollment: Investments in EL programs' continued improvements should assist providers with purchasing high-quality curricula, implementing family engagement practices, and improving teacher quality.

- Affordable, High-Quality Enrollment: Research on scholarships in the K-12 setting and in Indiana for high-quality EL programs indicates improved outcomes for children who receive them. Where possible, high-quality EL programs should maintain or expand their participation in voucher programs.

- Affordable, High-Quality Enrollment: Improving interagency collaboration and collaboration across EL programs and community partners can increase access to programs and affordability by more efficiently leveraging resources. Examples of these efforts include the Ready Schools Miami initiative and Louisiana's Early Childhood Care and Education networks.

- Academic Supports: Early and frequent screening for children must be an essential component of EL programs. The earlier that a child is identified as needing intervention, the more likely that intervention will be successful.

- Academic Supports: Non-school organizations supporting students should use research-based interventions. Some of these interventions are organization-based tutoring programs (e.g., AARP's Experience Corps, SMART) while others are curricula or activities that can be implemented by any non-school organization (e.g., Annual Book Fairs, literacy interventions).

- Academic Supports: While a wide range of research-based supplemental interventions exist for literacy in the early elementary grades, fewer exist for mathematics.

- Academic Supports: Mathematics interventions should focus on practices that make mathematics thinking explicit, include word problems, work with visual representations, and promote fluency with arithmetic.

II. Introduction

A wide breadth of research indicates that investments in Early Learning (EL) programs have among the highest rates of return on investment. High-quality EL programs that serve children birth through eight have been closely linked to improved child outcomes, family outcomes, and community outcomes.[1,2] In addition, early investments in high-quality EL programs have been demonstrated to produce significant long-term financial returns through reduced need for special education, workforce development, and public safety services.[3]

EL programs are particularly important for at-risk children, particularly those living in poverty, and the return on investment in high-quality EL programs is higher for these children than for middle-income children.[4] According to research reported by the Bridgespan group, a young child who enters Kindergarten ready for school has an 82% chance of being on grade level at age 11; this number falls to 45% for children entering Kindergarten who are not ready.[5] At-risk children who do not attend high-quality EL programs are 25% more likely to drop out of school, 50% more likely to be placed in Special Education, 40% more likely to become a teen parent, and 70% more likely to be arrested for a violent crime.[6] It is clear that young children, particularly low-income children, benefit from the opportunity to engage in social interactions, discovery, and play, as well as with games involving language, literacy, and math.[7]

Due to the wide range of evidence supporting investments in high-quality EL programs, the Welborn Baptist Foundation, located in Evansville, Indiana, has identified Early Learning as an important funding focus area. This white paper examines the research in four areas of EL that are associated with best practices and which the Foundation has identified as important strategies that contribute to young children's success. These strategies are:

1. Family Engagement: Helping families understand the importance of early learning and equipping them with best practice parenting tools

2. Provider Effectiveness: Equipping EL providers with the tools to create high-quality learning settings

3. Affordable, High-Quality Enrollment: Providing scholarship resources towards efforts to make high-quality learning environments more accessible to families

4. Academic Supports: Funding programs by non-school community partners focused on narrowing the learning gap among elementary school students

The white paper opens with a description of EL in Indiana and then describes the research and recommendations for each of the Welborn Baptist Foundation's Early Learning strategies. The paper closes with a discussion of considerations for evaluating grant impacts for EL initiatives.

III. Early Learning in Indiana

The Welborn Baptist Foundation serves 14 counties in the tri-state area of Indiana, Illinois, and Kentucky. This white paper focuses (where data is available) on the service area in Indiana composed of the following counties: Dubois, Gibson, Perry, Pike, Posey, Spencer, Vanderburgh, and Warrick. The area is largely rural with approximately 6% of individuals under the age of 5, equating to just over 24,000 children in the Foundation's Indiana service area.

Table 1. *Demographic Information for Foundation's Indiana Service Area*				
	Population	Minority	Poverty	Children under 5
Evansville	119,943	18.0%	20.5%	8,156 (6.8%)
Dubois County	42,461	2.3%	8.0%	2,675 (6.3%)
Gibson County	33,775	4.5%	11.8%	2,128 (6.3%)
Perry County	19,347	4.7%	15.5%	987 (5.1%)
Pike County	12,594	2.2%	11.3%	718 (5.7%)
Posey County	25,512	2.9%	10.7%	1,454 (5.7%)
Spencer County	20,715	2.5%	9.3%	1,181 (5.7%)
Vanderburgh County	181,877	13.7%	17.7%	11,458 (6.3%)
Warrick County	61,897	5.7%	8.2%	3,466 (5.6%)
Indiana Service Area	398,178	8.4%	13.5%	24,067 (6.0%)
SOURCE: US Census. All data are 2015 estimates.				

The State of Quality in Indiana

In 2015, Indiana had 4,254 EL programs serving young children. Of those, 968 were considered to be high-quality EL programs, resulting in slightly over 42,000 high-quality seats.[8] (High-quality programs are those that earned a Level 3 or 4 rating on Indiana's Quality Rating and Improvement System (QRIS), called Paths to Quality.) The situation becomes even more dire when analyzing seats specifically for younger children because less than one-third of high-quality seats statewide are for infants and toddlers.[9] Given that over 500,000 children aged 5 and below reside in Indiana, the state clearly has a shortage of high-quality seats for children, especially low-income children and children whose parents work.

Table 2. Percent of Children in Need of Childcare Currently Served in *Foundation's Indiana Service Area*	
	% Enrolled in High-Quality Program
Dubois County	61.0%
Gibson County	49.0%
Perry County	10.0%
Pike County	16.0%
Posey County	26.0%
Spencer County	16.0%
Vanderburgh County	37.0%
Warrick County	37.0%
Indiana Service Area	37.3%
SOURCE: Early Learning Advisory Committee of Indiana	

The Foundation's Indiana service area has greater access to high-quality EL seats than the state as a whole (37.3% vs. 13%).[10] Despite a larger proportion of high-quality seats in the Foundation's service area, however, still only one-third of seats in the Foundation's service area are high-quality.[11]

Beyond the shortage of high-quality seats available to Indiana families, another issue affecting families' access to high-quality childcare is the increased cost of high-quality programs. On average, paying for a high-quality EL program costs an additional $1,000 as compared to average EL programs, and costs for high-quality infant-toddler programs can exceed $10,000 per year.[12]

The Welborn Baptist Foundation recognizes issues of accessibility and affordability for Indiana's families when it comes to high-quality EL programs. Although Indiana is in the process of addressing these issues through pilot projects like the Early Education Matching Grant (EEMG) and On My Way Pre-K for 4 year olds, the Foundation seeks to invest in additional avenues for improved EL programs.

IV. Family Engagement

A number of studies have pointed to the importance of family engagement, particularly in early childhood settings. Family engagement has important implications for children's academic learning, leading to higher math and literacy scores, and socio-emotional development, leading to fewer negative behaviors.[13,14,15]

Although family engagement is a term often used by EL programs, funders, and other stakeholders, the term actually encompasses specific types of activities that programs can execute in order to involve families. Joyce Epstein classifies family engagement activities into six levels:[16]

1. **Parenting**: Help all families establish home environments to support children as learners.

2. **Communicating**: Design effective forms of program-to-home and home-to-program communications about program activities and children's progress.

3. **Volunteering**: Recruit and organize parent help and support.

4. **Learning at Home**: Provide information and ideas to families about how to help children at home with curriculum-related activities, decisions, and planning.

5. **Decision-Making**: Include parents in program decisions, developing parent leaders and representatives.

6. **Collaborating with Community**: Identify and integrate resources from the community to strengthen school programs, family practices, and child learning and development.

For EL programs, the hope is that these activities will result in increased family well-being, positive parent-child relationships, families as lifelong educators, families as learners, family engagement in transitions, family connections to peers and the community, and families as advocates and leaders.[17]

For funders interested in promoting family engagement in EL settings, one major challenge is that programs' family engagement activities are often unstructured and ill-defined. More often than not, EL programs' family engagement practices simply include one-off parent trainings or quarterly requests for parent volunteers. EL programs generally lack comprehensive, goal-centered family engagement strategies. In order to assist EL programs in developing comprehensive, effective family engagement programs, Indiana's Early Learning Advisory Committee (ELAC) developed a Family Engagement Toolkit for EL programs that provides programs with an engagement self-assessment tool and concrete practices to improve their family engagement.[18] The toolkit focuses specifically on:

1. Strengthening the role of families as children's primary educators and nurturers

2. Connecting families with supports in the community

3. Empowering families as child advocates and leaders

4. Supporting families as safe, healthy, and self-sufficient caregivers.

The strategies highlighted in ELAC's Family Engagement Toolkit provide a framework that encourages EL programs to develop specific goals for a family engagement strategy and to engage in a program design that helps to achieve those goals. In particular, programs should consider integrating family engagement activities that are research-based, described in more detail below.

Home Visits

A large body of research literature suggests that home visit programs result in positive outcomes for family wellbeing and children's learning.[19] Six national, research-based home visit programs target parents for improved health and academic outcomes.

Table 3. National Home Visiting Models		
Program	Population Served	Program Goals
Early Head Start	Low-income pregnant women with infants and toddlers	Promote healthy prenatal outcomes, enhance development of young children, promote healthy family functioning
Healthy Families America	Parents of all income levels identified as at-risk for abuse and neglect	Promote positive parenting, prevent child abuse and neglect
The Home Instruction Program for Preschool Youngsters (HIPPY)	Families, many low-income but no restricted income guidelines	Empower parents as their children's educators, enhance children's early school success
The Nurse-Family Partnership	Low-income, first-time mothers	Improve pregnancy outcomes, child health and development, family economic self-sufficiency
The Parent-Child Home Program	Low-income families	Develop children's language and literacy skills and prepare them for academic success,

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		empower parents and enhance parenting skills
Parents as Teachers	Parents of all income levels	Empower parents and increase their knowledge of child development, prepare children for school success
SOURCE: Weiss, H. and Klein, L. (2006). "Changing the conversation about home visiting: Scaling up with quality." Harvard Family Research Project.		

Four of these programs – Early Head Start, the Home Instruction Programs for Preschool Youngsters (HIPPY), the Parent-Home Child Program, and Parents as Teachers – focus on empowering parents to become advocates for their children's education. Two others – Healthy Families America and Nurse-Family Partnership – focus on general family well-being.

Home visit lengths differ from program to program, and they vary in their frequency and initiation. The implementation of home visit programs can be expensive and difficult to scale due to the resource-intensive nature of programs. In order to capitalize on existing home visit resources, to eliminate redundancies, and to identify gaps in service, home visit providers can work together to ensure streamlined and properly targeted services. One example of these coordinated services is Every Child Succeeds based in Cincinnati, Ohio, which brings together local home visit providers to coordinate resources and efforts. In 2014, Every Child Succeeds engaged with providers using the Healthy Families America and Nurse-Family Partnership home visitation models to conduct over 35,000 home visits to over 2,750 families.[20]

Transition Activities

Transitioning from EL programs to the K-12 system, whether in Pre-K, Kindergarten, or first grade, can be stressful for children and their families. In addition to meeting new teachers and administrative staff, children must learn to abide by new classroom rules while parents learn to navigate a new bureaucratic system. Effective transition programs and activities can help to ease this transition for families.[21] In order to create comprehensive transition programs, EL programs should collaborate with the K-12 system to develop:[22]

- Opportunities for young children to visit the K-12 classroom to which they will transition. This should include observation as well as meeting their new teacher;

- A Family Transition Checklist, which should include a transition conference and an up-to-date

list of community resources with contacts, eligibility requirements, and enrollment procedures to provide to families;

- Family Resource Centers that provide a hub for all families with children of all ages to access resources and information regarding EL programs, the K-12 system, and children's transitions across both; and

- An analysis of curricular expectations in PreK and Kindergarten to determine the extent of curricular alignment and develop plans to address the gaps. Indiana has taken important steps in this direction with the its Early Learning Development Framework, which is aligned to the state's K-12 academic standards.[23]

Parent Activity Programs

Many studies have examined the effects of various programs that engage parents with children's learning at home.[24,25] Most of these studies have determined positive effects. However, the particular aspects of the programs most related to change are unclear.

As stated in a report by the National Early Learning Panel,[26]

> The commonality across all of the programs examined by this group of studies is that they somehow involved parents as the agents of intervention for children. Nevertheless, these programs varied greatly in potentially important ways. For example, some of the programs have more general goals (such as trying to improve children's health, behavior, or cognitive functioning); others aimed at more specific literacy goals (such as improving language skills). Because of the great amount of variation evident in these approaches, it is not yet possible to point to one or two examples of replicated models of successfully involving parents in enhancing their children's developmental outcomes. Additional research on identification of key aspects of home and parent programs is needed. (p180)

For funders, this is important because it provides some flexibility in considering which parent involvement activities to encourage. Because the individual components of successful programs have yet to be identified, the focus should instead be on ensuring that EL programs implement some form of a structured parent activity program that has defined goals (whether general or specific) and regular meetings or activities for parents to do with their children. Examples of these programs include the Ready to Learn Initiative for mathematics and family literacy packs for encouraging reading.[27,28,29]

Dedicated Family Engagement Staff

Some evidence suggests that dedicating staff to family engagement can help to institutionalize family engagement efforts and ensure that they receive the attention that they deserve. Part- or full-time staff can come in the form of parent liaisons or school counselors who should focus on direct services to families at risk, serving as a support for teacher outreach, pursuing school-community partnerships, and collecting data for family engagement program improvement.[30,31,32]

Recommendations

- EL parent involvement activities with the strongest research bases are: home visit programs, transition activities for children moving from EL programs to the K-12 system, and parent activity programs. Home visits, in particular, should be coordinated across providers as much as possible to make sure that resources are used efficiently.

- Dedicated staff at EL programs can facilitate parent engagement and ensure that it becomes an integrated part of programming.

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V. Provider Effectiveness

The quality of EL programs relies heavily on the quality of the individuals who work in the programs, yet the standards for staff qualifications and training in EL programs across the country are minimal, and the funding to compensate teachers for these additional credentials is often missing.[33,34,35] Research suggests that in order to improve staff qualifications and trainings, teachers must be supported in their efforts to continue education both in the classroom and on the job. In addition, once EL teachers improve their qualifications, they must be compensated in a manner that recognizes them as professionals and encourages retention.

Strengthening Teacher Credentials

It is widely recognized that one of the most effective ways to improve the quality of EL programs is require EL teachers to hold a Bachelor's Degree. Currently, only 33 out of 57 state Pre-K programs require EL teachers to hold a BA.[36] Indiana requires teachers who teach preschool in K-12 schools to hold a Bachelor's Degree and early childhood education license. However, regulations for teacher credentials outside of the public school setting are more lax, allowing lead teachers to have a Child Development Associate credential or Associate's Degree in early childhood education.[37] As a result of these policies, only 27% of EL teachers in Indiana have a BA.[38] Further, a report by the National Council for Teacher Quality has found that even if teachers do attend EL teacher preparation programs, many EL degree programs could focus more on preschool content – language, literacy, and math – and classroom management and engagement.[39] This is despite the fact that caregivers with a BA or BS in high-quality EL preparation or a related field are consistently rated more highly on measures of classroom quality and use more developmentally appropriate practices.[40]

In order to strengthen EL teacher preparation, researchers at the University of California-Berkeley analyzed Indiana's EL training program offerings and developed the following recommendations:[41]

- Unify expectations and pathways for early childhood workforce preparation by creating a more uniform system for certifying teachers, administrators, and practitioners across age groups

- Strengthen program content and equity developing program content standards in various areas of child development and teaching and incorporating field-based learning experiences into training

- Build a leadership pipeline by developing rigorous degree programs for EL administrators at the undergraduate and graduate levels and recruiting candidates who are existing EL teachers

- Increase faculty support in EL training programs by offering professional development to program faculty

The development of strong EL training programs is important but insufficient on its own for ensuring a higher-quality EL workforce. Because a significant portion of the existing population of EL teachers does not have a BA, careful thought must be given to encourage this group of educators to further their education. Most of these educators would be considered non-traditional students, and although many may have Associate's Degrees or may have taken some college coursework, this coursework may not align with the necessary requirements to transfer to a 4-year institution. Many EL teachers who return to earn their BA may be low-income or first-generation college students. Others may be English Language Learners or immigrants. Additionally, returning EL teachers are also typically older than traditional students, and some may be parents. Despite these challenges, EL teachers tend to be very motivated students, driven by their desire to share their expertise and gain skills. These realities suggest that any efforts to encourage or require EL teachers to earn their BA should have accompanying intensive personal and academic supports.

Examples of programs or initiatives that have helped EL professionals to pursue their EL degrees and credentials exist across the country. Two examples are provided in this white paper, one that focuses on EL teachers and another that trains EL administrators.

Santa Clara CARES

Santa Clara CARES is a collaboration of WestEd, San Jose State University (SJSU), and Santa Clara County. These entities came together to provide advising, coursework, and financial incentives for EL teachers to earn their BA from SJSU, resulting in additional Child Development Permits issued in Santa Clara County and increased professionalism in the field.[42]

Essential components to the success of the Santa Clara program were threefold: [43]

(1) Student supports, including counseling, advising, and transfer assistance for students moving from local community colleges to SJSU. The program included a cohort model of learning so that students could form relationships and act as support for each other. The program also provided assistance and training with technology skills, academic assistance, and outside conferences focused on professional and leadership development. Finally, the program provided financial assistance for all students, covering textbook and program costs, including instructors' time and the department chair's advising time.

(2) Accessibility, such that students were required to attend only one class per week, which was held in the evening for students who were working. Classes were hosted at a geographically convenient location.

(3) A carefully crafted delivery system for coursework, including coursework that aligns with typical BA requirements. Students in the Santa Clara EL cohort met the same requirements for

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graduation as traditional students. However, the courses and their sequencing were tailored to cohort needs and allowed the cohort to build confidence and skills over time. Degree completion is anticipated to take participants 3.5 years in addition to their transferred credits.

The Santa Clara program resulted in many successes. However, the evaluation also highlighted important challenges to prepare for in the development of programs like these in other contexts. These major challenges were: (1) transfer readiness and (2) student attrition and readiness.[44] A significant portion of the department chair's advising time was spent ensuring that teachers had the credits needed to transfer to SJSU appropriately. Due to challenges with transfer readiness, the start date of the program was delayed by 6 months in order to ensure that all participants had time to earn the transfer credits needed. One potential solution to this issue is to enroll students in the program up to 9 months prior to the program's start date in order to ensure that participants have time to adjust their community college coursework as needed in order to meet the requirements of the four-year institution. Additionally, in order to address issues of attrition, which might be inevitable given family and emergency issues that can arise, the program should have a wait list or pool of potential students from which to promptly draw in order to fill slots that become available.

United Way of Miami-Dade Early Childhood Program Administrator's Institute (ECPAI)[45]

Although child development and teaching coursework is integral to improving the quality of the EL teaching force, attention must also be given to the practical aspects of managing EL centers, particularly for directors of EL centers. In order to address the gaps in administrative knowledge that EL program directors often face, United Way of Miami-Dade County, as part of the Ready Schools Initiative (see more information about Ready Schools in Section V), has developed the ECPAI. ECPAI offers EL administrators a three-semester management and business leadership training program with all coursework and materials provided.[46] In addition to courses about fiscal administration, staff hiring, decision-making, and management, the program also connects administrators with local business mentors. ECPAI participants can earn continuing education units through the program or college-level course credits towards their Advanced Director Credential. Since its inception, more than 570 EL professionals have graduated from ECPAI.[47]

Job-Embedded Coaching

Improving teachers' credentials and qualifications through coursework is an important part of improving EL teaching quality and professionalizing the field. However, EL programs should not rely solely on external coursework to improve EL teaching. Job-embedded professional development is also important for teachers' improvement, and perhaps the most common form of job-embedded professional development is coaching.[48]

Coaching refers to "an adult learning strategy that is used to build the capacity of a parent or

colleague to improve existing abilities, develop new skills, and gain a deeper understanding of practices for use in current and future sessions."[49] Coaching varies in form, duration, and setting. It can be one-on-one or in groups, face-to-face or technologically based, or a one-off session or series of sessions. Although many forms of coaching are positively linked to better classroom instruction, stronger curriculum implementation, and richer teacher-child interactions, certain aspects of coaching have a greater impact on outcomes.[50,51]

Coaching should generally be done with a small number of learners for more than 10 hours across multiple occasions.[52] However, perhaps even more important than the coaching frequency is the quality of the coach. Coaches need to be adept at building relationships, and they should be able to provide targeted and specific feedback.[53] Using classroom environmental tools (e.g., CLASS, ECERS, ELLCO) can help coaches to provide more specific feedback. Because different coaches may have different strengths, it is important for coaching managers and organizers to bring coaches together to encourage consistency. Finally, technology-based coaching can be effective, but it must be implemented with supports that proactively engage EL teachers rather than having them act as passive learners.[54,55]

Compensation

Nationwide, only 10 states require public Pre-K programs to compensate their teachers on par with K-3 teachers; only 6 states require both private and public Pre-K programs to compensate their teachers commensurate with K-3 teachers.[56] On average, public Pre-K teachers across the country make approximately $44,500 per year, though private Pre-K teachers average over $10,000 less - $32,700.[57] This results in public Pre-K teachers earning $12,000 *less* than their counterparts who teach older children, and the gap grows to almost $27,000 when discussing Pre-K teachers at private Pre-K programs.[58] These numbers fall even more when including the wages of teaching assistants and teachers of children under 4.

In Indiana, the annual median wage for preschool teachers is $24,030, well below the nationwide average of $32,700.[59] These low wages could provide one explanation for the projected shortfall in the number of EL teachers in Indiana, which is projected to be over 8,000 teachers by 2022.[60] Low wages for EL teachers also contributes to increased teacher turnover and issues with teacher quality, as teachers with academic credentials and degrees prefer to work in settings where they are better compensated.[61]

One way that the federal government and states have attempted to address compensation issues is to enact state policies that require salary parity between Pre-K teachers and K-3 teachers. As mentioned earlier, only 16 states currently have policies like these in place, and although these

policies are important, they fail to address salary parity for teachers of children under 4.[62]

Another effort to address compensation for the EL workforce is the T.E.A.C.H. Early Childhood Scholarship Program and WAGE$ Project, both affiliated with the national nonprofit Child Care Services Association, which helps states to implement local versions of the T.E.A.C.H. and WAGE$ programs. The Teacher Education and Compensation Helps (T.E.A.C.H.) Project and WAGE$ provide scholarships for teachers taking courses that lead to credentials and degrees and provides bonuses or raises to recipients who complete their coursework.[63] States like North Carolina, Florida, and New Mexico are implementing these programs with success.[64] For example, in New Mexico, a small family foundation partnered with the local United Way to fund a pilot WAGE$ program. Results from the local pilot spurred the state to provide additional funds for the program, creating New Mexico INCENTIVE$, a statewide, sustainable program to improve EL teachers' credentials and compensation.[65]

Recommendations

- EL teachers should have at least a BA in a related discipline. However, existing EL staff may need intensive academic and personal supports to attain this degree.

- Job-embedded coaching offers another way for EL teachers to continue to improve. Coaching that focusing on specific learning goals or based on particular measurement tools will result in the greatest improvement.

- Nationally and in Indiana, EL teachers are significantly underpaid. Innovative models to encourage higher education and increased compensation for EL teachers include state policies and programs like T.E.A.C.H., WAGE$, and INCENTIVE$.

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VI. Affordable, High-Quality Enrollment

Access to high-quality EL programs improves the academic and life outcomes of children. In addition, access to these programs also increases the likelihood that parents will work and spend more time with their children. Some states, like Georgia and Oklahoma, have pursued universal programs for preschool since the 1990's in order to increase all families' access to high-quality EL.[66] These programs are expensive, however, and they do not address access or quality for EL program that serve younger children. An alternative to universal access to preschool programs is to ensure that existing EL programs – particularly those targeting at-risk families – continually strive to improve their quality and to make these programs more affordable.

Improving Quality
In order to focus on improving EL program quality, it is important to understand the components of high-quality EL programs. High-quality EL programs often share the following features:[67]

- Full-day programs that are 5 days per week

- Highly educated teachers (BA and ECE expertise) with compensation on par with K-3 teachers

- Small class sizes with low child:teacher ratios (at least 11:1)

- Monitoring and evaluation of children and teachers

- Teacher coaching and opportunities for professional development

- Appropriate learning standards, research-based curricula, and child assessments with intentional data-driven decision-making and teaching focused on specific learning goals

Indiana has made good progress on some of these quality features, such as the development of learning standards that are aligned with K-12 standards.[68] However, other areas, such as teacher qualifications, need additional attention.

High-quality EL programs require high-quality EL systems that support programs' continual improvement. The United States Department of Education's (USDOE) Race to the Top Early Learning Challenge (RTT-ELC) provides some guidance regarding the components of high-quality EL systems. Essential components of high-quality state EL systems include:[69]

- Statewide, high-quality early learning and development standards and assessment tools for young children;

- Family engagement and support;

- A workforce knowledge and competency framework, including a progression of credentials;

- Supports for EL educators in improving their knowledge, skills, and abilities;

- An early learning data system to improve instruction, practices, services, and policies; and

- State licensing and accountability systems for EL programs that take into account the components listed above.

The last feature – state licensing and accountability systems – has received national attention in the form of state Quality Rating and Improvement Systems (QRIS). Most states now have some version of QRIS for EL programs, and the presence of QRIS have been shown to improve the quality of EL programs.[70]

Indiana has had its QRIS, called Paths to Quality, since 2000. The system was piloted for several years and then became operational in 2008. Approximately 2,400 center-based and family child care programs participate in Paths to Quality.[71]

Indiana's Paths to Quality is based on four rating levels:[72]

Table 4. QRIS Ratings by Program Type		
	High-Quality Programs (%)	Total # Programs of Each Type
Licensed center-based programs	433	523
Licensed family child cares	478	3,035
Ministries	57	696
Total # Programs at QRIS Rating	968	4,254
SOURCE: Indiana Early Learning Advisory Committee		

1. Level 1: Programs meet health and safety needs of children

2. Level 2:Programs provide a physical environment that supports children's development and learning

3. Level 3: Programs use a planned curriculum to guide child development and prepare children for Kindergarten

4. Level 4: Programs achieve the highest indicator of quality, national accreditation by the National Association for the Education of Young Children (NAEYC)

The majority of EL programs in Indiana are at the lowest QRIS rating, largely due to the great number of family child care programs at this rating.[73] Licensed, center-based programs are more likely to earn high ratings. However, given that 71% of EL programs in Indiana are family child care programs and

only 16% of these programs are high-quality, the quality of family child cares deserves urgent attention.[74]

Purdue University's recent evaluation of Indiana's Paths to Quality indicates that programs' ratings are related to some environmental quality indicators and has resulted in some successes for Indiana's EL programs. The implementation of Paths to Quality has had striking success in increasing the number of EL programs that participate with the rating system and in providing supports to those providers. In September 2012, "88% of licensed centers, 59% of licensed homes, and 10% of registered ministries were participating with Paths to Quality."[75]

Assisting EL providers in continued quality improvement will include resources that allow EL providers to purchase high-quality curricula (see Table 6 for examples) and train teachers in their implementation. Investments in programs' family engagement and teachers' development (see Sections IV and V) will also assist providers with improving EL programs' quality.

Improving Affordability

The regulations and licensing requirements for EL programs can be complicated and expensive. Teachers and paraprofessionals in EL programs make meager salaries, and it is not uncommon for EL directors to forego salaries for some period of time. Despite these cost-saving measures at the programmatic level, many families still find quality EL to be expensive and out of reach. On average, paying for a high-quality EL program costs an additional $1,000 as compared to average EL programs, and costs for high-quality infant-toddler programs can exceed $10,000 per year.[76]

As described earlier, some states (e.g., Oklahoma, Georgia, Florida) have opted to create universal preschool programs that are free to all families. However, many states have not allocated the funds to invest in these kinds of programs, and these programs do not address the need for child care for younger children. Thus, many states have cobbled together funds to subsidize care for families.

One common way to provide assistance for child care to low-income families is to provide scholarships to families. Scholarships that allow for family choice from a list of qualified providers often are implemented via vouchers. Vouchers provide parents with the ability to make personal choices about EL programs, and they can help to draw in additional faith-based and private providers who may not typically have access to government funds.[77] In addition, vouchers – if reserved for use at high-quality programs – can incentivize and reward the growth of these programs.[78] Randomized control trials analyzing the effects of scholarships in the K-12 setting have found that students who use scholarships are more likely to graduate from high school, have increased reading scores, and greater likelihood of enrolling in competitive 4-year colleges.[79,80,81] In 2014, Indiana began implementation of On My Way Pre-K, a pilot program for at-risk 4-year-olds, which provides choices

to families attending high-quality EL programs. Initial findings from this program indicate that participating children showed significant cognitive and socioemotional growth, and families increased their involvement.[82]

Using an Integrated Approach

One way to ensure that funding is maximized is to provide funds that encourage organizations to work together so that they are able to braid funding streams dedicated to specific programs.[83,84] For example, nonprofit organizations focused on child and maternal health can leverage funds from the Department of Health and Human Services in collaboration with EL programs that may receive funding from the Department of Education. In the following paragraphs, two examples of comprehensive initiatives to integrate services across EL programs, community nonprofits and organizations, and the K-12 educational systems are presented - Ready Schools Miami initiative and Louisiana's Early Childhood Care and Education Network. Although these contexts are clearly different than the region served by the Welborn Baptist Foundation, many of the lessons and partnerships promoted through the initiatives could be applied in the southern Indiana context.

Ready Schools Miami

Ready Schools brings together health and educational organizations focused on young children to improve child and family outcomes. Partners include local universities, the K-12 system, United Way, a local educational foundation, and the local early learning coalition. The achievements of this group include:[85,86,87]

- **Collaboration on strategic planning**: monthly meetings as well as informal collaboration through attendance at each organization's board meeting

- **Connecting and leveraging resources**: workshops and professional development for teachers and parents offered by various organizations

- **Generating and sustaining community support**: advocacy for The Children's Trust, a publically financed support for Miami-Dade's EL initiatives

- **Supporting high-quality EL learning environments**: developing and strengthening the QRIS, funding wage supplements for teachers seeking additional credentials, Early Childhood Administrators' Institute, and a curricular resource and materials fair and training

- **Strengthening the transition from EL programs to elementary schools**: school visits for children and their parents and a curriculum alignment institute for Pre-K teachers

- **Increasing parent engagement**: family literacy programs, parent to parent services, and Parent Academy workshops

- Using data for program refinement: implementation of a Web-based Early Learning System (WELS) in which providers enter data on a regular basis

Ready Schools thus provides one example of interagency collaboration, which has a significant and positive effect on staff compensation and turnover and children's Kindergarten readiness.

Louisiana's Early Childhood Care and Education Networks

The state of Louisiana provides another example of an integrated approach to EL programming. In 2012, Louisiana passed legislation that required the state to develop a series of local EL networks led by lead agencies that are tasked with fostering collaboration among local K-12 systems, Early Head Start/Head Start, publicly funded child care centers, and private child care providers.[88] The lead agencies conduct a needs assessment of their respective region, analyzing the number of providers and spaces currently available, as well as those that are already filled. The lead agencies also submit centralized funding requests to the state, detailing the number of seats that they are requesting for each type of program. Lead agencies' keen awareness of the local EL landscape ensures that they are maximizing the EL programs already available, making EL more affordable to providers and accessible to families.[89]

In addition to managing the supply of EL slots in their region, lead agencies must also ensure that all EL programs in their area are evaluated using the CLASS. In Louisiana, program ratings are based solely on CLASS scores, and lead agencies will be responsible for providing technical assistance to programs based on their ratings.[90]

Recommendations

- Investments in EL programs' continued improvements should assist providers with implementing family engagement practices and improving teacher quality.

- Research on scholarships in the K-12 setting and in Indiana for high-quality EL programs indicates improved outcomes for children who receive them. Where possible, high-quality EL programs should maintain or expand their participation in voucher programs.

- Improving interagency collaboration and collaboration across EL programs and community partners can increase access to programs and affordability by more efficiently leveraging resources. Examples of these efforts include the Ready Schools Miami initiative and Louisiana's Early Childhood Care and Education networks.

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VII. Academic Supports

In order to ensure that more children are reading on grade-level by the end of the 3rd grade, it is essential for children who are falling behind to be identified early so that they can receive the necessary interventions and support. Once struggling students are identified, interventions should be applied early in order to prevent further gaps in learning. [91,92,93] Given the Welborn Baptist Foundation's interest in literacy and math interventions implemented by non-school organizations, this section focuses on research around existing tutoring programs and research-based curricula that can be implemented by non-school organizations.

Existing Tutoring Programs

Across the country, non-school organizations have partnered with schools to implement reading intervention programs, which vary in their effectiveness.[94] Research suggests that non-school-based intervention programs should:[95]

- Focus on early elementary or high school students
- Range from 44-48 hours
- Offer one-on-one tutoring or mixed student groupings
- Optional: Provide literacy materials for students

Two non-school interventions that include tutoring are described below, as well as a low-cost reading intervention designed to offset summer reading loss.

AARP Experience Corps

AARP's Experience Corps is a program in which adults 50 and over work with struggling K-3rd grade readers to ensure that all children can read by the end of 3rd grade. According to AARP, students who worked with Experience Corps tutors achieved 60% more improvement in critical literacy skills than their peers.[96] The program uses three implementation models – one-on-one tutoring, group tutoring, and classroom assistance. Since 2008 when Experience Corps was launched in Evansville, the program has grown to serve 55 classrooms across 6 schools, mostly through the classroom assistance model.[97]

Start Making a Reader Today (SMART)

SMART is an Oregon-based literacy program that provides a model for literacy interventions in other areas. The Standard SMART design involves pairing an adult volunteer with children for two, one-on-one 30-minute reading sessions. Children read with two different volunteers for each week for seven months. Children are also allowed to take home two books per month to share with their families.[98]

Students are selected for participation with SMART based on several factors, including struggling readers or children who are in need of one-on-one relationships with caring adults.[99] Results from SMART evaluations show children who participate with SMART are more likely to reach state reading benchmarks and to show stronger growth in alphabetics, fluency, and comprehension.[100,101] In addition to the elementary school Standard SMART model, the SMART program also includes PreKSMART and KSMART for Prekindergarten and Kindergarten students.

Annual Book Fairs

The Annual Book Fairs intervention provides students in high-poverty elementary schools with books to read over the summer for three consecutive summers starting at the end of 1st or 2nd grade. Students choose 12 books from hundreds of options, and the books are delivered to students on the last day of school. The intervention is relatively low-cost, and randomized control trials indicate that after three years of participation students increased reading achievement by 35-40% of a grade level.[102]

Research-Based Supplemental Literacy Interventions

In addition to comprehensive volunteer tutoring or intervention designs like the Experience Corps or SMART, non-school organizations may choose to implement supplementary reading curricula on their own. The United States Department of Education's What Works Clearinghouse (WWC) synthesizes research on educational programs to identify those that improve student outcomes. The table below identifies supplemental intervention programs for early elementary students that are struggling with literacy. Only supplementary reading programs are included so that they are able to build upon what students are already learning at school.

All research included as part of the WWC are represented by rigorous study designs – either randomized control trials or quasi-experimental, matched designs. This table focuses on programs that can be used in small groups or individualized settings and that are supplements to primary curricula so that programs can be used with organizations intending to support learning that is already underway at school.

Table 6. Early Elementary Literacy Intervention Programs			
Curriculum	Description	Subject	Ages
Corrective Reading[103]		Literacy - reading accuracy (decoding), fluency, and comprehension skills	3+
Earobics[104]	Interactive software that provides students with systematic instruction in early literacy skills as students interact with animated characters; adjusts to students' ability levels.	Literacy – phonemic awareness, auditory processing, and phonics, as well as the cognitive and language skills required for comprehension	PK-3
Fast ForWord[105]	Computer-based reading program intended to help students develop and strengthen the cognitive skills necessary for successful reading and learning	Literacy - alphabetics, comprehension, reading fluency	K-3
Lindamood Phoneme Sequencing (LiPS)[106]	Teaches students the skills needed to decode and encode words and to identify individual sounds and blend words	Literacy - phonemic awareness	K-3 struggling readers
Peer-Assisted Learning Strategies (PALS)[107]	Supplemental peer-tutoring program which pairs students together to perform structured sets of activities in reading and math	Literacy and math	2-6
Reading Recovery[108]	Short-term intervention that provides one-on-one tutoring to promote literacy skills	Literacy – reading and writing strategies	1
Read Naturally[109]	Supplemental reading program using a combination of texts, audio CDs, and computer software	Literacy - general reading achievement, reading fluency	2-4
Read Well[110]	Students read stories and are given opportunities to discuss vocabulary concepts presented in each story	Literacy - English language development	K-1

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Sound Partners[111]	Phonics-based tutoring programs for students with below average reading skills; designed specifically for tutors with minimal training and experience	Literacy - alphabetics, fleuncy, and comprehension	K-3
Waterford Early Reading Program[112]	Software-based curriculum designed to promote reading, writing, and typing	Literacy - alphabetics	K-2

Math Interventions

Although a wide range of literacy interventions have been designed and studied, fewer interventions have focused on math instruction. Instead, much of the research on math interventions has focused on characteristics of effective math instruction and interventions rather than on specific programs. The following characteristics are important when considering tutoring or intervention programs that will be successful with struggling math students:[113]

- Instruction during the intervention should be explicit and systematic. It should include providing models of proficient problem-solving, verbalization of thought processes, guided practice, corrective feedback, and frequent cumulative review

- Interventions should include instruction on solving word problems that is based on common underlying structures

- Intervention materials should include opportunities for students to work with visual representations of mathematical ideas and interventionists should be proficient in the use of visual representations of mathematical ideas

- Interventions at all grade levels should devote about 10 minutes in each session to building fluent retrieval of basic arithmetic facts

Recommendations

- Early and frequent screening for children must be an essential component of EL programs. The earlier that a child is identified, the more likely that an intervention will be successful.

- Non-school organizations supporting students should use research-based interventions. Some of these interventions are organization-based tutoring programs (e.g., AARP's Experience Corps, SMART) while others are curricula or activities that can be implemented by any non-school organization (e.g., Annual Book Fairs, literacy interventions).

- While a wide range of research-based supplemental interventions exist for literacy in the early

elementary grades, fewer exist for mathematics. Instead, mathematics interventions focus on the characteristics of strong mathematics instruction.

- Mathematics interventions should focus on practices that make mathematics thinking explicit, include work problems, work with visual representations, and promote fluency with arithmetic.

VIII. Evaluating Grant Impact

As Welborn Baptist Foundation reviews grant applications to identify research-based initiatives for its four EL strategies, it will be equally important for the Foundation to evaluate the success of the projects that it funds. Evaluation of these projects should involve quantitative and qualitative outcome measures. However, it should also include data collection during the planning and implementation stages of funded projects in order to better understand the context and processes surrounding the projects. This will help to identify advantages and challenges for future projects and scenarios in which projects are more likely to be successful.

Categories of processes, attributes, and outcomes, as well as examples of data that could be collected, are included in the table below.

Table 7. Grant Evaluation Data	
	Sample Processes, Attributes, and Outcomes to Be Measured
Inputs	Grantees' qualifications and prior experience Socioeconomic and demographic characteristics of families served by grantees Local, state, and national policies, regulations, standards, and funding Opportunities for education/professional development (access to community colleges and other institutions of higher education like University of Southern Indiana, Ivy Tech State College, University of Evansville)
Activities	Develop partnerships with EL programs, schools, and support organizations for implementation and quality support Implements grants with a focus on research-based practices and fidelity to proposal Families, local EL programs, and schools partner with grantees and opt to participate in grantee programs

Short-, Mid-, and Long-Term Outcomes[114]	**Short-Term:** Parents' increased knowledge of children's academic and socio-emotional development Parents with greater access to high quality EL programs and services Providers receive more professional development and training around instruction, classroom environments, and child interactions **Mid-Term:** More K-3 students develop grade-appropriate reading and math skills EL providers deliver effective instruction in high-quality classroom environments **Long-Term:** Children arrive at Kindergarten ready to learn More 3rd graders meet or exceed grade-level benchmarks for school success
Organizational and Contextual Factors	Grantees' organizational culture and leadership Shared goals, relationship quality, and mutual respect among grantee partners Type and supply of child care arrangements for low-income and other families State's policy environment for EL

Recommendations

- Grant impact evaluations should be integrated into as many grants as possible in order to facilitate learning from previous grant-making experiences and improving grant decision-making.

- Data for grant evaluations should be collected throughout the grant and project process – from the planning stages of projects through the end. Child outcomes should also be an essential component evaluating grant success.

IX. Conclusion

The Welborn Baptist Foundation has decided to tackle the important but difficult terrain of Early Learning programs. The decentralized landscape of EL programs complicates efforts to coordinate and improve EL programs. However, the benefits that children derive from these programs makes the work essential.

The Foundation has chosen four strategies to impact EL programs, and all of these strategies have a foundation in the research literature. Specific recommendations for each strategy are:

Family Engagement

- EL parent involvement activities with the strongest research bases are: home visit programs, transition activities for children moving from EL programs to the K-12 system, and parent activity programs. Home visits, in particular, should be coordinated across providers as much as possible to make sure that resources are used efficiently.

- Dedicated staff at EL programs can facilitate parent engagement and ensure that it becomes an integrated part of programming.

Provider Effectiveness

- EL teachers should have at least a BA. However, existing EL staff may need intensive academic and personal supports to attain this degree.

- Job-embedded coaching offers another way for EL teachers to continue to improve. Coaching that focusing on specific learning goals or based on particular measurement tools will result in the greatest improvement.

- Nationally and in Indiana, EL teachers are grossly underpaid. Innovative models to encourage higher education and increased compensation for EL teachers include state policies and programs like T.E.A.C.H., WAGE$, and INCENTIVE$.

Affordable, High-Quality Enrollment

- Investments in EL programs' continued improvements should assist providers with purchasing high-quality curricula, implementing family engagement practices, and improving teacher quality.

- Research on scholarships in the K-12 setting and in Indiana for high-quality EL programs

indicates improved outcomes for children who receive them. Where possible, high-quality EL programs should maintain or expand their participation in voucher programs.

- Improving interagency collaboration and collaboration across EL programs and community partners can increase access to programs and affordability by more efficiently leveraging resources. Examples of these efforts include the Ready Schools Miami initiative and Louisiana's Early Childhood Care and Education networks.

Academic Supports

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- Mathematics interventions should focus on practices that make mathematics thinking explicit, include work problems, work with visual representations, and promote fluency with arithmetic.

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