CHILDREN'S LEARNING INSTITUTE™

Learning from science.

The Texas School Ready! Project:

Preparing Young Texans to Learn

Fiscal Year 2010

UTHealth™

The University of Texas
Health Science Center at Houston

December 1, 2010

Dear Governor Perry, Lieutenant Governor Dewhurst, Speaker Straus, Chairwoman Shapiro, Chairman Eissler, Chairwoman Zaffirini, Members of the Legislative Budget Board, and Commissioner Scott:

I am pleased to share with you results pertaining to the *Texas School Ready! Project*, for FY 2010. The *Texas School Ready! Project* is the result of six years of grant funded work from the Institute of Education Sciences (IES), National Institutes of Health (NIH), United States Department of Education (USDOE), the Texas Education Agency (TEA) and the Texas Workforce Commission (TWC) to prioritize "school readiness" for vulnerable children in Texas. Pursuant to Section 29.160, subsection (e), of Senate Bill 76 of the 78th Legislative Session, and Senate Bill 1, General Appropriations Act, Article III Rider No. 41 and Article VII Rider 27 of the 81st Legislative session, the Children's Learning Institute is pleased to present the following report for your review: ***The Texas School Ready! Project*: Preparing Young Texans to Learn.**

Since its inception as the Center for Improving the Readiness of Children for Learning and Education (CIRCLE), the Children's Learning Institute (CLI) at The University of Texas Health Science Center at Houston has developed and implemented the Texas Early Education Model (TEEM) to now serve more than 40,000 at-risk children, and developed and implemented the nation's only early childhood quality rating system, the *Texas School Ready!* Certification System (SRCS), that evaluates program effectiveness by linking teacher practices to student outcomes in kindergarten.

The Children's Learning Institute is unique in the range of research and programs it implements state and nationwide, and its philosophical commitment to ensuring real and lasting change for young children and families remains its utmost priority.

Should you have any questions about the details contained in this report, please contact the Director of Statewide Initiatives, Dr. John W. Gasko, at 713.500.8253, or John.W.Gasko@uth.tmc.edu. Additionally, please do not hesitate to call on me at anytime.

Sincerely,

Susan H. Landry, Ph.D.
Executive Director
Michael Matthew Knight Memorial Professor
Albert and Margaret Alkek Endowed
Chair in Early Childhood

CHILDREN'S LEARNING INSTITUTE
Learning from science.

UTHealth
The University of Texas
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CLI Accomplishments

Designated the **State Center for Early Childhood Development** by Governor Rick Perry

Currently **serving more than 40,000 at-risk children** statewide through the Texas Early Education Model (TEEM)

Leading Institute at UT Health Science Center at Houston in **securing competitive grants**, such as National Institute of Health funding; received $56 million in federal grants and $70 million in state and private grants since 2005

Developed and successfully implemented the nation's only **mixed-delivery quality rating system** that links pre-k programs to **student outcomes** in kindergarten.

Established the **Dan L. Duncan Children's Neurodevelopmental Clinic** in 2008

Collaborated with researchers and educators from around the nation to **revise and update the Texas Pre-Kindergarten Guidelines**

Nationally recognized for advancing research in brain behavior. Of the approximately 20 magnetoencephalography (MEG) labs in North America, CLI's lab is unique as the only lab with the capability to scan young children.

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Pursuant to Texas Education Code, Subchapter E, Section 29.160 (e) and Senate Bill 1, General Appropriations Act, Article III, Education, Texas Education Agency Rider No. 41 and Article VII, Business and Economic Development, Texas Workforce Commission Rider No. 27 of the 81st Legislative Session, the Children's Learning Institute at the University of Texas Health Science Center at Houston is pleased to present the following report:

The Texas School Ready! Project: Preparing Young Texans to Learn

Introduction and Overview

The *Texas School Ready! Project* is the result of seven years of grant funded work from the Institute of Education Sciences (IES), National Institutes of Health (NIH), United States Department of Education (USDOE), the Texas Education Agency (TEA) and the Texas Workforce Commission (TWC) to prioritize "school readiness" for disadvantaged children in Texas. The Texas Early Education Model (TEEM) and the *Texas School Ready!* Certification System (SRCS), the two largest initiatives associated with this project, were developed to ensure this priority is realized throughout the state through a focus on increasing children's school readiness through research-based curriculum, classroom resources, technology-driven child progress monitoring, teacher/staff professional development with mentoring, and program evaluation. The project integrates public school programs with federal Head Start programs and community-based child care (including for-profit, non-profit, faith-based and federally subsidized settings) in order to support the school readiness of at-risk 3 and 4 year-old children.

The *Texas School Ready! Project* is driven by the following assumptions:

- Early childhood is a critical period for building school readiness skills in language, literacy, mathematics, social, emotional and cognitive development.
- Cognitive readiness can be achieved in ways that support the whole child.
- Research-based, comprehensive curricula are essential classroom tools.
- Responsive teaching promotes social and cognitive development.
- Progress monitoring linked to changes in instruction better assures school readiness.
- Effective professional development with on-going mentoring for teachers assures goals are achieved.
- Program effectiveness can be objectively measured.

Working with these assumptions, and through the implementation and sustainability of quality programs, the *Texas School Ready! Project* strives to ensure that disadvantaged children arrive at kindergarten well prepared and ready to succeed.

Texas Early Education Model (TEEM)

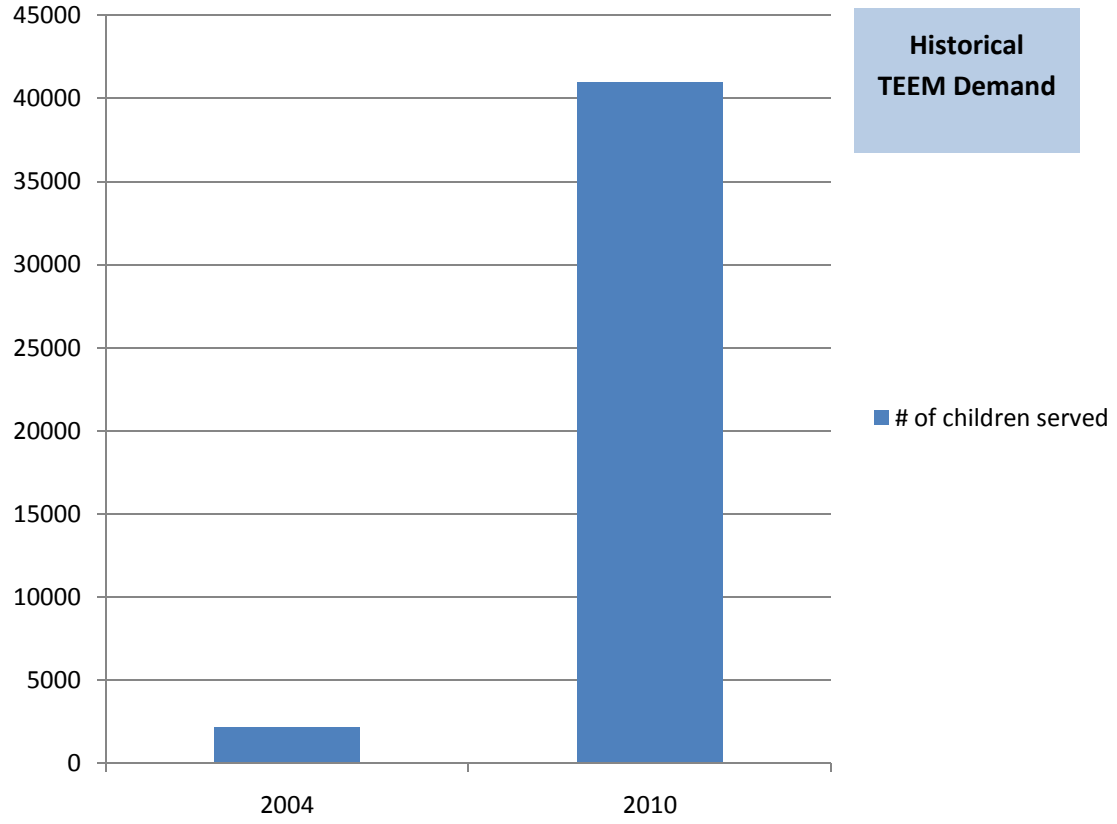
We know that literacy is a prerequisite to full participation in American society. Historically speaking, throughout the nation and particularly in Texas, young children from disadvantaged backgrounds read and write at levels so low when they enter school that they become at-risk for educational failure. As a result, achievement gaps between at-risk and non-at-risk student populations start early and, as history suggests, continue throughout the course of many of these students' education experiences.

Historically speaking, throughout the nation and particularly in Texas, young children from disadvantaged backgrounds read and write at levels so low when they enter school that they become at-risk for educational failure.

The *Texas School Ready! Project* was developed and implemented to meet this reality head-on and find community-based solutions to inequitable levels of school readiness. Since 2003, when TEEM was initially piloted statewide, local communities have advanced substantially toward collaborative efforts to address the need to effectively prepare children for school success.

Growth

Since the project began, TEEM communities across the state have responded by rethinking the way they prepare their youngest Texans for school. Community-based partnerships have been developed and required to implement coherent, comprehensive, cost-conscious and scientifically research-based approaches toward school readiness. In Fiscal Year 2004, the first year of the project, there were 11 community-based grantees throughout the state serving 2,140 children. In Fiscal Year 2010, through a combination of TEA Rider 41 and TWC Rider 27 funding, there were 30 grantees serving over 40,000 children.



Effectiveness

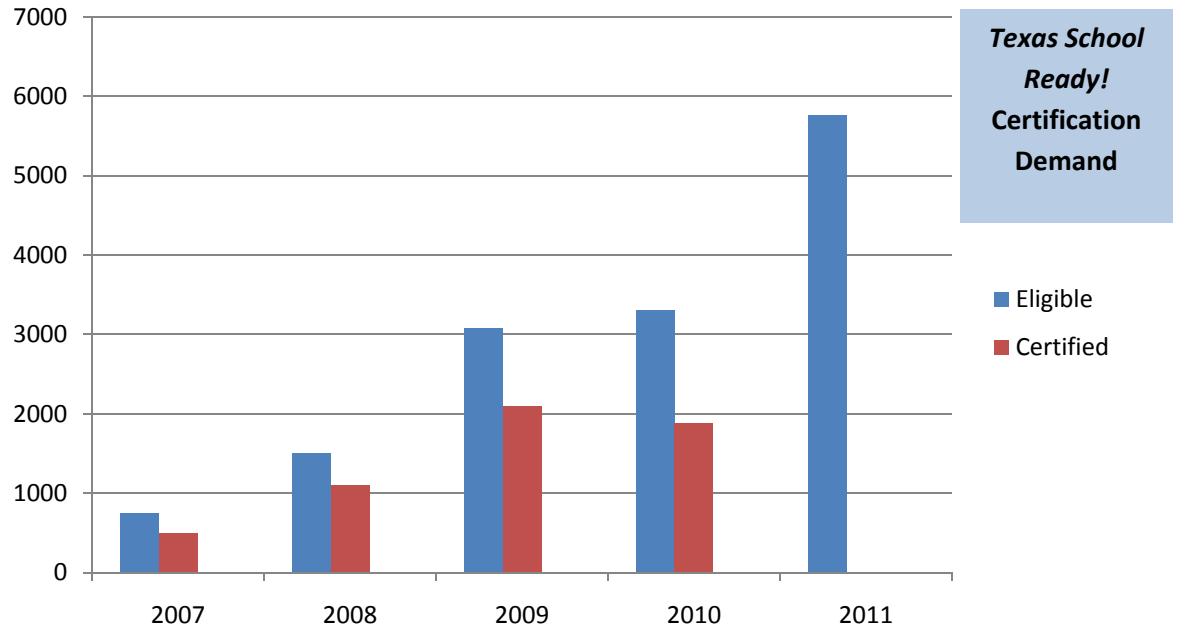
Success in early literacy is indicative and predictive of later literacy achievement and what children learn early in their education makes school success possible. A preponderance of research suggests that children who perform well in the following literacy domains continue to do well into high school: Phonological Awareness, Vocabulary Development, and Letter Knowledge. The *Texas School Ready! Project* emphasizes developmentally appropriate assessments and on-going child progress monitoring in these domains and has found that thousands of disadvantaged children across the state have demonstrated substantial strides towards the goal of school readiness. This is not only reflected by their assessment scores, but also in the number of classrooms among diverse programs attaining *Texas School Ready!* certification. Appendices 2 and 3 included in this report depict statewide child progress results

on key literacy assessments throughout the course of the pre-k year, as well as *Texas School Ready!* certification results for educators preparing children to enter public school Kindergarten. These results indicate that children who participate in TEEM classrooms demonstrate significant gains on key predictors of early literacy. The key to these gains is the TEEM approach (see Appendix 5 for a summary of a recently published research paper by the prestigious *Journal of Educational Psychology* that describes the efficacy of TEEM), which helps teachers and other early childhood professionals to provide learning activities that are age appropriate and effective for disadvantaged children.

Texas School Ready! Certification System

In 2005, the 79th Texas Legislature passed a unanimous, sweeping early childhood educational reform to establish the *Texas School Ready!* Certification System. The certification system provides parents and key public stakeholders with critical information about whether public and private early childhood programs are preparing children for success in school. The Children's Learning Institute partnered with TEEM communities across the state to develop and pilot the system successfully throughout Texas, and since inception the total number of early childhood programs achieving certification and recognition as *Texas School Ready!* have dramatically increased.

In FY 2010, 1,881 *Texas School Ready!* certifications were awarded statewide to early childhood education providers (in public school, Head Start, and community-based child care settings) that are teaching children the academic and social skills they need to be successful in school. Texas now has the best system in the nation to inform the public about the quality of their early childhood programs; a system that links early childhood program data with child outcome data in kindergarten. In FY 2011, the estimated demand for certification is 5,760 classrooms.



FY 2010 Project Improvements and Innovations

During FY 2009, the State Center for Early Childhood Development identified several project improvement goals, based on broad community and stakeholder feedback. In FY 2010, the State Center was successful in accomplishing:

Goal: Increase access for more early childhood programs to participate in the *Texas School Ready!* Certification System (SRCS). Currently, CLI has reached its maximum funded capacity to serve early childhood programs throughout the state. However, there continues to be considerable demand for access to the system, especially from private child care providers.

Result: Worked closely with partners and community-based advocates to develop an initial strategy to allow a fee-based option allowing programs without access to the SRCS to use their own funds to enable future participation. It is the goal of the State Center to analyze approaches to allow universal access to the SRCS on a voluntary basis to those outside of currently funded state early childhood initiatives. The State Center projects that this additional feature to the SRCS will be operational beginning in FY 2011.

Goal: Develop a technical assistance strategy to better examine statewide community-based data and assess where children are experiencing stagnant language and literacy growth in order to provide more intensive, research-based services based on a modified Response to Intervention (RtI) model.

Result: A Prekindergarten Response to Intervention (P-RTI) professional development on-line course and, *Developing Talkers*, a highly scripted series of read aloud lessons were developed to support teachers in providing instruction that meets the needs of all children through a tiered instruction and assessment framework. *Developing Talkers* supports early childhood teachers to enhance at-risk children's oral language development, in both English and Spanish, through targeted large and small group interventions.

In addition, throughout FY 2010, the State Center developed several innovations to the project, including:

- Developed a monitoring tool, the *Texas School Ready!* On-Line Monitoring System (TOMS) to assist local communities to track performance metrics at the local level in order to better support school readiness outcomes.
- Revised and updated existing eCIRCLE on-line professional development modules in order to include more current research and better video examples for teachers. Developed 3 new on-line courses to help teachers improve children's social emotional development, work effectively with children with special needs, and improve children's vocabulary.
- Developed a Classroom Observation Tool (COT), accessed on-line through the TOMS system, to facilitate improvements to the ways that project mentors and coordinators

work with teachers to improve their instructional strategies in working with young learners.
- Developed a new mentoring/coaching strategy where project mentors and coordinators videotape teachers in their classroom environments to help them reflect and improve their instructional strategies and understand how children respond to these strategies.
- Developed and conducted 2 high-level research summits to educate public stakeholders in Texas, especially early childhood leaders and practitioners, about how to improve school readiness outcomes for young learners.

Future Project Goals

The *Texas School Ready! Project* has the following current and future goals:

- Enhance and strengthen our ability to provide technical assistance to all providers of early childhood education to ensure that all children are prepared to succeed in school. Currently, the State Center assumes a significant technical assistance role associated with the Prekindergarten Early Start Grant, and was named the technical assistance provider by the Texas Education Agency for the lowest performing campuses in public school districts. In addition to providing technical assistance to these grantees, the State Center is uniquely poised to begin offering specialized technical assistance to address the needs of children with developmental delays such as Autism Spectrum Disorder, as well as the unique needs of English Language Learners.
- Continue to add more Commissioner of Education-approved kindergarten readiness screeners to the *Texas School Ready!* Certification System.

For questions regarding information contained in this report, or questions about the work of the State Center for Early Childhood Development, please contact Dr. John W. Gasko, Director of Statewide Initiatives, at 713.500.8253 or John.W.Gasko@uth.tmc.edu

Appendix 1:

Texas School Ready! Project: Statewide Grantees

2009-10 *Texas School Ready! Project* grantees and numbers of classrooms

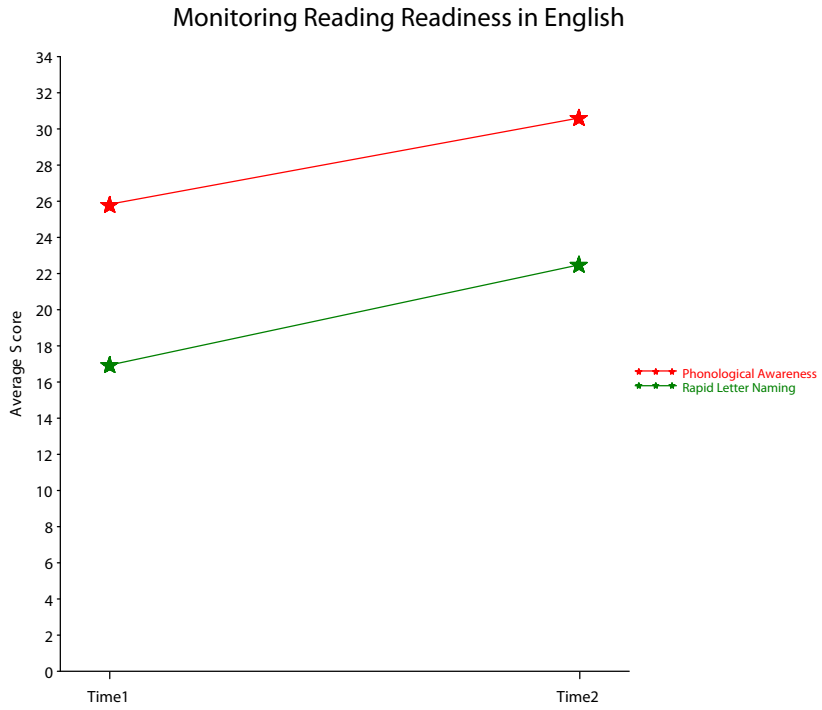
ESC Region	Grantees	Child Care	Head Start	Pre-K	Total
16	Amarillo College	24	5	26	55
13	Austin ISD	18	9	29	56
5	Beaumont ISD	21	15	13	49
20	Carrizo Springs Affordable Housing, Inc.	7	29	26	62
11	Child Care Associates	31	31	24	86
10	Child Care Group	25	52	34	111
4	Collaborative for Children	13	14	25	52
6	College Station ISD	10	12	3	25
10	Dallas ISD	2		20	22
20	Family Service Association	30	28	24	82
9	FHK & Bowie ISD	3	5	9	17
20	Harlandale ISD			36	36
4	Kids R Kids Group	62	38	14	114
10	Region 10 ESC	6	8	22	36
18	Region 18 ESC	41	24	48	113
19	Region 19 Head Start/Early Head Start	19	34	44	97
2	Region 2 ESC	6	58	9	73
7	Region 7 ESC	21	20	23	64
8	Region 8 ESC	11	30	37	78
6	Sam Houston State University	9	16	30	55
15	San Angelo ISD	14	20	12	46
20	San Antonio ISD	1		52	53
4	San Jacinto College	22		6	28
1	Teaching, Mentoring Communities (TMC) - Laredo	47	54	5	106
1	Teaching, Mentoring Communities (TMC) - McAllen	10	24	10	44
3	Victoria ISD & Calhoun County ISD	12	23	35	70
1	Workforce Solutions Cameron	43	60	61	164
12	Workforce Solutions of Central Texas	14	15	11	40
17	YWCA Lubbock	7	17	5	29
	Grand Total	**529**	**641**	**693**	**1863**

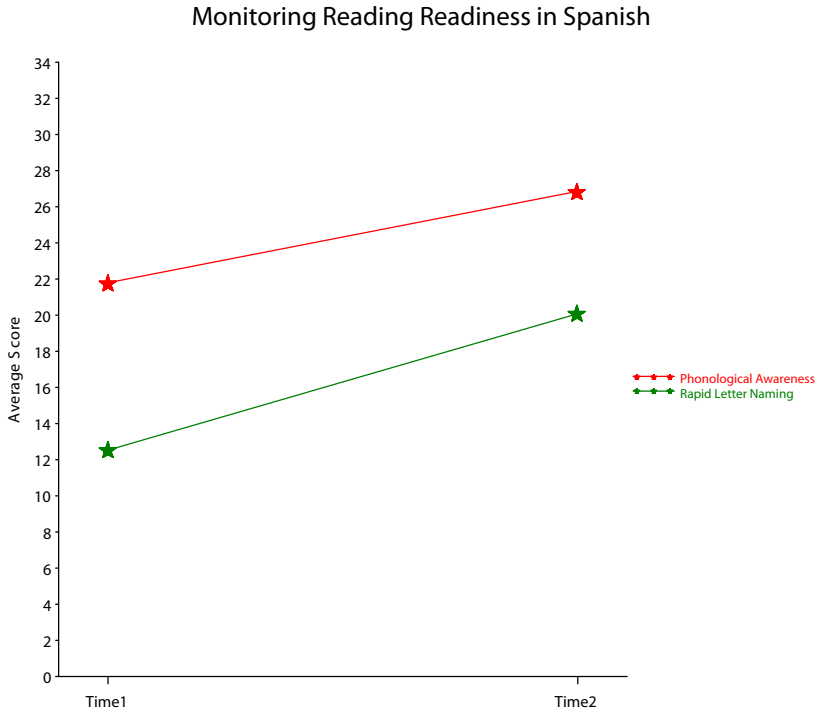
Appendix 2:

Texas School Ready! Project Results: Child Progress Monitoring

2010 Texas School Ready! Project Results
Progress Monitoring

Progress monitoring of children's reading readiness is a key feature of the TEEM/Texas School Ready! model. The two graphs below depict progress monitoring results at two distinct time periods during FY 2010, and demonstrate gains that children made in their progress towards school readiness. The red line depicts the average score on Phonological Awareness for all children in the project while the green line depicts the average score on Rapid Letter Naming. Both scores are further broken down for tests given in English and Spanish. These two scores are important indicators that correlate highly with a child's success upon kindergarten entry and longer term reading success. The more that young learners have an early mastery of letters, words, and sounds the better they tend to do in school as they progress into the upper elementary grades and beyond.





Appendix 3:

Texas School Ready! Project Results: Certified Classrooms

2010 *Texas School Ready! Project* Results

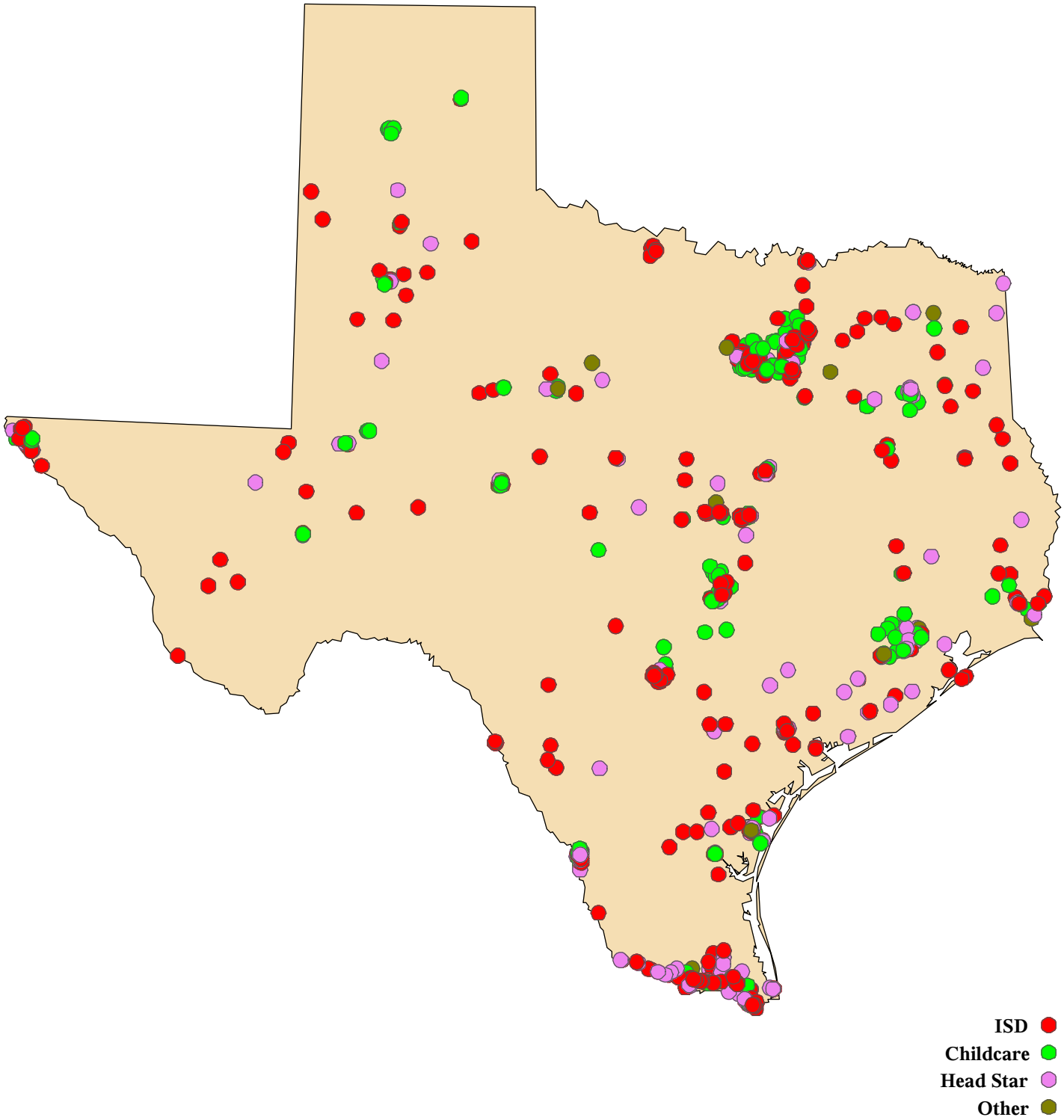
School Readiness Certification System

The Texas School Readiness Certification System is an empirically-based statewide assessment of the factors in preschool that promote school readiness in kindergarten. Each year, preschools provide information about their facilities, teachers, and students. The following year, children are assessed on their literacy and social development in kindergarten. These data are then combined and analyzed in order to certify the preschool classrooms that are promoting school readiness. Below is a summary of the certified classrooms. The first table reports on our most recent certification cohort, and the following table presents information about certified classrooms since we began the program. On the following page, we show the distribution of certified classrooms across the state.

2010 *Texas School Ready!* Certifications			
Type of Program	**Classrooms**	**Teachers**	**Students**
Childcare	205	211	2,682
Head Start	337	349	4,660
ISD	1,173	1,021	21,923
Other	50	49	833
Total	1,765	1,630	30,098

Historical *Texas School Ready!* Certifications			
	Classrooms	**Teachers**	**Students**
Total across All Years	5,496	5,333	91,749

2010 *Texas School Ready! Project* Results
School Readiness Certification System



Appendix 4:

Children's Learning Institute : FY 2010
Financial Expenditures

Appendix 4 contains financial reports required by Senate Bill 1, General Appropriations Act, of the 81st Texas Legislature. These financial reports detail the use of all state funds expended by the Children's Learning Institute at The University of Texas Health Science Center at Houston (UTHSC-H) to improve school readiness outcomes for young learners across Texas. The categories depicted in the financial reports reflect required line items associated with Texas Education Agency expenditure reports and are defined as follows:

Payroll Costs: Costs associated with salaries and fringe benefits for UTHSC-H employees who dedicate time and effort to the project. These employees include leadership, faculty, project management, administrative staff, and research assistants.

Professional & Contractual Services: *The Texas School Ready! Project*, Technical Assistance to Pre-Kindergarten Early Start Grant and the Higher Education Partnership Grant provide grants to local communities that operate according to a reimbursement-based cost model. Each fiscal year, CLI requests proposals from local communities throughout the state and once proposals are received and grants awarded, each local community grantee receives a contract for services. Costs reimbursed to local community grantees through these contracts include salary and fringe benefits for project employees plus certain expenses for office space, technology and supply costs. For Fiscal Year 2010, there were 30 community-based grantees throughout the state. Costs also include expenses related to the *Texas School Ready!* Certification System (SRCS), web-based progress monitoring and professional development licenses, substitute teacher pay to allow teachers to attend professional development training classes and the *Texas School Ready!* Online Monitoring System (TOMS).

Supplies & Materials: CLI purchases and distributes school readiness-focused classroom materials/kits and Response to Intervention (RTI) kits to local community grantees in order to assist young children with their learning. In addition, this category includes the costs to procure technology needed to conduct child progress monitoring three times per year as well as the cost of individual child licenses for the progress monitoring and individual teacher licenses for on-line professional development. Also included in this category are information technology costs including net books for field staff and desktop computers.

Other Operating Costs: These expenditures include costs for field staff travel throughout the state. Given the extensive reach of local projects and Texas' diverse geography, mentors and coordinators in local communities frequently must travel to and from multiple locations in order to serve early childhood education programs. This need is especially acute in rural areas. Additional costs reimbursed to local community grantees include teacher incentives, field staff training, teacher training, professional development, copying and printing of training materials and state-based curriculum.

Indirect Charges: These expenditures reflect costs associated with the support and oversight provided to the project by UTHSC-H. These expenditures include office space and equipment and a variety of contract oriented services that include human resources, information technology, procurement, accounting, and legal support.

Project 7016
09/01/09-08/31/10
$7,150,000

Texas School Ready!
(Texas Education Agency Funds, Rider 41)

Class/Object Description	Expenses
Payroll	**818,123.84**
Professional and Contracted Services	**2,065,497.21**
Purchase Service Agreements	1,985,356.47
TOMS (Phase 1, 2 & 3) technology upgrade	29,196.60
Long Distance Service/Conference Calls/Cell Phone/Blackberry	11,293.31
Individual Consultants	12,613.78
Substitute Teacher to Attend Professional Development	27,037.05
Supplies and Materials	**2,589,732.84**
Office and Computer Supplies/Training Supplies	11,099.19
Curriculum/School Readiness and other Materials Kits	2,121,225.48
Progress Monitoring Licenses/eCIRCLE Professional Development Licenses/Training Resource Licenses	295,775.52
Netbooks/Progress Monitoring Tools/Computer and other Technology Supplies/ Software and Licenses	161,632.65
Other Operation Costs	**628,571.86**
In State Travel	55,560.15
Training of Trainers costs (seminar, space rental,travel & parking, etc)	35,939.99
Copies/Printing for Training Materials, Cost of Training of Trainers Seminar & Institute/Training Materials Shipping and Postage/UCT Parking	45,728.54
Professional Development Costs (registration,books,tuition/teacher incentive) and Extra Day of RTI Training	491,343.18
Total Direct Costs	6,101,925.75
Indirect Costs (15%)	915,288.86
Total Expenses	**7,017,214.61**

**Unexpended balance of $132,785.39 carried forward to 02/28/11*

Project 7158
09/01/2009 - 08/31/2010
$11.7M

Texas School Ready!
(Texas Workforce Commission Funds, Rider 27)

Class/Object Description	Expenses
Payroll	**1,366,827.59**
Professional and Contracted Services	**4,264,163.51**
Professional Service Agreements /Purchase Service Agreements	2,871,194.73
TOMS (upgrade to current application & phase 3) Technology Upgrade	50,276.40
Long Distance Service/Conference Calls/Cell Phone/Blackberry	7,756.54
Individual Consultants	3,750.00
Substitute Teacher to Attend Professional Development	16,135.84
School Readiness Certification System Technology	1,315,050.00
Supplies and Materials	**4,366,704.75**
Office and Computer Supplies/Training Supplies	241,625.68
Curriculum/School Readiness and other Materials Kits	3,249,918.86
Progress Monitoring Licenses/eCIRCLE Professional Development Licenses/Training Resource Licenses	433,052.98
Netbooks/Progress Monitoring Tools/Computer and other Technology Supplies/ Software and Licenses	416,594.48
Video Cameras and Related Equipment / Toddler Training Kits/Training Materials/Printing	25,512.75
Other Operation Costs	**969,213.11**
In State Travel	106,067.40
Training of Trainers costs (seminar, space rental,travel & parking, etc)	46,245.15
Copy Costs/Printing/Materials Shipping and Postage/UCT Parking	4,588.22
Professional Development Costs (registration,books,tuition/teacher incentive)	811,548.14
Additional Training/Space Rental/Working Lunches/ Consultants (hotel&travel)/Shipping of Summer Training Materials	764.20
Total Direct Costs	10,966,908.96
Indirect Costs (5%)	506,420.65
Total Expenses	**11,473,329.61**

**Unexpended balance of $226,670.39 carried forward to 09/30/10*

PROJECT 7117, 7007, 7479
August 29, 2009 - August 31, 2010
$14M

School Readiness Technical Assistance to Pre-Kindergarten
Early Start Grant
(Texas Education Agency Funds, Rider 45)

Class/Object Description		Expenses
Payroll		**2,097,599.97**
Professional and Contracted Services		**8,283,234.84**
Purchase Service Agreements	1,985,789.77	
School Readiness Certification System & TOMS Technology	5,261,145.00	
School Readiness Outreach	595,743.03	
TOMS (SunNet - Phase 2 and Phase 3) Technology Upgrade	92,847.00	
Long Distance & Conference Calls/Cell Phone	4,142.74	
eCIRCLE Professional Development Licenses/Training Resources for Professional Development & Tracking	17,100.00	
Broadband Service for Netbooks/SAS Licenses /MS Project Licenses	73.00	
Training Consultants	11,864.27	
Individual Consultants / Teachscape	313,280.03	
SAS Server Lease & Licenses	1,250.00	
Supplies and Materials		**1,089,254.29**
General Office Supplies/Summer Training Institute Supplies & Materials/ Summer Training Printing	52,261.35	
Desktop Computers/Web Server/Fax/Scan/Printer/Netbooks/Safeboot-Computrace/Back-Up Software/LCD Projector/Parts Replacement for Equipment/Web Support Software & Licenses	103,853.78	
RTI Kits for Tier 3	870,506.30	
Software/Licenses/Books	826.72	
CIRCLE Teacher Manuals	48,215.14	
SRCS Certificates	13,591.00	
Other Operation Costs		**295,465.13**
In State Travel	140,095.76	
Summer Institute Training (space rental & working lunches)	22,481.56	
Copies/Printing/Postage/Shipping/UCT Parking	62,511.15	
Teacher Incentives	40,700.00	
Teacher Training Institute/Regional Specialist	19,896.14	
Pre-K Summit	9,780.52	
Total Direct Costs		**11,765,554.23**
Indirect Costs (7117, 7007 @15%; 7479 @5%)		1,430,748.08
Total Expenses		**13,196,302.31**

**Notice of Grant Award (091080017110001) $618,236.82 unexpended balance carried forward to 02/28/11*
**Memorandum of Understanding (2330) $185,460.87 unexpended balance carried forward to 08/31/11*
**Notice of Grant Award (10104314711001) funds expended in full as of 08/31/10*

Project 7009
2/2/2010-08/31/2010
$1M

Higher Education Partnership Grant
(Texas Workforce Commission Funds, Art. IX-73, Sec. 17.18)

Class/Object Description	Expenses
Payroll	**58,896.41**
Professional and Contracted Services	**193,025.42**
Professional Service Agreements/Coordinator and Mentor Reimbursements/Training Supplies	193,025.42
Supplies and Materials	**515,761.97**
Curriculum/School Readiness and other Materials Kits	509,489.33
eCIRCLE Professional Development Licenses	6,272.64
Other Operation Costs	**56,421.51**
In State Travel	6,833.21
Office Supplies/Postage&shipping/Copier/LD	171.00
Higher Education Summit Costs	317.30
Teacher Reimbursements	49,100.00
Total Direct Costs	**824,105.31**
Indirect Costs (5%)	41,205.27
Total Expenses	**865,310.58**

**Unexpended funds of $134,689.42 lapsed as of 08/31/10*

Appendix 5:

Texas School Ready! Project: Research Summary from the *Journal of Educational Psychology*

Study of the Effectiveness of Professional Development For Teachers of At-Risk Preschoolers[1]

Children's Learning Institute
UT Health Science Center at Houston
Susan H. Landry, Jason Anthony, Paul R. Swank, and Pauline Monseque-Bailey

Many states estimate that half of their students begin kindergarten without the foundational skills necessary to have a good chance of succeeding in school.[1] Scientific research continues to show that a child's experiences *before* elementary school directly impact brain development in ways that affect later learning, behavior, and physical and mental health.[2] Children from families at poverty levels of income, because of life stresses, psychological distress, and poor parental role models, are at the *highest risk* for not engaging in experiences that are most likely to promote school readiness, including those that advance a child's language and literacy development.[3]

Quality early childhood education is the primary means for overcoming these deficiencies and giving children from low-income backgrounds an opportunity to start kindergarten with the skills necessary to succeed.[4] Research evidence shows that children from impoverished backgrounds who are supported by teachers trained in instructional strategies that promote key foundational skills can demonstrate average levels of development by the time they enter kindergarten.[5] Because low-income families tend to rely on early childhood programs that accept federal subsidy[6], it is critical that these programs promote the best possible learning for young children and school readiness.

There is often a serious mismatch between the preparation of early childhood educators and the preparation needed to optimize classroom practices. However, effective professional development has been shown, even with early childhood educators lacking a formal educational background, to improve early childhood program quality.[7] Therefore, *comprehensive professional development* for early childhood educators may be a key element in ensuring that at-risk preschool students have access to teachers with a deep understanding of research-based instructional practices who can prepare them for school success.

Study Description

The primary objective of this study was to demonstrate that teachers serving low-income children in three types of early childhood education programs—subsidized childcare, Head Start, and public school prekindergarten—could be directed through high-quality training to use effective instructional practices that promote children's development of language and literacy.

The study was conducted in four states—Florida, Maryland, Ohio, and Texas—during the 2004-2005 and 2005-2006 school years. Study participants included 262 early childhood educators in 158 schools. The following table summarizes the demographic characteristics of the participating preschool teachers and classrooms.

[1] Published in Volume 101 (No. 2), 2009, *Journal of Educational Psychology*.

Classroom and Teacher Characteristics by Study Site

Characteristic	*Florida (65 teachers)*	*Maryland (59 teachers)*	*Ohio (65 teachers)*	**Texas (73 teachers)**
Classroom type (%)				
Public school	0	74	0	38
Head Start	27	26	100	37
Child Care	73	0	0	25
Language of instruction (%)				
English	40	96	100	85
Spanish	60	4	0	15
Length of day (%)				
Full day	88	96	35	77
Half day	12	4	65	23
Teacher education (%)				
High school/CDA	97	0	26	23
2-year college	3	0	40	30
4 or more years college	0	100	34	47
Teacher ethnicity (%)				
African American	19	53	37	6
Caucasian	6	42	60	22
Hispanic	75	5	3	72
PreK Teaching Experience				
Mean years	7.31	6.00	8.55	8.15
***Note.* CDA = Child development associate**				

This multisite study specifically tested the effectiveness of four professional development programs that were developed using scientifically based research and models of successful professional development. To measure the effectiveness of the professional development programs, schools were randomly assigned to *one of five* conditions—"business as usual" (control group) or to one of the four professional development programs.

Teachers in the study, including those in the control group, were required to follow a published curriculum—but not any particular published curriculum—that built-in a scope and sequence for language and literacy learning activities to be used in a purposeful but playful way.

In addition, children from each study classroom were randomly selected to participate in pre- and post-assessments to determine the effectiveness of each professional development model. Across the four sites, 1,786 children were assessed. About 42 percent of the children were Hispanic, 34 percent were African American, 17 percent were Caucasian, 2 percent were Asian, and 5 percent were other.

All four professional development programs had a set of common components, which included year-long, facilitated small-group training using an online course, eCIRCLE, developed by the Children's Learning Institute at the UT Health Science Center at Houston. This course emphasizes language and literacy instruction, practice of learned material in the classroom, and participation in online message boards with fellow teachers. All four programs also required

teachers to use the same supplemental curricula and associated materials and the same curriculum based measures to assess student progress.

The programs differed in whether they included regularly scheduled in-classroom mentoring with a trained facilitator and detailed feedback on progress monitoring data that provided recommendations for grouping children and for instructional activities included in the supplemental curriculum. Specifically, schools participated in one of these four professional development conditions:

- Teachers received both *in-classroom mentoring* and *detailed*, instructionally linked feedback concerning children's progress in language and literacy using a personal digital assistant (PDA) version of an assessment (C-PALLS) for early childhood phonological awareness, language and literacy.
- Teachers received *no mentoring* but did receive the *detailed*, instructionally linked feedback on children's progress using the PDA version of C-PALLS.
- Teachers received *in-classroom mentoring* but only *limited* feedback on children's progress, which was not linked to curricular activities.
- Teachers received *no mentoring* and only *limited* feedback on children's progress.

Teacher and Student Results

The impact of the different professional development approaches on teaching and student learning were measured using multiple assessments. Teachers were rated before and after the completion of the professional development program using The CIRCLE-Teacher Behavior Rating Scale (TBRS).[8] The TBRS rates the quality and frequency of specific teaching behaviors in the classroom including activities related to book reading, oral language development, print and letter recognition, written expression, and phonological awareness. Student learning was measured using the Expressive One-Word Picture Vocabulary Test[9], Preschool Language Scale—Fourth edition[10], Developing Skills Checklist[11], and the Preschool Comprehensive Test of Phonological and Print Processing[12]. These assessments measure a preschooler's expressive vocabulary, language development, and phonological and print awareness.

The most powerful of the four professional development approaches for improving the overall quality of teaching and specifically the quality and frequency of instruction of early writing, phonological awareness, letter knowledge, and shared reading was the most comprehensive approach that included *in-classroom mentoring* and *detailed* instructionally linked feedback. The differences between teachers in this group and those without the professional development program were highly significant, and the effectiveness was seen across all four sites. In short, teachers who received comprehensive professional development became better teachers.

Not only was the most comprehensive professional development effective in improving the quality of teaching and classroom environments, but it was also effective in promoting children's learning. Students of these teachers graduated with better language comprehension, more advanced phonological awareness, larger breadth of expressive vocabulary, and more print and letter knowledge than children in the control group. The effects were significant and showed meaningful improvements in children's readiness for kindergarten.

It is notable that children's learning outcomes were significantly improved through professional development of hundreds of teachers rather than through costly and labor-intensive direct intervention with thousands of children.

The use of *technology* was an important key to the success of the professional development. Not only was the eCIRCLE training delivered to all four professional development groups online, but some of the most robust findings from the study were tied to the use of the PDA-based progress monitoring tool. The PDA version provided teachers with immediate feedback about children's learning from one assessment to the next, provided comparisons across multiple skill areas for each child, recommended how to group children into small groups, and identified specific instructional activities to use with smaller groups of children. All of this consistently resulted in improvements in teachers' instruction and children's learning.

Challenges to Implementing Program Broadly

This study brought to light several challenges to executing an early childhood educator professional development program more broadly. It is critical that these challenges be addressed as part of any effort to broaden the availability of comprehensive professional development for preschool teachers.

- Staff at all levels, including superintendents, directors, coordinators, and teachers, must be committed and supportive of the program. A thorough explanation of the intervention, including a discussion of the demands on a teacher's time and the level of commitment required to achieve effects, is critical.
- Local and centralized technology support must be provided because of the extensive use of technology to deliver this professional development program. The study not only encountered minor problems with the technology platform and locating computer labs for group sessions, but also found a need to train some teachers to work with computers and PDAs.
- Some oversight and communication among project managers and facilitators is essential in order to ensure fidelity of program implementation and maximize effectiveness.
- Curriculum used in the classroom must have a strong focus on emergent literacy and have a scope and sequence of instructional activities that parallels the objectives in the online courses even though a specific, mandated curriculum is not required.

Future Directions

This study demonstrated impacts on teachers' behavior, classroom environments, and children's learning *within the same year* that teachers received the professional development. The learning outcomes for the children in some areas, such as vocabulary and phonological awareness were sometimes small, so it will be important to assess effects of the professional development programs after teachers participate for a second year. This will determine whether another "dose" provides an opportunity for teachers to hone their skills, which may result in even better student learning results.

The study was unable to determine if the effectiveness of the professional development program varied by teacher education (high school/child development associate, 2-year college, 4 or more years of college) because of the limited sample of classrooms at each study site. However, the study anecdotally found that the least competent teachers required the more comprehensive professional development to change their instructional practices to an extent that increased student learning. Identification of recommended dosage levels for teachers of different

competence levels is an important issue to examine since it will help ensure that resources earmarked for professional development are most effectively allocated.

Conclusions

- The most powerful of the four professional development approaches for improving the overall quality of preschool teaching and student learning was the most comprehensive approach that included in-classroom mentoring and detailed instructionally linked feedback.

- Comprehensive professional development provided to preschool teachers can significantly improve children's learning outcomes at a lower cost than providing costly, direct intervention to children once they reach elementary school.

- Technology was an important key in successfully and cost-effectively delivering professional development to preschool teachers and in providing them with immediate feedback about children's progress and instructional needs, which resulted in improved teacher instruction and children's learning.

- Comprehensive professional development can have an immediate impact on preschool teachers' behavior, classroom environments, and children's learning.

Footnotes

[1]Highlighting NAEP 2003 (2003); Zill & West (2001).
[2]DiPietro (2000); Landry et al. (2001); Neville et al. (1998).
[3]Hart & Risley (1995); Neuman (1996).
[4]Bowman et al. (2001) ; Snow et al. (1998).
[5]Landry et al. (2001).
[6]Phllips et al. (1994).
[7]Howes, Phillips, & Whitebook (1992) ; Kontos, Howes, & Galinsky (1997).
[8]Landry et al. (2000)
[9]Brownell (2000)
[10]Zimmerman, Steiner & Pond (2002)
[11]Developing Skills Checklist (1990)
[12]Lonigan et al. (2003)

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