A young child with dark hair, wearing a dark blue and grey long-sleeved shirt, is smiling and playing with a colorful bead string. The child is holding a pink string with a yellow square bead. In the foreground, there are other colorful beads (green, yellow, green, yellow) on a string, and a wooden tray with more beads. The background is a bright, out-of-focus indoor setting.

# City of Tempe Preschool Resource and Expansion

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## ABOUT HELIOS EDUCATION FOUNDATION

Helios Education Foundation is dedicated to creating opportunities for individuals in Arizona and Florida to achieve a postsecondary education. Our work is driven by our four fundamental beliefs in Community, Equity, Investment, and Partnership, and we invest in initiatives across the full education continuum.

Through our Florida Regional Student Success Initiative, Helios is helping underserved, minority, and first-generation students from the state's large population centers in Miami, Orlando, and Tampa achieve a postsecondary education.

In Arizona, where Latino students comprise the largest percentage of the K-12 public school population, the Foundation is implementing its Arizona Latino Student Success Initiative focused on preparing all students—especially students in high-poverty, underserved Latino communities—for success.

Dear Colleague,

Success in postsecondary education starts with success in the early learning years and Helios is committed to ensuring all students, regardless of background or zip code, have access to high quality early learning experiences. As we develop strategies to expand access to early learning, we are also committed to collaboration and partnership in support of young children.

The following brief examines a community partnership between the City of Tempe and the Virginia G. Piper Charitable Trust who funded a program called TEMPE PRE to provide high quality preschool experiences to children in the City of Tempe. Helios Education Foundation provided research and evaluation to the program to help identify the overall impact and the aspects of the program that are able to be replicated in other programs across Arizona and Florida.

We hope the data presented in this brief will lead to meaningful discussions about how to ensure greater access to high quality early learning experiences that will provide the foundation for success throughout the education continuum.

Sincerely,



Vince Roig  
Founding Chairman

A handwritten signature in black ink that reads "Vince Roig".



Paul J. Luna  
President & CEO

A handwritten signature in black ink that reads "Paul J. Luna".

“We have been blessed to be part of the Tempe PRE program since its inception. The impact of the program over the last three years has been profound on the overall well-being of our family. Not only has the program provided access to high-quality early childhood education for both of my daughters, it has also afforded me the opportunity to continue to advance my personal education and career. During this time period we have seen a 44% increase in our gross annual income— this life altering increase would not have been possible without this program. My gratitude for Tempe PRE staff and all of those that support the program cannot be put into words. Thank you, thank you for providing a program that allows our community to reach our full potential.”

—Parent of Tempe PRE Student

## INTRODUCTION

Helios Education Foundation is dedicated to enriching the lives of individuals in both Arizona and Florida by creating opportunities for success in postsecondary education. Fundamental beliefs in Community, Equity, Investment, and Partnership propel student supports and guide the foundation's strategic investments. While all students benefit from the transformational power of education, Helios focuses on serving first-generation, low-income, and underrepresented students, thus addressing the education equity gap that often prevents these students from realizing their potential.

Children who attend high-quality preschool programs reap benefits that can last throughout school and their lives. Research shows that investments in quality preschool programs bolster student success, including clear positive effects on children's early literacy and mathematics skills (Weiland & Yoshikawa, 2013). Compared to children who did not attend preschool, those who do attend preschool programs are more prepared for school and less likely to be identified as having special needs or be held back in elementary school (Heckman, 2018).

However, access to preschool is often determined by a family's ability to pay for it, or whether they reside in one of the handful of cities and states that offers widely available public preschool programs. This leads to the question, if Arizonans fully understood the educational benefits of preschool, would they demand greater investment of state and local financial resources for high-quality preschool programs?

Aiming to provide further evidence of the value of high-quality preschool, in 2018, Helios and its partners commissioned a multi-year research study of a new city-funded preschool program in Tempe, Arizona. The study sought to determine which combination of factors maximizes kindergarten readiness rates and third-grade reading outcomes, while minimizing the fade-out of the positive effects of high-quality preschool. The factors examined included teaching methodology, teacher professional development, coaching, mentoring and parenting education. This report looks at the first two years of research.

Section One provides the history of how the City of Tempe created the Tempe PRE (Preschool Resource Expansion) program and describes the program as implemented. Section Two describes the evaluation plan and goals of the research. Section Three presents key findings from the early stages of implementation. Section Four examines Tempe PRE children's outcomes in preschool and kindergarten. Section Five shares lessons learned and recommendations for successfully implementing a high-quality preschool program.

“Investing in our community's youngest children is a priority for the City of Tempe. I am grateful to the City Council who partnered with my office and the Tempe School District on the Tempe PRE project . . .”

—Mayor Corey Woods, City of Tempe

## Evaluation Timeline

### June 2017

First applications open for Tempe PRE

### August 2017

Year 1 begins with 15 Tempe PRE classrooms

### Fall 2017

First GOLD and HighScope PD

### April 2019

NORC conducts classroom observations and interviews in Tempe PRE for Year 1 of evaluation

### August 2019

Year 3 continues with 20 Tempe PRE classrooms

### Fall 2019

Creation of revamped plan for PD

### October 2019

NORC conducts classroom observation and interviews in TESD kindergarten for Year 2 of evaluation

### Spring 2021

NORC coordinates with Tempe partners on a set of lotteries for a new RCT evaluation study in Year 5 of Tempe PRE

### March 2021

Tempe PRE resumes in-person

### August 2021

Year 5 continues with 11 Tempe PRE classrooms

2017

2018

2019

2020

2021

### January 2018

5 additional Tempe PRE classrooms open

### August 2018

Kick-off meeting for Helios Education Foundation Tempe PRE evaluation with NORC

### August 2018

Year 2 continues with 20 Tempe PRE classrooms

### December 2018

NORC finalizes the Tempe PRE program logic model in collaboration with Tempe partners

### December 2018

Tempe City Council agrees to continue Tempe PRE with 2-year pilot of sliding fee scale model

### January 2020

NORC submits final Year 1 Evaluation Report

### March 2020

Tempe PRE closes due to COVID-19

### July 2020

NORC gets approval from TESD to conduct QED analysis using all students

### July 2020

NORC submits final Year 2 Evaluation Report

### August 2020

Year 4 begins with 6 Tempe PRE 'camps'

### October 2020

All 11 classrooms from the year are opened, still considered 'camps'

### December 2020

Tempe City Council approves program continuation



## SECTION ONE: TEMPE PRE OVERVIEW

The City of Tempe is the first municipality in Arizona to provide free, high-quality, year-round preschool to low-income three- and four-year-old children. This type of investment is not new for Tempe. The city has a rich history of investing in early literacy interventions to improve school readiness outcomes. In 2015, the city decided to explore ways to reduce the number of children needing these interventions. It commissioned a feasibility study to determine the need for and possible funding of a preschool program that would serve all three- and four-year-olds residing in the city of Tempe. The study found a serious lack of high-quality preschools and even greater lack of access, especially for Tempe's most vulnerable families.

For instance, at the time of the study, only about one-third of Tempe's 3,075 three- and four-year-olds were enrolled in preschool. Of the few publicly funded preschool opportunities, a minuscule number served children from families whose income was 200% of the federal poverty level or less, suggesting that hundreds of young children in Tempe could benefit from high-quality preschool but did not have the opportunity to attend. Similar to other cities in Arizona, Tempe has a high level of poverty: 75% of children in the Tempe Elementary School District (TESD) qualify for free or reduced-price school lunch. Preschool has never been an affordable option for many of the families of these children.

The city's feasibility study also found that many students in Tempe struggle academically. According to the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Next assessment, 64% of Tempe students were not reaching reading benchmarks upon entry to kindergarten, and 58% were not meeting benchmarks on the third-grade Arizona's Measurement of Educational Readiness to Inform Teaching (AZMERIT) Reading/Language Arts Assessment.

Using the results of the feasibility study, the Tempe City Council, in partnership with the TESP, First Things First and the Arizona Department of Education, created and launched Tempe PRE in the 2017-18 school year.

**TEMPE PRE IMPLEMENTATION PARTNERS:**  
City of Tempe, Tempe Elementary School District, Kyrene School District (2017-2019) and First Things First (through Quality First)

Tempe PRE's ultimate goal is to improve child outcomes by investing in four areas:

1. Free access to preschool for children from low-income families.
2. High-quality programming, such as full-day, full-week options with a low 1:9 teacher-to-child ratio.
3. Teacher professional development and supports.
4. Supports for parents through optional extended care and parent training classes.

Tempe PRE was designed to include several specific program approaches, teacher supports, parent supports, and preschool-to-third-grade alignment supports. The program's classroom practice incorporates several key approaches:

- Use of the HighScope Preschool Curriculum.
- Early childhood certified teachers and trained instructional assistants.
- Support from Quality First, the state's quality improvement and rating system, coaches to implement high-quality best practices for teaching.
- Use of the Teaching Strategies GOLD Assessment System for Children (GOLD) to observe children's developmental skills and use of those data to inform ongoing instruction.

At the end of preschool, the goal of Tempe PRE is to improve child development and learning so children are kindergarten ready. Tempe PRE program partners expect children who have experienced their program not only to be **kindergarten ready**, but also to **achieve proficiency targets at the end of their kindergarten year**. Likewise, they expect these children to **meet or exceed grade-level proficiency targets in their third-grade year**, setting the stage for ongoing success in later grades.

During the first years of Tempe PRE's implementation, ensuring high-quality classroom instruction was a primary focus. After several years implementing the program, leaders in both TESP and the City of Tempe developed a shared understanding of kindergarten readiness and aligned instructional goals among Tempe PRE teachers, kindergarten teachers, and elementary school principals. In turn, these aligned beliefs and perspectives helped create shared accountability for Tempe PRE and a tighter integration of Tempe PRE into the elementary school districts in which they reside.

“The grant from the Helios Education Foundation to conduct a longitudinal study of Tempe PRE, the city’s full-day preschool program, is vital to our overarching goal to establish, promote and expand early childhood programs in our community. As a city, we have invested more than \$10 million in Tempe PRE with the belief that all children, regardless of income, should have access to high-quality preschool so they are prepared for kindergarten and long-term school success. This generous support from Helios furthers our work to ensure early childhood opportunities for children and families.”

—Vice Mayor Randy Keating, City of Tempe

## SECTION TWO: EVALUATION PLAN

In 2018, NORC at the University of Chicago received a grant from Helios Education Foundation to conduct an independent study of the implementation and impact of Tempe PRE. The evaluation was designed to be collaborative, with ongoing input from all Tempe PRE partners, Helios and the NORC evaluation team. Over the next two years, NORC researchers worked with program partners to develop a logic model that would guide the evaluation. They then worked with partners to obtain access to child-level data and conducted visits to observe Tempe PRE classrooms in 2018–19 and kindergarten classrooms in 2019–20. The purpose of this research was to identify what worked well and what could be improved with Tempe PRE, to measure its impact on children’s learning, and to share these learnings with others across the state and nation who are focused on providing young children and their families with quality early care and education.



### Goals of the Research

The Tempe PRE evaluation research questions were:

- What does Tempe PRE implementation look like?
  - Are teachers’ practices aligned with the program components?
  - Are instructional and behavioral practices consistent across Tempe PRE classrooms?
- How aligned are Tempe PRE instructional and behavioral practices with those practices in kindergarten?
- Are instructional and behavioral practices consistent across kindergarten classrooms?
- What were principals’, teachers’ and parents’ experiences with Tempe PRE and the transition from Tempe PRE to kindergarten?
  - How are their expectations about kindergarten readiness aligned?
  - What supports do teachers and parents say they receive from schools and the district around kindergarten transitions, and what additional supports would be helpful?
- What do Tempe PRE child outcomes look like?
  - What are the skill levels of children who participated in Tempe PRE at the end of preschool?
  - How do those compare to national averages?
  - Once children transition into kindergarten, how do their outcomes compare to other children who did not attend Tempe PRE?

**This evaluation uses the Education Commission of the States’ definitions of alignment and transitions (Howard, 2010)**

#### Definition of Alignment

Alignment refers to the continuous interrelated nature of education programs and practices across early learning and the early grades. It increases the consistency of children’s experiences across and within grades in order to create a continuum of learning. It leads to learning that progressively builds from one year to the next.

#### Definition of Transition

Transition refers to the totality of experiences and opportunities a child encounters in moving from one program or setting to another. Opportunities and experiences that familiarize children and families with new settings, expectations and relationships can help make connections that ease adjustment and increase the likelihood that families will stay engaged in their children’s learning.



## Data Collection Process

NORC researchers obtained a variety of data available from the 2017–18 school year (Tempe PRE’s first year of implementation) and conducted in-person research during the 2018–19 and 2019–20 school years (see Figure 1). TESD shared child assessment data with researchers, including GOLD data on Tempe PRE children (beginning with 2017–18 data) and DIBELS scores for children once they were in kindergarten.

**FIGURE 1** **Data Collection Efforts**

Classroom Observations	Parent Focus Groups and Interviews	Teacher Interviews	Interviews and Meetings with Tempe PRE and District Leaders	Principal Interviews
In-person observations for 2-3 hours in nine Tempe PRE classrooms in six schools, and two other preschool classrooms (Spring 2019)	In-person focus groups with Tempe PRE parents in each school where classrooms were observed (Spring 2019)	30- to 45-minute interviews with all Tempe PRE teachers whose classrooms were observed along with two kindergarten teachers (Spring 2019)	Interview with Tempe PRE coach (Spring 2019)  Ongoing meetings with district and city leaders (monthly)	30- to 45-minute interviews with principals in each school with classroom observations (Spring and Fall 2019)
In-person observations for 2 instructional blocks (ELA and math) in eight kindergarten classrooms in four schools (Fall 2019)	Individual phone interviews with 13 kindergarten parents (English or Spanish; Fall/Winter 2019)	30-minute interviews with all kindergarten teachers whose classrooms were observed (Fall 2019)		





## SECTION THREE: KEY FINDINGS FROM THE EARLY YEARS OF IMPLEMENTATION

The current study is designed to understand Tempe PRE classroom instructional and behavioral practices, how those practices compare to non-Tempe PRE preschool classrooms within the district (described in Section Four), and how they compare to practices in kindergarten classrooms. It also explores the experiences of teachers, families and principals with the Tempe PRE program.



### How did instruction in Tempe PRE classrooms compare to instruction in kindergarten classrooms?

**Initial observations showed that Tempe PRE teachers focused primarily on supporting children's social and emotional learning and discussion skills, but struggled with embedding academic content within play.**

Observations of Tempe PRE classrooms focused on how much — and how developmentally appropriately — teachers supported children's learning and development through academic instruction and behavioral supports. In classrooms, teachers and children had positive, nurturing interaction, with a deep focus on social and emotional learning (SEL) and discussion intended to help children express their thoughts, needs and interests.

As a curriculum, HighScope is designed for teachers to follow children's interests and weave academic content (such as math, literacy and science) into the learning and explorations that the children self-select. However, in Tempe PRE observations, there were only a few instances of academic content being actively embedded within children's play. This may be because integrating high-quality academic instruction can be challenging, particularly for new teachers or those who are more comfortable with a highly structured curriculum where teachers direct most of the learning. Embedding academic instruction into children's play can be a challenging task when tutoring a single child, and can be especially difficult when attempting to differentiate instruction for 18 or more children in a classroom. While implementing more structured curricula may be easier for teachers, strong evidence shows that differentiating instruction and following children's interests results in deeper learning. As teachers have more opportunities to implement a curriculum such as HighScope and receive more professional development, they are likely to become more adept at applying its approach.

**A number of similarities were observed across Tempe PRE and kindergarten classrooms.**

This evaluation was particularly focused on the alignment between children's preschool and kindergarten experiences. When children transition into kindergarten, the differences can be rather jarring — including the structure of the classroom and the expectations around learning, shifting from a more play-based setting to a more teacher-directed setting. When children have better aligned experiences in preschool and kindergarten, they tend to feel more comfortable and do better in school (Reynolds, Magnuson, & Ou, 2010). The general classroom climate and teachers' management and engagement with children were similar across Tempe PRE and kindergarten classrooms. In other words, the warmth that children experienced during Tempe PRE, along with teachers' management strategies and routines, seemed to continue as children transitioned into kindergarten. Under these conditions, children who had attended Tempe PRE would come into kindergarten with an existing understanding of the rules of the classroom and how to behave. Tempe PRE and kindergarten classrooms also had a number of notable differences, described below.

**Kindergarten classrooms were more teacher directed, with a focus on rote learning, whereas Tempe PRE classrooms were more child directed and play based.**

Kindergarten learning and activities were more likely than Tempe PRE classroom activities to be teacher directed, with a focus on repetition and memorization. Some of these observed differences may reflect the fact that the Tempe PRE and kindergarten curricula required different teaching styles. Structural differences, such as the way the school has set up the classroom schedule, could also be responsible. Tempe PRE teachers used the HighScope curriculum. As noted above, it has a strong focus on child-driven learning, meaning that children make some of their own decisions about where to spend their time, and teachers spend much of their time responding to the interests and questions children have. In contrast,

kindergarten teachers followed a specific district–designed scope and sequence that was aligned with the Arizona Early Learning Standards. In addition, while the Tempe PRE day was structured to be primarily child led and play based, the kindergarten structure and schedule had minimal individual work or play time. As one kindergarten teacher pointed out, in preschool, *“They have time for play. They have time for exploration. They have time for naps . . . [in] kindergarten they do not have those things.”*

In observed Tempe PRE classrooms, **46% of activities on average were “mostly” or “primarily” child-led.** In observed kindergarten classrooms, **all activities were “mostly” or “primarily” teacher-directed.**

**Overall, Tempe PRE classrooms had more evidence of higher cognitive demand activities than kindergarten classrooms did.**

One way to better understand the level of alignment between Tempe PRE and kindergarten was by examining how much teachers engaged children in ways that extended their thinking and understanding in one year compared to the next. NORC measured this alignment by rating the level of “cognitive rigor” in the classroom, evidenced by how much children were being asked to

connect their learning to existing experiences and extend their understanding of concepts. For example, researchers looked at whether teachers were consistently asking open-ended questions, asking children to make predictions, and asking children to engage in thinking beyond basic recall. NORC observed more instances of higher cognitive demand in Tempe PRE classrooms than in kindergarten classrooms, although there was variation across both Tempe PRE and kindergarten classrooms. The lower number of observed instances of high cognitive demand in kindergarten classrooms demonstrates the struggle to balance child–centered learning with the rote learning and memorization often associated with kindergarten (Cohen–Vogel, Little, Jang, Burchinal, & Bratsch–Hines, 2021).

**Tempe PRE teachers were more likely to display positive and developmentally appropriate interactions with children than kindergarten teachers did.**

In addition to instructional practices that pushed children’s learning and understanding of content, NORC researchers sought to compare teacher–child interactions in Tempe PRE and kindergarten classrooms. Classrooms were rated on both “positive affect” (whereby adults show positive attention by smiling, making eye contact, etc.) and “positive relationships” (through evidence of respectful interactions, shared activities and peer assistance). Analyses showed that staff in Tempe PRE classrooms were more likely than kindergarten staff to display positive affect and positive relationships with children. This, again,



may be driven by the different structures of the day and how much time and space Tempe PRE classrooms have for play-based learning and interactions compared to the teacher-driven instructional learning that persisted throughout the kindergarten school days.


The different state standards that preschool teachers need to adhere to versus kindergarten teachers may also drive the observed differences. Preschool teachers follow Arizona's Early Learning Standards. These standards have an explicit focus on SEL and academic learning through play. For example, preschool children may indicate their knowledge of counting and cardinality through using "numerals and number symbols in the context of daily routines, activities, and play" (Arizona Department of Education, 2018), whereas Arizona kindergarten standards are more focused on academic content. In addition, the state suggests that teachers spend the majority of their instructional time on the different academic content clusters outlined in the standards (65%–75% for "major" clusters and 25%–35% for "supporting" clusters), leaving little time for play. Also, while preschool teachers have a specific set of SEL standards to follow, kindergarten teachers are expected to embed SEL competencies into their daily academic content activities.

**Tempe PRE teachers consistently approached conflicts as "matter-of-fact" incidents and sought to teach children how to resolve those conflicts, while kindergarten teachers varied more in how they approached conflict resolution.**

Finally, NORC researchers explicitly observed classrooms for instructional practice focused on conflict resolution. Children of this age range are learning how to interact appropriately with other children and developing their self-regulation skills. The HighScope curriculum encourages teachers to address conflicts as matter-of-fact rather than problematic, since it is quite normal for children of this age to have conflict. This matter-of-fact approach involves calmly acknowledging children's feelings and having children help identify and solve problems with some level of independence. In situations where teachers approach conflict as a problem, they may be more likely to punish or scold children, rather than try to involve children in finding a solution to the conflict. NORC rated classrooms on how teachers responded to children's conflict and found that Tempe PRE classrooms were more likely than kindergarten classrooms to use matter-of-fact approaches to resolve conflicts.

In kindergarten classrooms, researchers did not observe

teachers using a specific method for conflict resolution. Instead, kindergarten teachers followed school-level classroom management guidelines. For example, the principal in one school said that all teachers in the school were expected to follow "Capturing Kids Hearts" processes when behavioral issues arose. This principal explained that Capturing Kids Hearts "focuses on sharing positivity and asking [students] specific four questions." The questions might be, "What are you doing? What should you be doing? Is that a good choice? Can you make the right choice?" Former Tempe PRE parents also noticed a difference in how Tempe PRE teachers handled conflict compared to kindergarten teachers. For example, one parent noted that from their perspective, behavior management and conflict resolution in Tempe PRE were extremely hands-on, positive and effective. This parent described how in Tempe PRE, their child's teacher actively resolved conflicts and helped lead children to solutions and apologies, while teachers took different approaches in kindergarten.

 **What were the experiences of principals, teachers and parents with Tempe PRE and the transition from preschool into kindergarten?**

NORC interviewed principals, teachers and parents to understand their experiences with Tempe PRE. The researchers asked about the kinds of transition-related supports offered at the school (such as kindergarten readiness events) and coordination and collaboration between Tempe PRE and kindergarten teachers to help children get ready for the transition. They also asked principals, teachers and parents about their perceptions of Tempe PRE children's readiness for kindergarten and how well they adjusted to kindergarten.

**Principals, teachers and parents said that they benefited from the variety of implementation supports that the City of Tempe and TESD provided early on.**

The City of Tempe and TESD provided a number of supports to aid the implementation of Tempe PRE, including coaching and training. First, city staff, including a designated Tempe PRE supervisor, were available to visit classrooms and help teachers with implementing the HighScope curriculum. Teachers also received coaching through Arizona's statewide Quality First, the state's quality improvement and rating system for early learning programs. Quality First coaches focused primarily on helping teachers improve their quality as defined by the

QIRS. These supports were therefore focused heavily on improving classroom setup and interactions as measured by the Early Childhood Environment Rating Scale or Classroom Assessment Scoring System–PreK observational assessments. The Tempe PRE supervisor met regularly with Quality First coaches to talk about individual classroom needs. In addition, some lead teachers received consultation from Quality First mental health consultants to help them provide support for children’s social, emotional and behavioral development.

While Tempe PRE coaching was generally quite highly regarded, interviewees suggested it was not consistently offered across all schools within the district. However, although some teachers received more coaching than others did, teachers unanimously reported that coaching led to changes in their practice. For example, some teachers said their coaches made helpful suggestions regarding what to do during instructional transition times throughout the day. Other teachers said that they changed how they supported children’s higher-order thinking skills based on suggestions from coaches. Indeed, NORC researchers found evidence that quality in Tempe PRE classrooms, as measured by QIRS ratings, improved from Year 1 to Year 2.

Tempe PRE lead teachers also received training on how to use the HighScope curriculum in November and December of 2017 and again in July and August of 2018. All the Tempe PRE teachers interviewed described the HighScope training as highly useful. One teacher characterized the significance of the initial training in the following way: “For some new teacher just walking in, implementing this curriculum [without training] would’ve been nerve-racking beyond belief.” In addition to this initial training, teachers expressed their desire for more learning opportunities, such as a refresher course in their second year or a community of practice for Tempe PRE teachers.

Furthermore, all lead teachers participated in a two-day training on GOLD. Prior to the second year of program implementation (summer 2018), GOLD training was extended to kindergarten teachers with the goal of creating some alignment in the assessments being used in preschool and kindergarten. In addition to lead teachers, instructional assistants who supported lead teachers in the classroom were invited, but not required, to attend the second HighScope training. Instructional assistant

attendance was low, primarily because it was difficult for both lead teachers and instructional assistants to attend the same training.<sup>1</sup> If, for example, substitute teachers could be made available, that could support increased attendance among instructional assistants. Without that extra support, it rested more on lead teachers to teach their instructional assistants how to implement HighScope, adding an extra burden on lead teachers.

### **The City of Tempe and TESD successfully addressed early implementation challenges.**

Simply creating and implementing a new preschool program at one school campus can be challenging. In Tempe, program leaders were developing new and unique partnerships across city government and the local school district while also providing direct support to teachers, children and families in 20 classrooms at different elementary school sites. Early in the program’s implementation, school-level interviewees described several initial challenges with coordination and the integration of Tempe PRE into the existing elementary school community. When Tempe PRE was first rolled out as a program, there was a lack of clarity about whether Tempe PRE classrooms were under the City of Tempe’s supervision or whether the school district and school principals held responsibility. This led to confusion over who could or should make decisions for the Tempe PRE program and who was responsible for providing support to Tempe PRE classrooms. Because of this uncertainty, some counselors and other student support staff were not sure whether or how they were supposed to assist Tempe PRE teachers.

To address the lack of clarity over roles and responsibilities for supporting Tempe PRE staff and families, TESD and the City of Tempe implemented a number of changes during the 2019–20 school year for improved coordination and communication for Tempe PRE. A key change to the program’s structure was the hiring of an assistant director of Early Childhood within the district in summer 2019 to oversee Tempe PRE, support school-level efforts around program integration, and provide updates to the city staff. The assistant director and the City of Tempe supervisor for Tempe PRE jointly met with each principal at the beginning of the school year to discuss their roles and available supports as they continued to integrate Tempe PRE into their schools. The assistant director and supervisor also

<sup>1</sup>This is consistent with teachers’ professional development attendance data received from the district. In Year 1, 75% of lead teachers attended a HighScope training, while only about 10% of instructional assistants attended. In Year 2, all the new lead teachers attended a HighScope training, while attendance of instructional assistants rose to about 40%. In both Years 1 and 2 of Tempe PRE, the HighScope training attendance percentages for lead teachers and instructional assistants were extremely similar to the attendance rates for GOLD trainings.

developed a yearly professional development plan with monthly targets to provide resources to Tempe PRE classroom teachers. Having a district point person who could respond to Tempe PRE and school staff questions and concerns led to clearer communication and a better understanding of Tempe PRE procedures and goals.

Several principals noted that their roles and responsibilities regarding Tempe PRE became clearer toward the end of the second year of implementation. Because of this clarity, they were able to better focus on how to integrate and support preschool teachers within their schools. After these adjustments, the researchers found that schools with principals who took ownership over the integration of Tempe PRE had more success with Tempe PRE program implementation.

### **Alignment in teacher and principal beliefs around kindergarten readiness improved in the 2019–20 school year.**

NORC’s evaluation also sought to understand how teachers and administrators thought about and defined kindergarten readiness. The alignment of perspectives around kindergarten readiness is an important factor in how well preschool and kindergarten experiences can be aligned with one another. Initial findings showed both commonalities and differences across how teachers and administrators defined kindergarten readiness.

**“Tempe Elementary students are stronger, healthier and better prepared for learning in kindergarten because of the impact of Tempe PRE on our youngest, most vulnerable children. This collaborative partnership with the City of Tempe, supported by funding from Helios Education Foundation in helping us measure the impact of preschool on kindergarten readiness, has shown unequivocally the positive and often astounding impact of Tempe PRE on the success of our children.”**

—Tempe Elementary Superintendent Christine Busch

All the individuals interviewed agreed that preschool children need to develop their social–emotional and behavioral skills to be kindergarten ready. The most common skills teachers, parents and school leaders mentioned were related to socialization with other children. Another area of commonality across interviewees was the importance of children learning and being able to exhibit behaviors consistent with school and classroom norms and rules. Some interviewees defined this process as getting children “ready to learn.”

However, interviewees differed in the degree to which they believed children needed to enter kindergarten with academic skills. School administrators and teachers with kindergarten experience defined kindergarten readiness in terms of academics, not just SEL. Conversely, some Tempe PRE teachers explicitly stated they did not think children needed to know basic academic skills to be ready for kindergarten. To them, preschool and kindergarten have different purposes: Preschool should focus on developing SEL skills, and kindergarten should focus on learning academic material.

Consistent with the discussion about kindergarten readiness, interviewees differed in their opinions on whether preschool classrooms should be more play–based and primarily SEL–focused or more structured to focus on meeting academic standards. For example, in one school, the principal defined kindergarten readiness exclusively in academic terms, which led to some tension with the preschool teachers who defined readiness mostly in terms of SEL development. These differences in beliefs highlight how perspectives can shape alignment — or misalignment — in expectations and experiences as children transition from preschool into kindergarten. Most other administrators interviewed, however, talked about the importance of setting up preschool classrooms to be developmentally appropriate for students. These individuals identified kindergarten readiness as primarily demonstrating SEL skills, with some exposure to academic concepts in preschool.

Parents varied in their opinions about their children’s readiness for kindergarten. Most parents whose children were transitioning to kindergarten in the next school year believed their children would be ready for the move. But some were not sure whether their children would be ready behaviorally for kindergarten, referencing the fact that kindergarten is not play–based like preschool.

Due to advances made by the City of Tempe and TESD, by Year 2 of the evaluation, teacher and administrator definitions of kindergarten readiness appeared to be more aligned. For instance, interviewees said kindergarten readiness should include some basic academic skills but also a focus on being able to attend to multi-step directions, sit through a full day of class, and be familiar with school routines. In addition, many interviewees noted that Tempe PRE children were kindergarten ready based on their familiarity with school routines and structures.

**While most Tempe PRE parents said the program helped their children become ready for kindergarten, parents' reports of their children's actual adjustment to kindergarten varied.**

After some children transitioned from Tempe PRE into kindergarten, NORC's study team reached out to a sample of parents to learn more about their experience with kindergarten. All parents whom researchers interviewed attributed their children's kindergarten readiness to Tempe PRE participation. Parents mentioned different dimensions of school readiness, such as being emotionally and intellectually ready for kindergarten; able to spend an entire day in school; able to write their name and identify shapes, colors and letters; and able to think critically about different topics. Parents also mentioned how Tempe PRE normalized school drop-offs, taught basic English skills, and reduced shyness through exposure to the school social environment. Several parents emphasized the academic skills Tempe PRE helped children develop were most important for their children's transition. One

stated Tempe PRE had already taught her child *"all of the ABCs, sounds of each letter, numbers up to 100, colors and shapes,"* matching the more academically focused kindergarten readiness definition some of the teachers and administrators NORC interviewed put forth. One parent said Tempe PRE put her daughter ahead of other children as she entered kindergarten, and another parent mentioned that based on what they had heard of other preschool programs, Tempe PRE did a better job than most other programs.

That said, parent reports of children's adjustment to kindergarten were mixed. Some stated their children had no difficulty adjusting to school, while others remarked on their children's separation anxiety at the beginning of kindergarten. The different adjustment periods might be explained by children's differing summer experiences. Two parents mentioned that their children attended Tempe PRE summer school, which could have contributed positively to kindergarten adjustment compared to children who spent the summer at home. One parent remarked she was able to tell Tempe PRE kids and others apart "because the kids in Tempe PRE, they knew, hey, it's time to go to school. Mommy and Daddy have to go; they can't stay here with me anymore. But the kids who didn't go to preschool, they were hollering, and they were crying, and they were screaming." Two other parents found that their Tempe PRE children did not so easily adjust to being in kindergarten. They explained how, in the first week, drop-offs were challenging and tearful. The two children eventually adjusted to kindergarten and no longer experienced separation anxiety.



## SECTION FOUR: CHILD OUTCOMES DURING THE EARLY YEARS OF TEMPE PRE

The goal of the outcome evaluation was to examine Tempe PRE children's outcomes in preschool and kindergarten. The hope was it would provide evidence that because of the program, Tempe PRE children ended preschool and entered kindergarten with the skills necessary to succeed (or "ready to learn"). NORC examined this in three ways:

- Did the amount of time spent attending Tempe PRE (full year versus half year) affect children's kindergarten entry skills?
- Were the skills of Tempe PRE children on par with nationally recognized expectations for that age group?
- How did kindergarten outcomes of former Tempe PRE children compare to those of other children who attended kindergarten in TESD?

### Tempe PRE Learning Outcomes

#### **Did children who were enrolled in Tempe PRE for a full year have different outcomes than children enrolled for half a year?**

In Tempe PRE's first year of implementation, 15 classrooms opened in August 2017, and an additional 5 classrooms opened in January 2018. This allowed NORC to examine how the dosage of Tempe PRE, or how many months a child was exposed to Tempe PRE, was associated with child learning outcomes. The analyses examined whether children who were enrolled in Tempe PRE for a full school year had different outcomes at the end of preschool compared to children who were enrolled in Tempe PRE for half the school year. By using the GOLD assessment completed by preschool teachers, the researchers could compare child outcomes.

As shown in Figure 2, children who enrolled in Tempe PRE for the full school year ended the preschool year with higher GOLD scores than half-year enrollees on Language and Literature, Cognitive, Math and Physical domains. Similar proportions of full- and half-year enrolled children met or exceeded national expectations on the SEL domain. These findings indicate that dosage mattered for academic performance — the higher the dosage, the better the outcome — but dosage did not affect SEL outcomes. Overall, more time in Tempe PRE was associated with higher GOLD scores, but any time in Tempe PRE supported strong development of SEL skills.



## Skills When Entering Kindergarten

NORC examined Tempe PRE children's skills at kindergarten entry in two ways:

- (1) Comparing Tempe PRE children to a national sample at kindergarten entry.
- (2) Using a quasi-experimental design procedure to compare the outcomes of Tempe PRE children to non-Tempe PRE children in TESD with similar background characteristics.

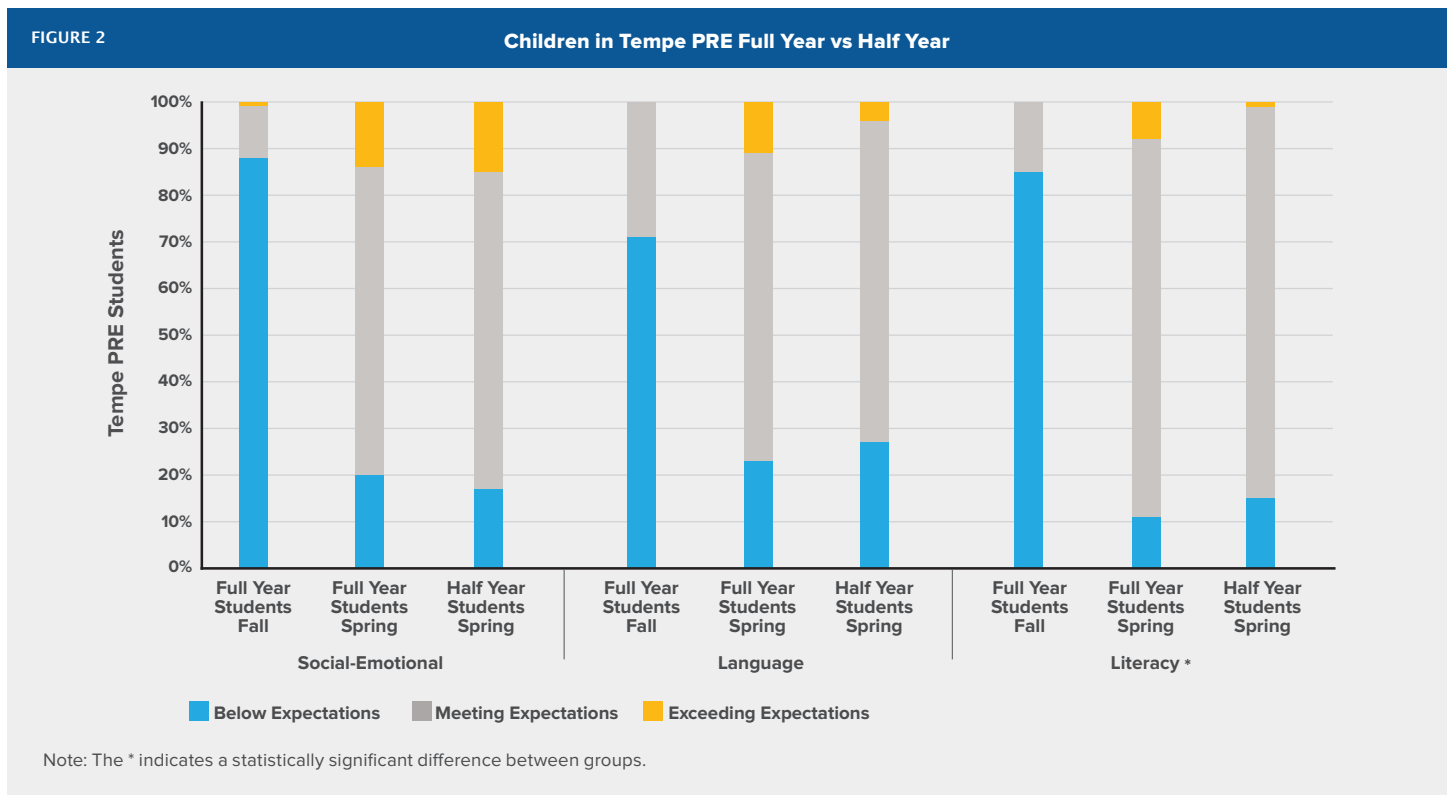
#### **How did Tempe PRE children compare to nationally representative samples using the Kindergarten Entry Assessment and DIBELS?**

NORC researchers examined beginning-of-year kindergarten skills during the 2018–19 school year to understand how Tempe PRE children compared to children across the nation when they entered kindergarten. TESD administered two kindergarten entry assessments: the Kindergarten Entry Assessment, a teacher observation tool aligned with GOLD, and DIBELS, which measures early literacy skills.

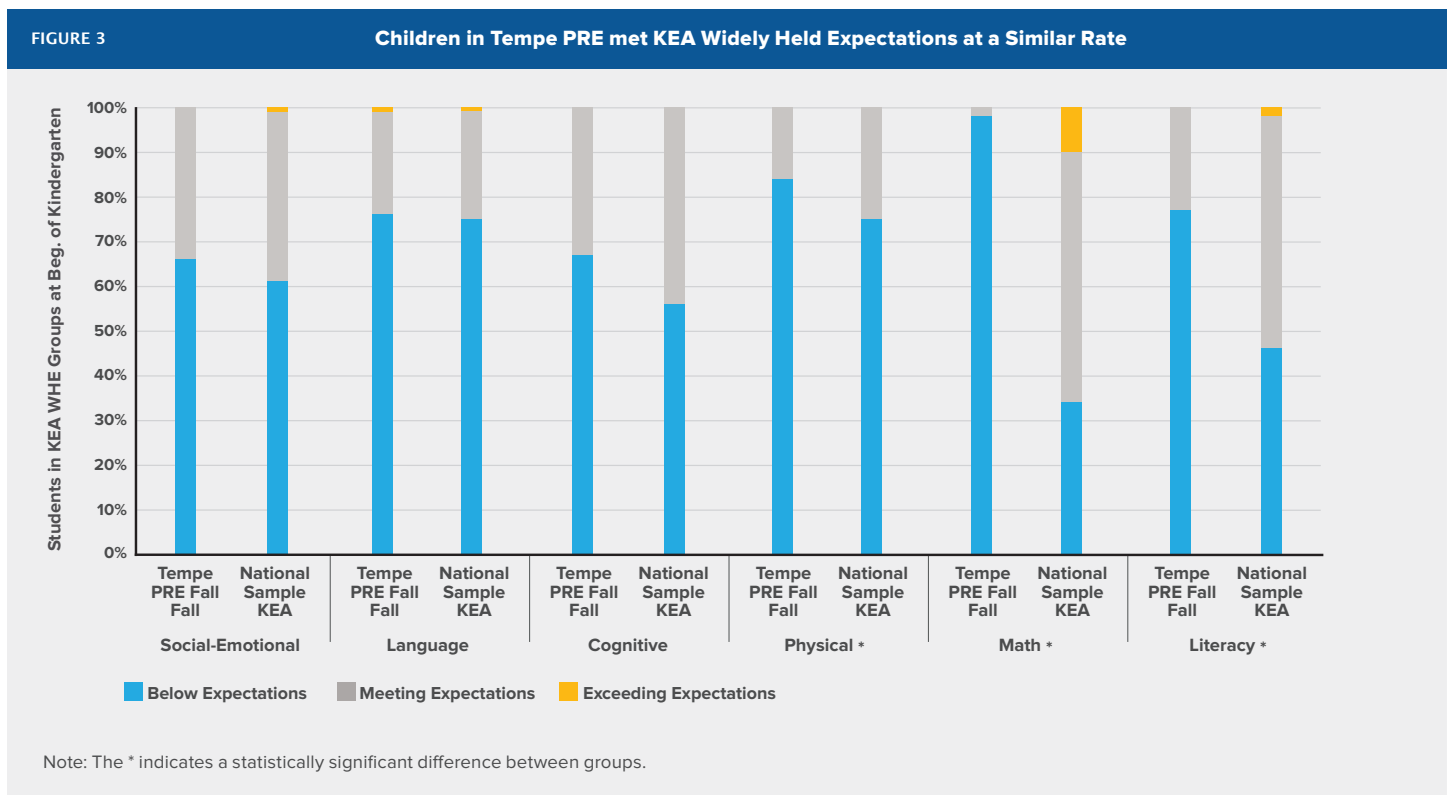
Tempe PRE children met widely held expectations for the KEA at rates similar to a nationally representative sample on the Social-Emotional, Language and Cognitive domains (see Figure 3). These results highlight that Tempe PRE's implementation of the HighScope curriculum, which strongly emphasizes dialogue with children to develop early social and emotional skills, seems to have supported children's development of SEL and language skills. These rates were not statistically significantly different from the national sample for these domains. But the Tempe PRE focus on social and emotional skills may have helped narrow a potential gap in school readiness seen in national trends among students without preschool and those with preschool. (See Lambert, 2017 for information on the nationally representative sample.) However, Tempe PRE had lower proportions of children meeting widely held expectations on the Physical domain and, in particular, on the Math ( $p < .001$ ) and Literacy ( $p < .001$ ) domains, compared to a national sample.

Additionally, all students in TESD took the DIBELS, which measures first sound fluency (a child's ability to say the beginning sounds of words) and letter naming fluency (how familiar children were with letters of the alphabet). Tempe PRE children were less likely to meet benchmarks than a national sample was (42% versus 53%, respectively,  $p = .004$ ; Figure 4). This is consistent with the lower rates of Tempe PRE children meeting widely held expectations on the KEA for literacy, shown above.

**Figure 2.** Children in Tempe PRE for a full year were more likely than half-year Tempe PRE children to meet widely held expectations in language and literacy domains, but were similarly likely to meet expectations in the social-emotional domain.

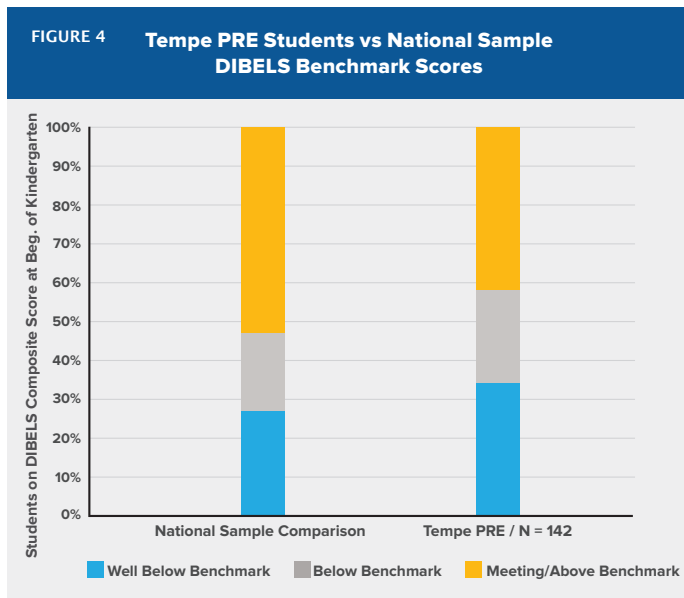


**Figure 3.** Tempe PRE children met KEA Widely Held Expectations at a similar rate as a nationally representative sample on social-emotional and language skills.





**Figure 4.** Tempe PRE students were less likely than a national sample to meet or be above benchmarks on the DIBELS benchmark scores.



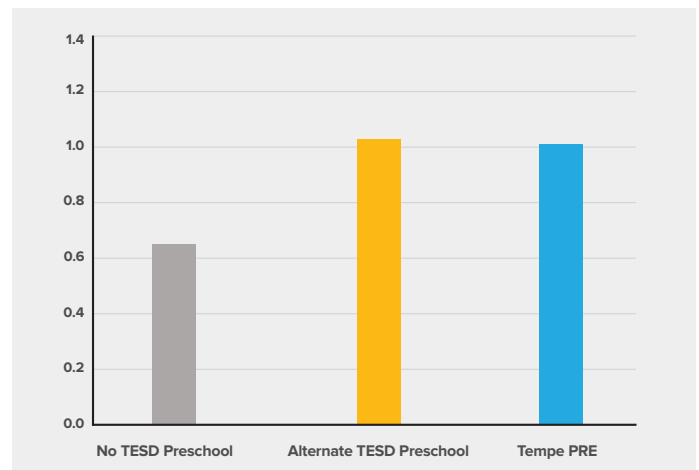
**How did kindergarten outcomes for former Tempe PRE children compare to those of other similar children attending kindergarten in TESD?**

Next, NORC researchers compared Tempe PRE child outcomes to two groups of similar children in Tempe who did not attend Tempe PRE: (1) those who attended other preschool programs in TESD, and (2) those who did not attend preschool in TESD. Analyses showed that children who attended Tempe PRE performed similarly on DIBELS measures to a comparison group of children who attended a different type of preschool program. They did better than children who did not attend preschool at all.

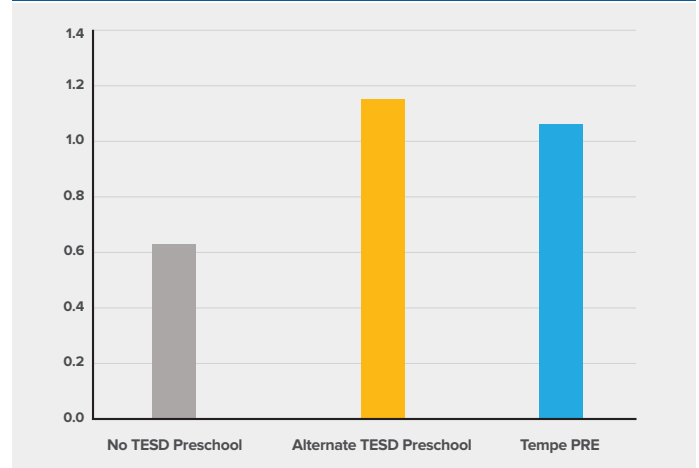
- **At the beginning of kindergarten, former Tempe PRE children had higher scores on DIBELS in overall literacy and letter naming fluency, compared to similar children who did not attend preschool.** For overall literacy scores and letter naming fluency, children who attended Tempe PRE or any other preschool scored about 0.40 standard deviations higher than children who did not attend any preschool.
- **Children who attended Tempe PRE performed similarly to children who attended other preschool programs.** The similar performance of Tempe PRE relative to longer-established preschool programs is notable. Although Tempe PRE is in the early years of implementation, beginning-of-year kindergarten outcomes for Tempe PRE children were already similar to comparable children in other, more established preschool programs.

**Figures 5–7.** Tempe PRE children had higher scores on DIBELS measures at the beginning of kindergarten compared to similar children who did not attend preschool.

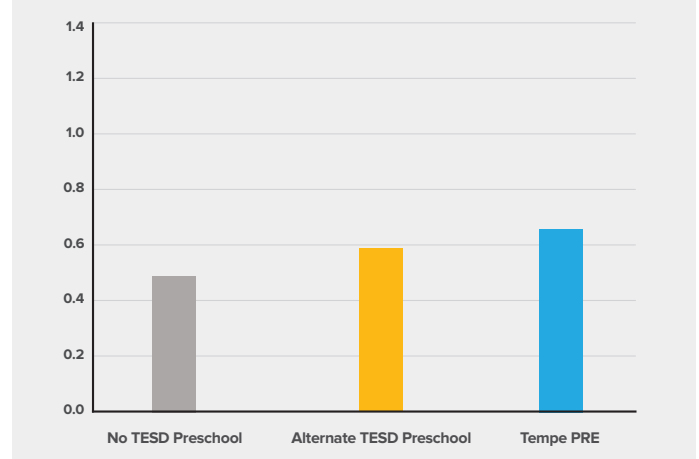
**FIGURE 5 DIBELS Overall Literacy Score**



**FIGURE 6 DIBELS Letter Naming Fluency Score**



**FIGURE 7 DIBELS First Sound Fluency Score**



## SECTION FIVE: LESSONS LEARNED AND RECOMMENDATIONS FOR IMPLEMENTING A NEW PRESCHOOL PROGRAM

### Lesson #1: Consider alignment between preschool and kindergarten teaching philosophies.

While some differences are expected, it would be helpful to have open conversations about the similarities and differences in the definition of kindergarten readiness and in classroom structures (e.g., play time versus rote learning, inclusion of nap time, etc.). Often, a preschool curriculum can be more focused on child-directed learning, while kindergarten instruction is more teacher directed. The misalignment can lead to different beliefs about what kindergarten readiness means and how to prepare children for the transition from preschool to kindergarten. Without attending to these differences, stakeholders may find challenges with alignment and coordination across the grades. Differences may also complicate children's transition into and adjustment to kindergarten.

### Lesson #2: Consider how structural decisions can better support stronger cross-grade collaboration and alignment.

Several structural decisions can help increase alignment in supports for teachers, children and families, such as:

- **Using common assessments.** If they use common assessments across the grades, preschool and kindergarten teachers would have a common metric to examine kindergarten readiness and therefore promote cross-grade collaboration among teachers.
- **Discussing alignment in definitions of what it means to be kindergarten ready and communicating expectations.** Preschool and kindergarten teachers should have structured time to talk about their definitions of kindergarten readiness and discuss similarities and differences. They should work toward jointly creating a district- or school-level common definition and understanding of what kindergarten readiness means and the practices that are developmentally appropriate in both preschool and kindergarten. Enhanced communication of cross-grade child development objectives and opportunities for joint professional development could facilitate alignment of expectations, instructional practices and classroom cultures.
- **Hosting joint preschool and kindergarten professional development sessions and trainings.** All teachers and staff will have the same underlying understanding and expectations if they attend joint professional development sessions around child development, kindergarten readiness, end-of-year expectations and developmentally appropriate practices. To the extent possible, instructional assistants and/or assistant teachers should be part of all trainings. It is crucial to having full implementation of a new preschool program. While logistically difficult, including assistant teachers in the same trainings as their lead teachers helps lay the groundwork for consistent adult implementation of practices in classrooms.



### Lesson #3: Set clear expectations for roles and responsibilities for integrating preschool into existing school communities.

If programs are being funded by an entity other than the school district (such as the city or county), they need clear expectations and guidance early on around the roles that each entity will play. This includes providing guidance on how the new program will be integrated into the elementary school system, such as:

- **Setting aside sufficient protected time for decision-making.** Appropriate staff must be able to participate at key decision-making meetings to ensure coordination. Appointing a person within the district whose responsibility is to respond to questions and concerns can also promote clearer communication and a better understanding of program procedures and goals.
- **Communicating clearly where teachers can get supports for children who are expressing difficulty with behavior.** Teachers may need more support for

children who exhibit extreme externalizing behaviors and show other signs of trauma. Having clear lines of communication about the types of supports available and how to request them will ensure that efforts are coordinated across systems.

- **Defining and communicating clearly the role of school leaders in overseeing and supporting the preschool program.** School leaders are key to making sure implementation is successful. Therefore, it is critical that principals feel they have ownership over supporting preschool teachers. Determining early on what exactly their role will be, in comparison to district or other leaders, will help promote more successful integration of the preschool program into schools. City of Tempe leaders also recommended that roles and responsibilities are well defined for all the different partners.

Please see the Appendix for additional lessons learned for those considering how to study the impacts of their new programs.

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Quality First is Arizona's quality improvement and rating system for early learning programs (QIRS). See <https://qualityfirstaz.com/about/>. The QIRS measures quality instructional practices through an assessment process that uses three tools: 1) the Early Childhood Environment Rating Scale (ECERS; Harms, Clifford, & Cryer, 2005), 2) the Classroom Assessment Scoring System–PreK (CLASS; Pianta, La Paro, & Hamre, 2007), and 3) the Quality First Points Scale (QFPS). Based on a combination of these assessments, programs receive a QIRS rating on a 5-point scale.

## APPENDIX – EVALUATION PROCESS

### Outcome Measures

- **Teaching Strategies GOLD:** An observational assessment that teachers use to gauge child progress along 38 developmental trajectories. These are grouped into six domain scores: Cognitive, Language, Literacy, Math, Physical and Social–Emotional. Children are rated as being below, meeting or exceeding widely held expectations at their age based on a national sample.
  - Teachers were required to complete GOLD for their children twice in Year 1 (fall and spring of 2017–18) and three times in Year 2 (fall, winter and spring of 2018–19).
- **Kindergarten Entry Assessment:** An observational tool that is aligned with GOLD, intended to measure children’s skills when they enter kindergarten. The KEA is administered across TESD and assesses social–emotional, physical, language, cognitive, literacy and math domains.
- **DIBELS:** A standardized measure of early literacy skills, given to all TESD children at kindergarten entry. It includes a measure of first sound fluency, which assesses a child’s ability to say the beginning sounds of words, as well as letter naming fluency, which measures how familiar children are with letters of the alphabet.

### Sample

#### Schools

- **For Tempe PRE observations, interviews and focus groups:** NORC sampled six of the 11 schools in which Tempe PRE operated, focusing on schools in TESD (where 20 of the 22 classrooms were located), for observations and interviews in spring 2019. Before NORC selected these schools, it removed schools from consideration if they did not have later grades (to allow for the evaluation of kindergarten transition and later grade, longitudinal follow up). Of the remaining Tempe PRE schools, NORC then selected those that varied from each other in terms of the population of children who attended the school, percentage of children who were eligible for free or reduced–price lunch, overall school performance, and which schools had other (non–Tempe PRE) preschool classrooms in them.
- **For kindergarten observations and interviews:** Evaluators selected a sample of four schools that each

had a large proportion of former Tempe PRE children enrolled in kindergarten. In three of the schools, a large proportion of Tempe PRE children transitioned into kindergarten within the same school. The fourth school did not house Tempe PRE classrooms, but did have a significant number of former Tempe PRE children who had transitioned into that school for kindergarten. NORC evaluators randomly selected families with former Tempe PRE children from each of the four schools to invite to participate in interviews.

### Children

In the first two years of the research evaluation, NORC focused on children who applied to, were eligible for and attended Tempe PRE for either the 2017–18 or 2018–19 school year. Eligibility was determined via either an indicator in the data from the city (if they completed the eligibility check for a child) or strict age cut–offs for those who did not have eligibility checks completed. The analyses focused on preschool outcomes and beginning–of–kindergarten skills using the full sample of enrolled Tempe PRE children who had available data. Table 1 shows the background characteristics by year of all Tempe PRE applicants, those who attended Tempe PRE, and how this compared to those children who did not attend Tempe PRE. Across eligible and enrolled applicants, children were most likely to be female, Hispanic and an English speaker. Approximately one–fifth of enrolled children across the years were Spanish speakers.

### Analyses

#### Qualitative coding of interviews and focus groups

NORC researchers used both inductive and deductive techniques to create an interview/focus–group coding framework. These included predetermined categories (or codes) that corresponded to the interview and research questions and any new topics that came up during the interview that did not fit into those predetermined categories. After coding all the interviews and focus groups, NORC identified similarities and differences across schools and classrooms. This strategy facilitated the identification of new topics and issues, and it enhanced NORC’s understanding of the alignment between preschool and kindergarten and the transition of Tempe PRE children into kindergarten.

TABLE 1

Sample Demographics by Year and Tempe PRE Enrollment

	Year 1			Year 2		
	All Eligible Year 1 Applicants	Applicants Enrolled in Tempe PRE Year 1	Applicants Not Enrolled in Tempe PRE Year 1	All Eligible Year 2 Applicants	Applicants Enrolled in Tempe PRE Year 2	Applicants Not Enrolled in Tempe PRE Year 2
Age (mean years)	3.95	3.91	4.04	4.18	4.15	4.21
Gender (% male)	47.1%	47.2%	46.9%	43.6%	40.7%	47.4%
<b>Race/Ethnicity</b>						
Hispanic	38.7%	45.6%	24.0%	44.1%	49.2%	33.3%
Black	16.5%	15.6%	18.4%	18.5%	19.1%	17.2%
White	18.3%	18.8%	17.3%	17.8%	16.9%	19.9%
Two or more	11.1%	8.5%	16.7%	7.9%	5.1%	14.0%
Other	13.3%	11.1%	17.9%	11.3%	9.6%	15.6%
<b>Language</b>						
English	65.3%	65.2%	65.4%	65.0%	62.4%	68.5%
Spanish	21.7%	23.1%	19.0%	21.6%	24.3%	17.9%
Other	12.9%	11.7%	15.6%	13.4%	13.3%	13.6%

Note: Year 1 = 2017-18; Year 2 = 2018-19

### Coding of observation data

Researchers used an observation protocol where they selected preset responses for items, guiding their observations. Those data were coded into numerical scores in order to calculate “levels” of implementation of particular practices. For example, a question that had three response categories capturing incremental levels of fidelity was coded as 0%, 50%, and 100%.

### Analyses on child outcomes

- **Descriptive analyses.** For some analyses, NORC used descriptive analyses to compare the group of children who attended Tempe PRE to a nationally representative sample. Researchers tested the differences between the groups using a one-sample statistical test (t-test) to see if they were significantly different from each other at the .05 level. This tests whether there were systematic differences in the outcomes between the two groups,

with confidence that those differences were not detected by chance at a likelihood greater than 5%.

- **Quasi-experimental design.** The strongest way to measure a program’s impact on child outcomes is to randomly assign which children attend the program and which ones do not. In the early years of Tempe PRE implementation, full randomization did not occur, but it will in future years.

Without a randomized sample with treatment and control groups, NORC generated a comparison group of TESD kindergarten children that was similar to the group of children who attended Tempe PRE. Researchers used information about children’s race/ethnicity, gender, English language learner status, free and reduced-price lunch status, and zip code of their home address. This information was used to create strata of children based on these characteristics, as well as child likelihood of enrolling in Tempe PRE.

NORC then used the strata to make direct comparisons of Tempe PRE children to other similar children to assess the impact of Tempe PRE on children's outcomes using a regression model with a school fixed effect.[4] *NORC used Cohen's effect size with a common standard deviation to help ease interpretation. Cohen's is defined as the difference in means divided by population standard deviation. The impact is then interpreted as the difference between groups in standard deviation units.* Within each group, the learning outcomes of Tempe PRE children (experimental group) were compared against all other TESD children in the same demographic group (comparison group). NORC then combined the effect for each group using a fixed-effects meta-analysis to estimate overall impacts. These overall impacts give us an estimate of Tempe PRE's impact on children's outcomes.

### Lessons Learned for Studying the Impact of a New Program

#### Lesson #1: Establish needs around access to data early.

**To fully evaluate the impacts of a new program, researchers need to obtain data on children who are in the program and a comparison group.** For impacts of a preschool program, the strongest evaluations use data from children in the preschool program compared to similar children who did not attend the program. If data is not available on children who are not in the program when children are that young, the analysis can use data from when children enter kindergarten. These groups of children and the data necessary should be identified early in the research development process.

**When working with external researchers, set up data sharing agreements early in the research process.** This will help set up structures for securely sharing the data so researchers can conduct analyses in a timely manner. As one city official noted in one of his or her lessons learned: Establish required data and metrics in advance!

#### Lesson #2: Use a lottery when possible.

**For a causal study of impacts on child outcomes, use a fully randomized lottery.** Programs can learn a lot from looking at descriptive data (for example, average ratings on assessments for children at the beginning and end of the year). However, the strongest way to measure whether the program is leading to (or causing) better outcomes, is to randomly assign children to the program.

This will require more applications than available slots in the program.

**To adapt to real-world implementation, use a rolling lottery.** A rolling lottery allows for random selection of children for entry into the program at different points in time. At each time point, batches of applications are randomized with a consistent chance of selection over time. Most importantly, those not selected during each randomization process could either never be offered a seat or be re-entered to the randomization pool during the next selection cycle.

#### In all cases, keep clear documentation including the following:

- Who applied.
- Which children were in the batch being randomized at each point in time.
- Children's randomly assigned selection numbers.
- The percentage of children who were randomized into the program at each lottery time point.
- Who was selected for program enrollment.
- Who declined attending the program after being offered a seat.
- Who enrolled in the program.

All this information will help researchers keep track of who was truly randomized into the program, who stayed within their randomized group, and extra children who may have entered after randomization was complete.

**Do not use waitlists.** Using a waitlist, where children are offered entry outside the random selection process, will alter the lottery. Under this scenario, children are no longer given equal chances for entry into the program

#### Lesson #3: Avoid conducting an impact evaluation right away.

It would be prudent to wait to conduct an impact evaluation until at least the second year of implementation, and even better if it's the third year. Formative evaluations — or those that help programs understand how they are being implemented — can help identify early struggles and inform how to create better programs. These are the best evaluations to do in the early years of a new program. Once teachers, administrators and program leaders have a chance to work out the kinks, shift to an impact evaluation.





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