Final Report – Executive Summary

Texas Public Prekindergarten Class Size and Student-to-Teacher Ratio Study

Contract # 3494

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Summary of the Study Approach

Based on study requirements in TEC § 29.1545 (2015) and guidance from TEA and DFPS, the study team conducted a study with three components to determine recommendations for optimal class sizes and student-to-teacher ratios for children in Texas public prekindergarten programs that included:

1. Literature Review to gather information from the latest research on optimal class size and student-to-teacher ratios.
2. Extant Data Analysis of TEA's available prekindergarten enrollment and kindergarten beginning of year (BOY) outcome data to describe prekindergarten programs in the state and identify prekindergarten programs on which to conduct observations.
3. Observations of 97 prekindergarten classrooms across 32 campuses in 16 districts within the state to examine class size and student-to-teacher ratios and to identify potential best practices and examples from prekindergarten programs across the state.

Although the literature review was not required by TEC § 29.1545 (2015), TEA and DFPS included it as a study component due to known limitations in the data system, timeline to conduct observations, and the added value it would bring to the analysis and recommendations. Through an examination of patterns of findings from across the three study components, the study team addressed the following four overarching research questions:

- Research Question 1. What is the current status of class size and student-to-teacher ratio in prekindergarten programs in Texas?
- Research Question 2. In what ways do prekindergarten class size and student-to-teacher ratio relate to prekindergarten quality and to students' school readiness and academic performance?
- Research Question 3. What are some best practices and examples from effective prekindergarten programs in Texas pertaining to class size and student-to-teacher ratio?
- Research Question 4. What are the recommended optimal class sizes and student-to-teacher ratios for prekindergarten classes in Texas?

The study team addressed the research questions using the three study components in a mixed methods approach. Multiple methods allowed the study team to maximize the strengths of one method while filling in gaps or weaknesses of others, thus resulting in a more comprehensive examination of available data and information. Additionally, comparing findings across multiple data sources facilitated an in-depth assessment of how guidance on prekindergarten class size and student-to-teacher ratio can help improve education quality and effectiveness, resulting in a greater confidence in the recommendations made to the Texas Legislature.

calculated in the future. It was also agreed that the currently available data from ECDS were insufficient to calculate student-to-teacher ratios.

- This study was conducted within a four-month timeframe (April 21, 2016 to August 31, 2016) and decisions about study parameters were made accordingly. Most notably, the sample of high-quality prekindergarten programs for observations was based on the best campus-level data available at the very beginning of the study when sites needed to be selected. The assumption when using campus-level data was made that elementary schools with the highest average BOY kindergarten progress monitoring scores in 2015–16 were implementing quality prekindergarten programs in 2014–15.[13] Of course, not all children attending kindergarten had necessarily attended prekindergarten and other reasons may explain the high BOY kindergarten progress monitoring scores. Additionally, the observations of the selected prekindergarten programs were conducted in spring of the 2015–16 school year based on the assumption that the factors that may have contributed to school readiness in 2014–15 were also in place in 2015–16. Thus, some findings, particularly from the observational analyses, may merit further research with a larger observation sample.

Importance of High-Quality Early Childhood Education Programming

Research suggest that high-quality early childhood education not only directly benefits children and prepares them for school, but also provides benefits to society as a whole, such as increased labor force participation by parents and supporting state and regional economic growth (Child Care Aware of America, 2015; Committee on Economic Development, 2015).[14] From a cost-benefit analysis perspective, the benefits of providing high-quality prekindergarten outweigh the costs (Yoshikawa, et al., 2013; Temple & Reynolds, 2007; Heckman, 2011; Bartik, 2014). The evidence suggests that economic returns of high-quality prekindergarten programs exceed most other educational interventions, especially those that begin during the school-age years, such as reduced class sizes in the elementary grades, grade retention, and youth job training (Temple & Reynolds, 2007).

Defining High-Quality Early Childhood Education

The term high-quality is used to describe components of early childhood programs that researchers have found to be associated with development of physical, language, cognitive, social, and emotional skills that prepare a child for success in school. While researchers continue to debate what defines high quality, most suggest that both structural and process quality components must be present for a program to be considered high quality.

Structural and Process Quality in Early Childhood Education Programs

Structural features are considered to be foundational aspects of early childhood program quality that allow for higher process quality (Mashburn et al., 2008; Yoshikawa et

concludes that process quality dimensions of programs have the most significant impact on children's learning and development (Yoshikawa, et al., 2013).

Early Childhood Education Context in Texas

Texas's legislative history, a state-supported council and initiatives, public prekindergarten, and licensed child care programs demonstrate the state's commitment to early childhood education, with HB 4 being the most recent

- Added TEC § 29.170[22] requiring the TEA commissioner to evaluate the use and effectiveness of HB 4 funding in improving student learning, with an initial report due December 2018
- Added TEC § 21.461[23] requiring the TEA commissioner to develop and offer prekindergarten teacher training.

Texas Public Prekindergarten Programs and the HB 4 High-Quality Prekindergarten Grant Program

TEA oversees prekindergarten programs in public school districts and open enrollment charter schools in Texas. In the 2014–15 school year, 219,668 students were enrolled in Texas public prekindergarten programs (Texas Education Agency, 2016b).[24]

What is the current status of class size and student-to-teacher ratio in prekindergarten programs in Texas?

The findings related to this question are described first as associated with class size, followed by student-to-teacher ratio findings.

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conditions for increased process features of increased high-quality social and instructional interactions in the classroom that greatly contribute to positive child outcomes.

The prekindergarten classroom observations and corresponding analyses conducted as part of this study did not find a clear linear relationship between class sizes and student-to-teacher ratios and the quality of classrooms as measured by teacher-student interactions (i.e., CLASS PreK scores). That is, as class size or student-to-teacher ratios increased, there was not a corresponding change (increase or decrease) in the quality of teacher-student interactions. However, classrooms with ratios higher than 15:1 had significantly lower overall CLASS PreK scores, including lower Emotional Support and Instructional Support scores, which suggests that quality interactions were less likely to occur in classrooms exceeding 15:1 student-to-teacher ratios. While classrooms were selected for potential to be high-quality, approximately 27% had student-to-teacher ratios that were associated with lower quality scores. This finding merits further research with a larger observation sample. For class size, the largest class size observed was 29 students and generally there was a limited number of classrooms with both small numbers of students and large numbers of students which may explain the in

ratios ranged from 8:1 to 11:1. Observed classrooms with these ratios had the highest ratings on Instructional Support and Emotional Support domains. The difference in CLASS PreK quality scores was not significant until a comparison was made between classroom ratios of 15:1 or fewer versus 16:1 and higher. That is, classrooms with student-to-teacher ratios of 15:1 or less were associated with significantly higher quality on average than classrooms with higher student-to-teacher ratios. In classrooms with ratios of 15:1 and lower, several best practices were observed including more analysis and reasoning, creation, integration, connections to the real world, encouragement and affirmation, feedback loops, provision of information, scaffolding, advanced language use, open-ended questions, repetition and extension. Although the student-to-teacher ratio of 15:1 or less from the classroom observation data is higher than the ratio suggested by research (no more than 11:1), preliminary findings from the