

RESEARCH BRIEF

JUNE 2016

A Research Brief
from the *Study of
California's Transitional
Kindergarten Program*

Transitional Kindergarten in California

What Do Transitional Kindergarten Classrooms Look Like in the Third Year of the Program's Implementation?

Introduction

California's Kindergarten Readiness Act of 2010 established transitional kindergarten (TK), the first year of a two-year kindergarten program for students affected by the change in the birthdate cutoff for entry into kindergarten from December 2 to September 1. Instead of enrolling in regular kindergarten, students who turn 5 years old between September 2 and December 2 now receive an "age and developmentally appropriate" experience in transitional kindergarten prior to entering kindergarten the following year (California Department of Education, 2016).

The Kindergarten Readiness Act also changed the date by which children must turn 5 years old to enter kindergarten from December 2 to September 1, phasing in the new age requirement by moving the cutoff date back one month per year for three years, beginning in fall 2012 and offering TK to students in the affected data range each year. Now that this three-year rollout of TK is complete, and students from the full birthdate range of September 2 to December 2 are receiving TK, practitioners and policymakers are interested in learning more about the TK experience. How is the TK program structured? Who are the teachers teaching TK? How do teachers approach the instruction of these younger students?

This fifth short report in a series highlighting findings from the Study of California's Transitional Kindergarten Program focuses on what we have learned about the structure, teachers, and instruction in TK classrooms in the 2014–15

Key Findings

The purpose of this short report is to describe transitional kindergarten (TK) classrooms in their final year of the program's rollout, when all age-eligible children are included in the program. Key findings include:

- The majority of TK classrooms were full-day, standalone classrooms (enrolling only TK students), with an average of 20 students.
- The majority of TK teachers had experience teaching kindergarten, and about one quarter of all TK teachers had taught preschool.
- On average, TK students spent the most instructional time on reading activities; however, students in standalone TK classrooms spent more time learning about a variety of subjects (including art, music, and social studies) than did their peers in TK/K combination classrooms.
- Overall, TK students spent nearly a third of their time in whole-group instruction, and the majority of instruction was didactic in nature, in which teachers provide information to students in a less interactive way. Scaffolding strategies were used less than a quarter of the class time, on average.
- The quality of teacher-student interactions in TK classrooms was comparable with quality observed in preschool classrooms across the country.

school year. The findings are based on a survey of 200 TK teachers and 184 classroom observations in 20 school districts conducted in spring 2015. Additional details about the study's methods are described in the Appendix.

How Are TK Programs Structured?

We begin with an examination of the structural format of TK programs across the state to better understand how schools form TK classrooms—whether TK is offered as a full-day or part-day program, whether TK students are grouped together with kindergarten students, and how many students and teachers comprise these classrooms.

TK Classroom Schedule and Structure

The majority of TK classrooms offered a full-day schedule.

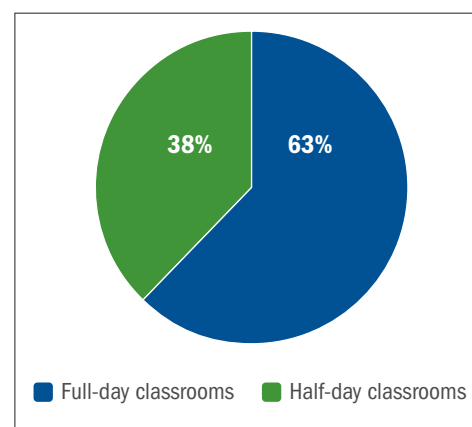
Nearly two thirds of TK classrooms (63%) were full-day programs (Exhibit 1), offering, on average, six hours of instruction per day. This finding is consistent with the trend in California to move toward full-day kindergarten (Cannon, 2009) and the structure of most kindergarten classrooms across the country (Child Trends, 2015). Still, 38% of TK classrooms were half-day programs, reflecting some variation across districts.

The majority of TK classrooms are standalone TK classrooms.

Approximately three quarters (76%) of TK classrooms in 2014–15 were standalone TK classrooms with only TK students enrolled, focusing on serving children within the designated three-month age range. Conversely, about one quarter (24%) of TK classrooms in the study in 2014–15 were combination classrooms in which TK students are in the same classrooms as kindergarten students (Exhibit 2). This structure is similar to that of kindergarten classrooms prior to the Kindergarten Readiness Act, in which 4-year-olds were enrolled alongside 5-year-olds; however, the age variation within combination classrooms can now be even larger, with the current year's TK students (who are not yet 5 years old) attending with a group of kindergarten students that includes the previous year's TK students (who turn 6 early in the school year). This greater age distribution likely requires teachers to differentiate instruction to meet widely varying learning needs.

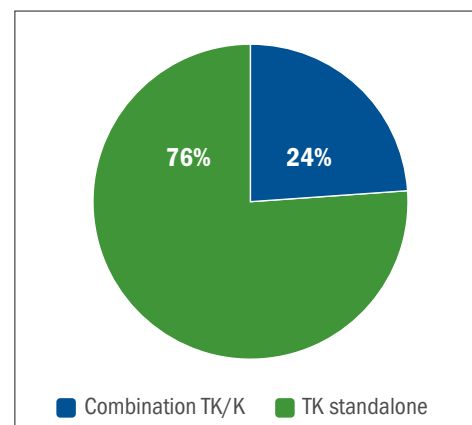
Districts may elect to place TK students in TK/K combination classrooms if they have only a few children age-eligible for TK. In the first year of the program's three-year rollout, when only children with birthdays between November 2 and December 2 were eligible for TK, more districts relied on TK/K combination classrooms to serve these

Exhibit 1. Percentage of TK Classrooms That Were Full Day or Half Day



Note. $n = 183$.

Exhibit 2. Percentage of TK Classrooms That Were Standalone or Combined With Kindergarten



Note. $n = 189$.

TK students because they were so few in number and it was very expensive to create a standalone class. Now that children with birthdays between September 2 and December 2—three months of birthdays—are eligible for the program, districts may be more frequently creating standalone TK classrooms because the larger number of eligible students makes this option more feasible.

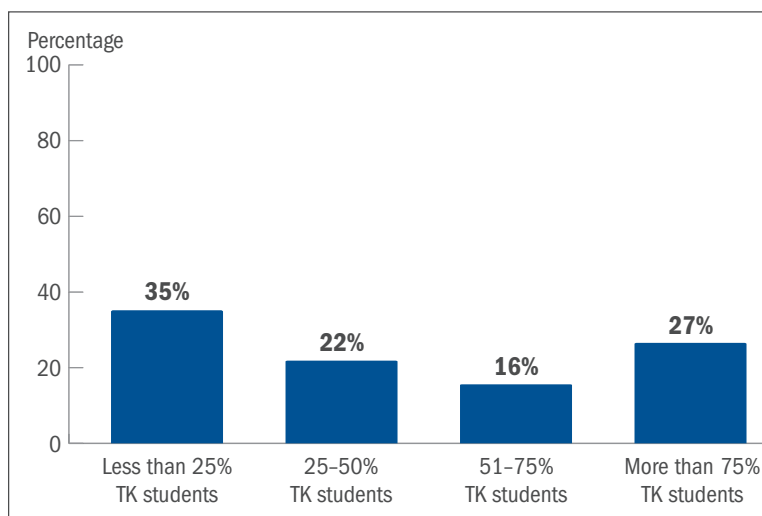
Class Sizes and Teacher–Student Ratios

The average TK classroom had 20 students, and combination classrooms, on average, were larger than standalone TK classrooms.

Overall, TK class sizes varied substantially from eight to 30 students in the study sample, with an average class size of 20 students statewide. This average is smaller than the size of the average California kindergarten classroom, which had 23 students in 2014–15 (California Department of Education, n.d.). The average class size for a standalone TK classroom was smaller (19 students) than for a TK/K combination classroom (24 students).

The proportion of TK students to kindergarten students in TK/K combination classrooms varied widely. As shown in Exhibit 3, the majority of TK/K combination classrooms had a critical mass of TK students enrolled (with TK students representing more than a quarter of the students). However, more than a third of combination classrooms had a relatively small group of TK students (25% or fewer, or less than five students for the typical classroom). In the first year of TK implementation, combination teachers indicated that differentiating instruction for their TK students was a significant challenge (Quick et al., 2014), and having a small number of TK students relative to kindergarten students may make meeting the needs of those younger students even more challenging for teachers. In combination classrooms with such small proportions of TK students, students’ experiences might be similar to what they would be in a regular kindergarten class and less like a targeted TK experience.

Exhibit 3. TK/K Combination Classroom Structure: Variation in Percentage of TK Students



Note. $n = 85$.

However, because there were fewer TK students in each combination classroom (compared with standalone classrooms) and fewer combination classrooms than standalone classrooms, a relatively small proportion of TK students was served in combination classrooms statewide. We estimate that only 13% of all TK students were served in a combination setting. Most TK students were served in standalone classrooms.

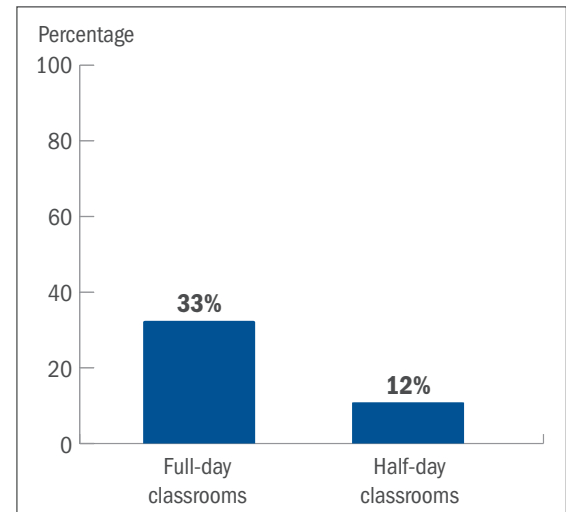
Half of all TK teachers had an assistant in the classroom for at least part of the day, making the average teacher–student ratio about one teacher for every 17 students.

Half of all TK teachers had assistance from either another teacher or an aide in the classroom for at least part of the day. Although the average TK classroom had 20 students, the additional support (which varies in duration) from another teacher or aide brought the average ratio down to one teacher for every 17 students. This differs from required ratios for preschool-age children in California, which are one teacher per 12 preschoolers (to meet

California Department of Social Services licensing requirements), one adult per eight preschoolers (to meet Title 5 standards) (California Department of Social Services, 2005), and one adult per 10 preschoolers to meet National Association for the Education of Young Children (NAEYC) accreditation standards (NAEYC, 2016) and federal Head Start Program Performance Standards (U.S. Department of Health and Human Services, 2015). Moreover, the ratios in preschool classrooms must be maintained at all times; in contrast, the ratio of one to 17 in TK classrooms represents an average ratio over the course of a day or week, and it may be higher or lower at any given time. Thus, on average, TK teachers have less support from other adults in the classroom than do preschool teachers, and that support is not consistently available during the course of each school day. In addition, TK teachers in part-day classrooms reported having less support during the course of the day or week; while part-day classroom teachers had another teacher or aide available in the classroom for an average of 12% of instructional time, TK teachers in full-day classrooms reported having support for 33% of instructional time, on average, each week (Exhibit 4).

Although not as low as in preschool, the average ratio of students to teachers reported in TK classrooms is substantially lower than what is mandated for kindergarten classrooms by law. California Education Code (sections 41376 and 41378) requires districts to maintain an average class size of at most 31 students, with no kindergarten or TK classroom exceeding 33 students, and there is no requirement for another teacher or aide to provide support in the classroom.

Exhibit 4. Percentage of Weekly Instructional Time With Support From an Aide or Other Teacher, by Length of School Day



Note. $n = 171$.

* $p < .05$.

What Are the Characteristics of TK Teachers?

Critical to the development of effective learning environments for these students are the TK teachers themselves. Thus, we turn to an examination of the qualifications and experiences of TK teachers who staff the TK classrooms, including their training, teaching experiences, and ongoing professional development.

Teacher Qualifications

All TK teachers held a bachelor's degree, and half had a master's degree.

All TK teachers held a bachelor's degree, and 50% reported holding a master's degree as well. Ninety-six percent of TK teachers reported having an elementary (multiple subject) teaching credential.

Experience Teaching Early Grades

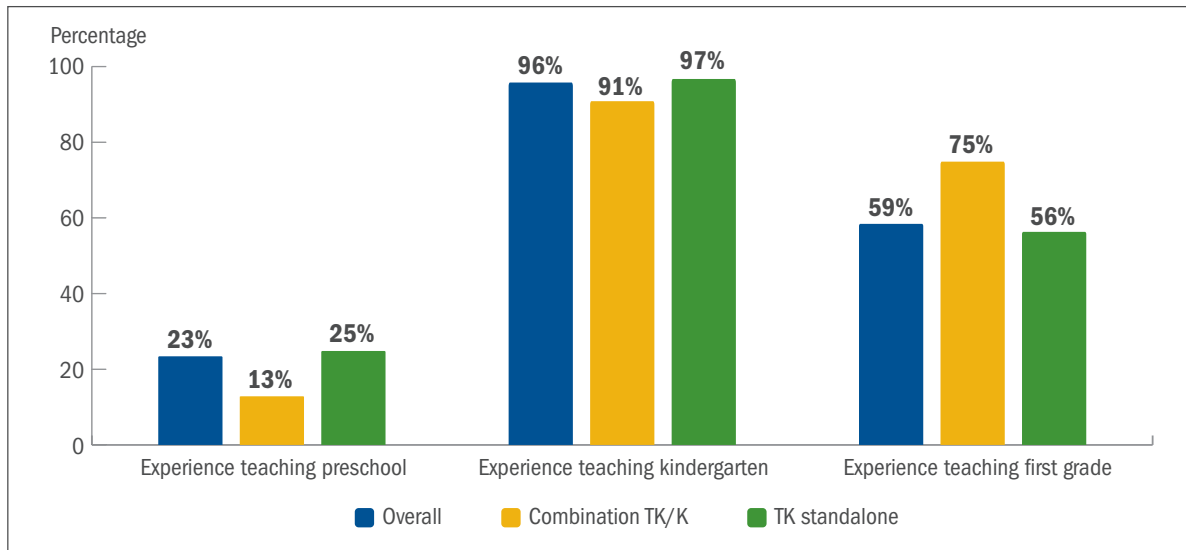
The vast majority of TK teachers had experience teaching kindergarten, and their familiarity with the kindergarten curriculum may help them to better prepare their TK students for kindergarten.

The vast majority of all TK teachers (96%) had experience teaching kindergarten. This finding is not surprising, given that TK is considered the first year of a two-year kindergarten experience, and many districts drew from their pool of kindergarten teachers to fill TK positions. This previous experience with the kindergarten curriculum may facilitate alignment between TK and kindergarten instruction.

About one quarter of all TK teachers had taught preschool; this was more common among teachers of standalone TK classrooms compared to TK/K combination teachers.

Having TK teachers with experience teaching kindergarten has the potential to strengthen alignment between TK and kindergarten, but some background or training in early childhood education also is considered important to ensure that the early learning experiences of these younger 5-year-olds are developmentally appropriate. Approximately a quarter (23%) of TK teachers reported that they had taught preschool prior to teaching TK (Exhibit 5). With the passage of Senate Bill 876 (SB 876), which added the requirement for all new TK teachers to have either preschool teaching experience, 24 units in early childhood education or child development, or a child development teacher permit, we expect over time to see more teachers with early childhood education experience.

Exhibit 5. Teachers' Experience Teaching Early Grades, Overall and by Type of TK Classroom



Note. $n = 125$.
 $p = ns$.

Ongoing Professional Development

TK teachers reported participating in a range of professional development activities to support their teaching and ongoing learning. On average, TK teachers reported participating in just over 38 hours of professional development activities during the 2014–15 school year, including the summer before the school year began. Of these hours devoted to professional development, approximately 19 were focused specifically on TK. Overall, approximately 82% of TK teachers reported that they had participated in at least some professional development activities focused specifically on TK.

In addition, 65% of teachers reported that they had earned some units in early childhood education/childhood development as of the 2014–15 school year. Again, with the passage of SB 876, we expect more TK teachers will be earning early childhood education units in future years as part of their ongoing professional development.

What Is the Content and Organization of Instruction in TK Classrooms?

Perhaps more important than structural features of the TK classroom or particular qualifications of the classroom teacher are the experiences of the student in the TK classroom—the content, focus, and approach to classroom instruction. Thus, we also examine the content covered, the format of instruction, and instructional strategies used by TK teachers. Different approaches may be more or less appropriate for younger students and may vary in their impacts on students' preparation for kindergarten.

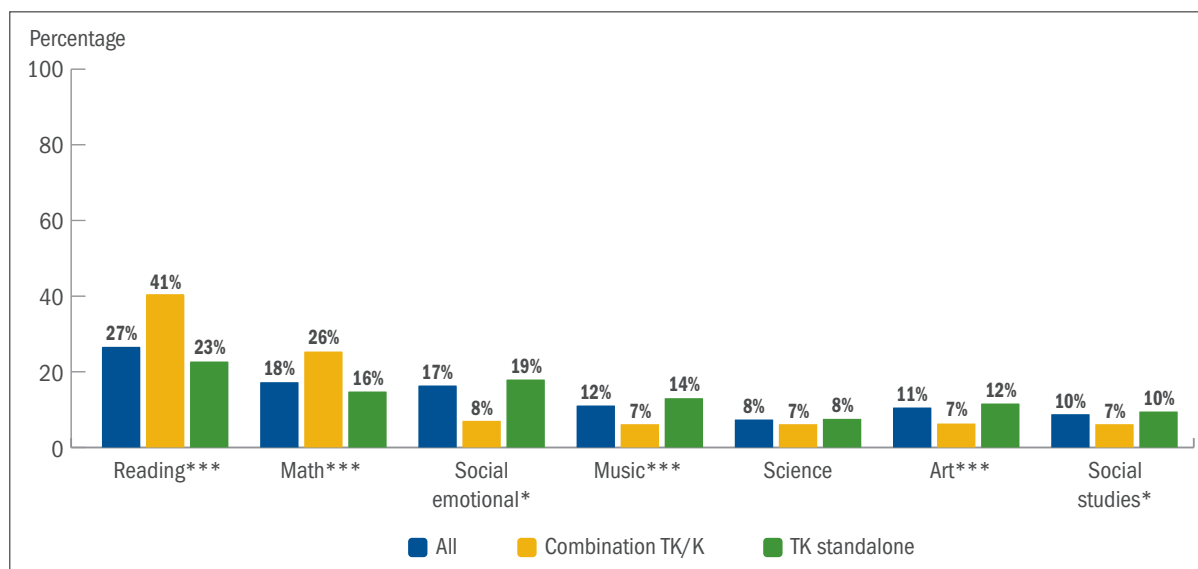
Instructional Content

On average, TK students spent the most instructional time on reading activities; in addition, students in standalone TK classrooms spent more time on art, music, social studies, and social-emotional learning than their peers in TK/K combination classrooms.

During the first phase of the study, AIR found that in the first year of the program's implementation, standalone TK classrooms offered more time for instruction across content areas (including art and music), a practice that is recommended for young children (Hart, Burts, & Charlesworth, 1997), than TK/K combination classrooms.

In the third year of the program's rollout, we found that this difference between classroom models still existed. Exposure to literacy and math instruction is critical for developing kindergarten readiness skills, but standalone TK teachers also found time for instruction in other subject areas. Whereas teachers in TK/K combination classrooms devoted up to 67% of instructional time to literacy and mathematics, standalone TK teachers only spent up to 39% of the time across these two subjects, devoting a significantly greater percentage of time to social-emotional learning, music, art, and social studies than in TK/K combination classrooms (Exhibit 6). This may reflect the intention of the California Legislature for the TK curriculum to be aligned with the California Preschool Learning Foundations developed by the California Department of Education (California Department of Education, 2016). Teachers in both standalone TK classrooms and TK/K combination classrooms reported that they devoted the greatest percentage of daily instructional time to reading.

Exhibit 6. Content Areas of Instruction, by Type of TK Classroom



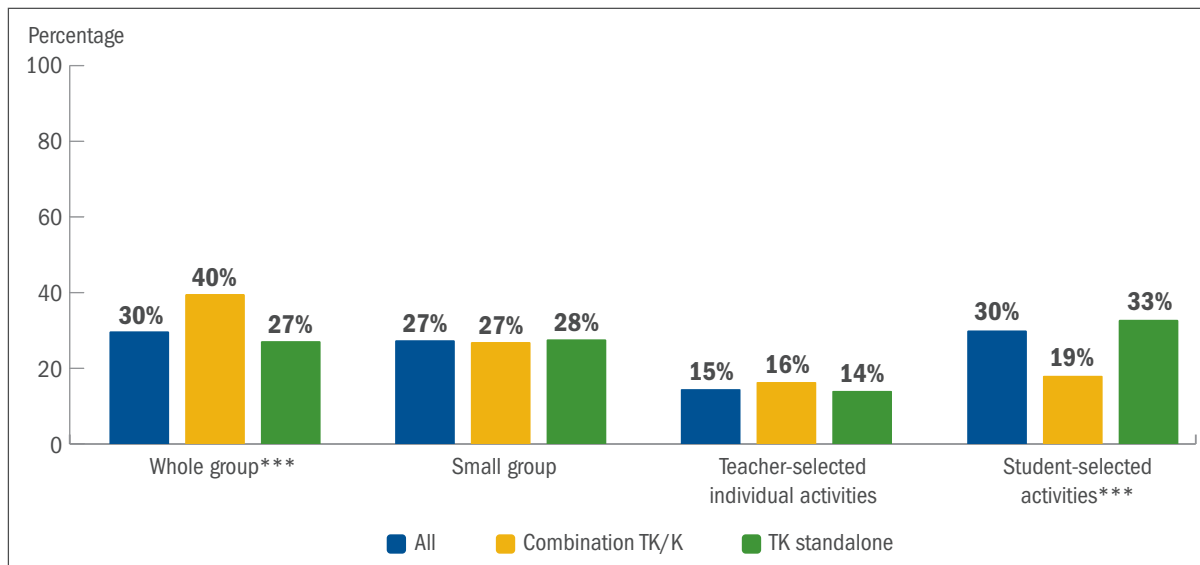
Note. $n = 180$.
* $p < .05$; *** $p < .001$.

Grouping and Instructional Setting

Overall, TK students spent nearly a third of their time in whole-group instruction. However, students in standalone TK classrooms had more varied experiences than students in combination classrooms; students spent the largest portion of their day engaged in self-selected activities.

Students in standalone TK classrooms tended to spend more time in instructional settings and groupings that would be considered more developmentally appropriate (National Association for the Education of Young Children, 2009) than did students in TK/K combination classrooms. That is, students in standalone TK classrooms spent significantly less time in a whole-group setting (which is less conducive to the recommended practices of student choice and personalized instruction) and significantly more time engaging in student-selected activities (e.g., free choice, in which students select what they would like to do) than did their peers in TK/K combination classrooms (Exhibit 7). This finding is consistent with reports from the first year of TK implementation, where we also found that the proportions of the day TK/K combination students spent in whole-group, small-group, teacher-selected individual, and student-selected activities were similar to time spent by their peers in standalone kindergarten classrooms (Quick et al., 2014).

Exhibit 7. Percentage of Class Time Spent in Different Grouping Arrangements, by Type of TK Classroom



Note. $n = 190$.

*** $p < .001$.

Teacher–Student Interactions

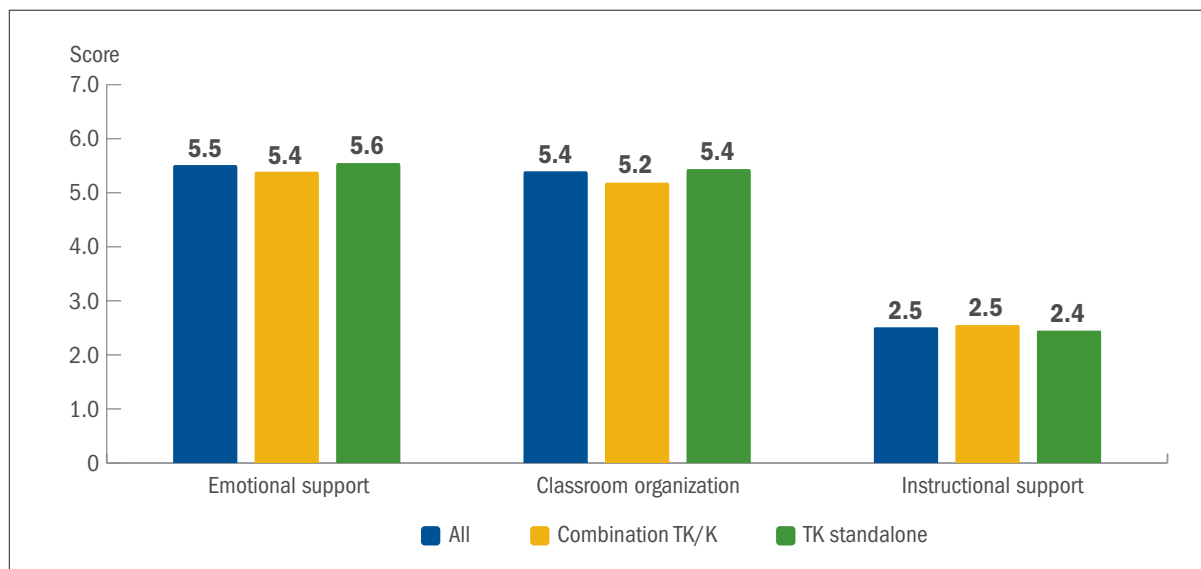
The quality of teacher–student interactions in TK classrooms was comparable with the quality observed in preschool classrooms across the country; teachers provided moderately strong emotional support for students but moderately low levels of instructional support that promotes students’ thinking, problem solving, and language skills.

Using the Classroom Assessment Scoring System (CLASS) (a well-established observational tool) to evaluate the interactions between TK teachers and students, we examined the extent to which TK teachers provided emotional support (e.g., fostered warm, supportive relationships among teachers and students), managed classroom

organization (e.g., reinforced students' prosocial behavior), and offered instructional support (e.g., developed students' language and conceptual skills).

Across 184 observations of standalone and TK/K combination classrooms, we found that TK teachers overall provided moderately high-quality instruction in the domain of Emotional Support, which has been shown to be associated with growth in reading and mathematics achievement from kindergarten through Grade 5 (Pianta et al., 2008), as well as in the domain of Classroom Organization. In contrast, the Instructional Support domain, which has been shown to be the most predictive of students' cognitive outcomes overall (Howes et al., 2008; Mashburn et al., 2008), was in the low to low-to-middle range. These findings are consistent with trends observed in other large-scale studies of preschool and kindergarten classrooms using the CLASS tool, which indicated that even though Emotional Support and Classroom Organization are often of moderate to high quality, Instructional Support is typically at a lower level of quality (Barnett, Lamy, & Jung, 2005; National Center on Quality Teaching and Learning, 2012; Office of the Administration for Children and Families Early Childhood Learning and Knowledge Center, n.d.; Ponitz, Rimm-Kaufman, Grimm, & Curby, 2009; U.S. Department of Health and Human Services, 2016). As shown in Exhibit 8, there were no significant differences between standalone TK and combination classrooms on any of the three domains.

Exhibit 8. Scores of TK Classrooms on CLASS Domains, by Type of TK Classroom



Note. $n = 184$.
 $p = ns$.

Didactic Versus Scaffolding Instruction

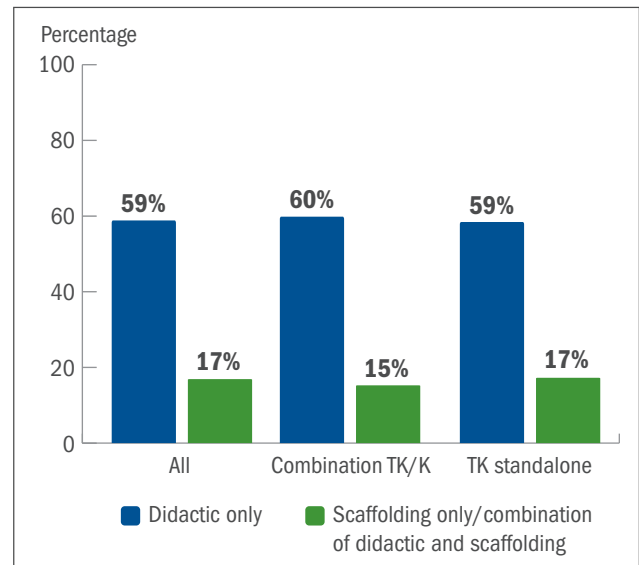
The majority of instruction in TK classrooms was didactic in nature, in which teachers provide information to students in a less interactive way. For less than a quarter of instructional time, teachers used scaffolding teaching strategies to support and expand students' learning.

Using the Emerging Academics Snapshot observational tool (Ritchie, Weiser, Kraft-Sayre, Howes, & Weiser, 2001), we examined the extent to which TK teachers used didactic teaching methods, or strategies in which a teacher imparts information or instructions to students but does not encourage them to reflect or generate their own thoughts or ideas. Didactic teaching strategies include a teacher modeling or demonstrating the correct way to do an activity, providing instructions, imparting information, or asking students closed-ended questions.

TK teachers in both standalone and combination classrooms were observed using didactic teaching strategies for the majority of the observed time (59%).

The use of scaffolding (or a combination of scaffolding and didactic strategies) was less frequent than didactic strategies alone in TK classrooms (17% of the time) (Exhibit 9). Scaffolding is characterized by a teacher's awareness of an individual student's needs and responses that support and expand the student's learning. Scaffolding includes strategies such as asking open-ended questions, following students' interests, motivating students by being personally involved in their activities, helping students expand on their answers and thoughts, working to link classroom activities to students' lives and experiences, or posing problems to students that have multiple solutions. Scaffolding is considered a more developmentally appropriate practice for young children (Copple, Bredekamp, Korelak, & Charner, 2013; NAEYC, 2011). There were no significant differences in these instructional methods between standalone TK and TK/K combination classrooms.

Exhibit 9. Instructional Approach, by Type of TK Classroom, Measured by the Emerging Academics Snapshot Tool



Note. $n = 184$.
 $p = ns$.

Summary and Conclusions

Three years into the implementation of transitional kindergarten, we examine the characteristics of TK programs across the state—the structure of TK classrooms, characteristics of teachers, and the content and organization of classroom instruction. The surveys of TK teachers and observations of their classrooms conducted in spring 2015 provide a snapshot of how TK was being implemented in the third year of statewide rollout of the program. Key findings and considerations for future attention are highlighted here.

The majority of TK classrooms provided a structure that may be conducive to supporting student readiness for kindergarten. TK classrooms across the state were mostly standalone TK classrooms in 2014–15, an increase over the first year of implementation in which fewer than half of all districts offered TK in a standalone format. Standalone TK classrooms, which include only TK students, may be more likely to be geared toward the learning needs of these younger students. Most classrooms offered full-day instruction with a credentialed teacher who has a bachelor's degree and experience teaching kindergarten. Having an experienced kindergarten teacher providing TK may facilitate alignment with the kindergarten curriculum and ultimately support students' preparation for kindergarten the following year.

The average TK classroom was smaller than kindergarten classrooms, but the ratio of teachers to students was lower than is required for State Preschool. The average TK class size was 20 students, compared with 23 students in the average kindergarten classroom statewide. With some support from classroom aides or other teachers, the average teacher-student ratio in TK classrooms was one teacher for every 17 students. This differs from licensing requirements for preschool programs (which is one teacher for every 12 preschoolers) and State Preschool (which is one adult for every eight preschoolers). Thus, TK classrooms appear to be situated between preschool and kindergarten classrooms in terms of size and teacher support.

Standalone TK classrooms provide a more balanced curriculum and a more developmentally appropriate experience for TK students than TK/K combination classrooms. Compared with combination classrooms, class sizes tend to be smaller in standalone classrooms, and teachers in standalone classrooms tend to have more support from another teacher or aide over the course of each week. This may allow for more differentiated instruction to meet individual student learning needs. Students in standalone TK classrooms spend less time in whole-group activities and more time selecting their own activities, compared with combination classrooms. This student-led learning experience is a critical component of developmentally appropriate practice. In addition, although TK students in combination classrooms spend much more time in reading and mathematics activities (similar to kindergarten classrooms), TK students in standalone classrooms experience a curriculum that is more evenly distributed across the content areas, including more time for art, music, and social-emotional development.

Teachers in both standalone TK and TK/K combination classrooms demonstrated moderately high quality interactions in terms of emotional support and classroom organization. Using the CLASS tool, observations of TK classrooms revealed that teachers in both standalone and combination models provided moderately high-quality interactions with their students in terms of developing positive relationships, promoting enjoyment in learning, comforting students, encouraging appropriate levels of independence, and managing the classroom in a way that maximized learning and kept the children engaged.

Districts could provide TK teachers more guidance on how to promote children's thinking and problem solving, use feedback to deepen understanding, and help children develop more complex language skills. TK classroom observations also revealed teachers' Instructional Support in the low to low-to-middle range, as measured by the CLASS tool. In addition, teachers were observed using didactic teaching methods for the majority of the instructional time, and scaffolding strategies were used less than a fifth of the time. Although low levels of instructional support and scaffolding are commonly observed in other state and national studies, given the importance of these elements of teacher practice (e.g., Mashburn et al., 2008; Pol, Volman, & Beishuizen, 2010), schools and districts should explore professional development opportunities that aim to help teachers enhance students' analysis and reasoning skills, promote their language skills, and scaffold their learning more generally.

Appendix. Methodology

TK Teacher Surveys

AIR administered surveys to teachers of both standalone TK and TK/K combination classrooms in spring 2015. A total of 240 teachers received the survey and 200 completed the survey, resulting in an 83% response rate. TK teacher surveys covered a variety of topics to determine students' experiences in standalone TK or TK/K combination classrooms. Such topics included classroom structure, instructional planning, staff collaboration, professional development opportunities, curriculum, instructional strategies, assessment, and family engagement strategies.

Classroom Observations

In addition to the survey, the evaluation team observed TK teachers from a sample of elementary schools in California in spring 2015. In spring 2015, a total of 184 classrooms were observed. The evaluation team purposely added more combination classrooms to the sample in 2015 to ensure that the study represented enough students from combination classrooms. As a result, in 2015, 54% of the observed classrooms were standalone and 46% were combination classrooms. AIR applied weights to the estimates to ensure that the sample was representative of the state population.

The Classroom Assessment Scoring System (CLASS) tool was selected to assess interactions between and among teachers and students; the CLASS tool measures interactions between teachers and students in three domains: Emotional Support, Classroom Organization, and Instructional Support. As shown in Exhibit A1, these three domains include a total of 10 dimensions, which are based on developmental theory and research suggesting that interactions between students and adults are the primary mechanism of student development and learning (Greenberg, Domitrovich, & Bumbarger, 2001; Hamre & Pianta, 2007; Morrison & Connor, 2002; Pianta, 2006; Rutter & Maughan, 2002). Each CLASS cycle of observation includes 20 minutes of observation, followed by a 10-minute period in which the observer assigns a score ranging from 1 (minimally characteristic) to 7 (highly characteristic) for each dimension. A score of 1 or 2 signifies that the quality of teacher–student interactions is low. A score of 3, 4, or 5 is considered midrange and is given when classrooms show a mix of effective interactions with periods when interactions are not effective or are absent. A score of 6 or 7 means effective teacher–student interactions are observed consistently throughout the observation period.

Exhibit A1. CLASS Domains and Dimensions

Emotional Support	Classroom Organization	Instructional Support
Positive Climate	Behavior Management	Concept Development
Negative Climate	Productivity	Quality of Feedback
Teacher Sensitivity	Instructional Learning Formats	Language Modeling
Regard for Student Perspectives		

The Emerging Academics Snapshot tool (Snapshot) was selected to supplement the data collected through CLASS (Ritchie et al., 2001.). The Snapshot is a time-sampling observation instrument designed to measure student's exposure to instruction (by content area and grouping format), student's engagement in different academic activities, and adult responsiveness and involvement. It is intended to provide an in-depth, minute-by-minute analysis of how students experience activity settings (e.g., whole group, free choice, transitions), content areas

(e.g., literacy, science, mathematics), and teaching approaches (e.g., didactic, scaffolding). In each TK classroom observation, up to four “target students” were observed in sequence throughout the morning to measure a TK student’s experience on a typical day of instruction. To complete a Snapshot, an observer locates the first target student and spends one minute observing and coding (20 seconds observing; 40 seconds coding) the student’s activities and interactions. The observer then moves on to the next student on the list. This process is repeated in four-minute blocks of time throughout the observation period. Over the course of a program morning, a minimum of 30 and up to 50 observations are collected for each target student.

Weights

The evaluation team observed TK teachers from a sample of elementary schools in California. AIR applied weights to the estimates to ensure that the sample was representative of the state population. The weights used in the calculations take into account school and district characteristics (percentage of students eligible for free and reduced-price lunch, percentage of English language learners, and urbanicity) and the probability of a district’s being selected. In addition, the classroom observation weights take into account the classroom type (standalone TK or TK/K combination classroom). The weights also were adjusted for district and teacher nonresponse. In order to compare Year 2 with Year 3 observation data, we assumed that both samples were independent, as they portray a picture of the state in the given year.

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About the Study

In 2010, then-Governor Arnold Schwarzenegger signed the Kindergarten Readiness Act into law, moving up the date by which students must turn 5 to enter kindergarten, aligning California's kindergarten enrollment policy with the policies of most other states in the country and creating the transitional kindergarten (TK) program for young 5-year-olds affected by the change. To determine whether TK is effective in improving school readiness and learning outcomes for students, American Institutes for Research (AIR) is conducting an evaluation of the impact of TK in California. The goal of this study is to assess the impact of TK on California students' readiness for kindergarten across multiple domains of development critical for success in school. Using a regression discontinuity design, this study examines whether TK participation improves kindergarten readiness in the domains of early literacy and language, mathematics, executive function, and social-emotional skills. Funding for this study was provided by the Heising-Simons Foundation, the David and Lucile Packard Foundation, and First 5 California.

More information about the study is available at <http://tkstudy.airprojects.org>.

About AIR

Established in 1946, with headquarters in Washington, D.C., American Institutes for Research (AIR) is an independent, nonpartisan, not-for-profit organization that conducts behavioral and social science research and delivers technical assistance both domestically and internationally. As one of the largest behavioral and social science research organizations in the world, AIR is committed to empowering communities and institutions with innovative solutions to the most critical challenges in education, health, workforce, and international development.

AIR's early childhood development research focuses on evaluating programs and policies, improving professional development, examining accountability and assessment systems, investigating program quality and classroom practices, and translating research to practice to aid young children and their families.



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