

Ready or Not?

Assessing Kindergarten Readiness in Central Texas



Authored by:

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Executive Summary

Overview

E³ Alliance conducted the 2011-2012 Kindergarten Readiness Study to determine the portion of Central Texas children who were ready for school when they entered kindergarten, using an assessment based on the Texas Pre-K Guidelines. The study surveyed Central Texas Kindergarten teachers on a representative sample of Central Texas kindergarten students, across four domains of child development (social-emotional development, language and communication, early literacy, and mathematics) to determine their kindergarten readiness.

Key Findings

- In the 2011-2012 school year, half (50%) of Kindergartners in the Central Texas region were ready for school, and half (50%) were not ready for school.
- Girls were ready for kindergarten at a higher percentage for overall readiness, and for all domains, than boys were. Girls were more ready than boys regardless of income status or Pre-K attendance.
- Children from low income households were less ready (40%) than children from homes that were not low income (62%).
- Asian and White students were more prepared for kindergarten than are Hispanic or Black students, and this same relationship between ethnicity and kindergarten readiness was also found when the analysis controlled for economic status.
- Overall, when controlling for other demographic variables, English language learners did not differ in their kindergarten readiness from non-English language learners.
- Children who had attended any type of Pre-K program (public or private) were more prepared for kindergarten (54%) than children who had not (38%). This was the case regardless of economic status such that low-income and non-low income students both showed higher kindergarten readiness after Pre-K.
- Attending Pre-K is associated with greater Kindergarten readiness overall, and readiness for low-income students who attended Pre-K was statistically indistinguishable from readiness of non-low-income students who did not attend Pre-K.
- Children from economically disadvantaged families who attended a Pre-K at a public school had greater overall readiness than those at home or with a relative.

Assessing Kindergarten Readiness

Overview

The Kindergarten Readiness Study was designed and implemented by E³ Alliance to determine the portion of Central Texas children who were ready for school when they entered kindergarten. The study was conducted on a representative sample of Central Texas kindergarten students from ten school districts and one charter school.¹ Teachers formatively assessed children across four domains of child development (social-emotional development, language and communication, early literacy, and mathematics) to determine their kindergarten readiness. This study provides information on a regional level about kindergarten teachers' rating on students' preparation for school, and the results have implications for what factors are predictive of school readiness, as well as how prepared kindergarten students are to meet state expectations for kindergarten.

Defining Readiness

Kindergarten Readiness is much more than just knowing A,B,C's or 1,2,3's. A holistic view of kindergarten readiness takes into account child development, expectations within the learning environment and curriculum, as well as state requirements for learning.

In early 2008, E³ Alliance convened teachers, school district administrators, community early childhood education providers, child development specialists, literacy specialists and researchers from the University of Texas at Austin and Texas State University to answer the question: "What does it mean for a child to be school ready?" Led by Region XIII Education Service Center, San Marcos Consolidated Independent School District, and United Way Capital Area's Success by Six Program and facilitated by E³ Alliance, the collaboration spent 18 months developing a definition of school readiness.

Although the State of Texas currently does not have a multidimensional assessment for school readiness in kindergarten, the state does have guidelines on school readiness. Texas Education Agency's 2008 Pre-K Guidelines served as the cornerstone of this assessment. The taskforce conducted a series of six work sessions focused on each of the domains identified in the Guidelines. Pre-K teachers, researchers, community providers and administrators carefully reviewed each child outcome to select outcomes that predict children's later learning and are strongly aligned to Texas Essential Knowledge and Skills (TEKS), using the following criteria:

- a) The outcome is represented in the 2008 TEA Pre-K Guidelines
- b) The outcome is developmentally appropriate and measurable
- c) The outcome is predictive of a child's future education success as demonstrated through research
- d) As appropriate, the outcome is aligned to TEKS

Using these criteria, a guide to school readiness, *Ready, Set, K!*, was developed that is

- 1) Diagnostic for student kindergarten readiness

- 2) Understandable and accessible for parents
- 3) Useful to teachers in their classrooms and
- 4) Provides a means to assess student readiness regionally.

The assessment is organized by the Pre-K guideline topic areas and competencies, as a criteria referenced assessment. Criteria referenced assessments are more appropriate to use to measure the baseline and progress of a population as a whole, rather than a normed assessment where scores are compared within a population.ⁱⁱ

How Many of Our Students are Ready?

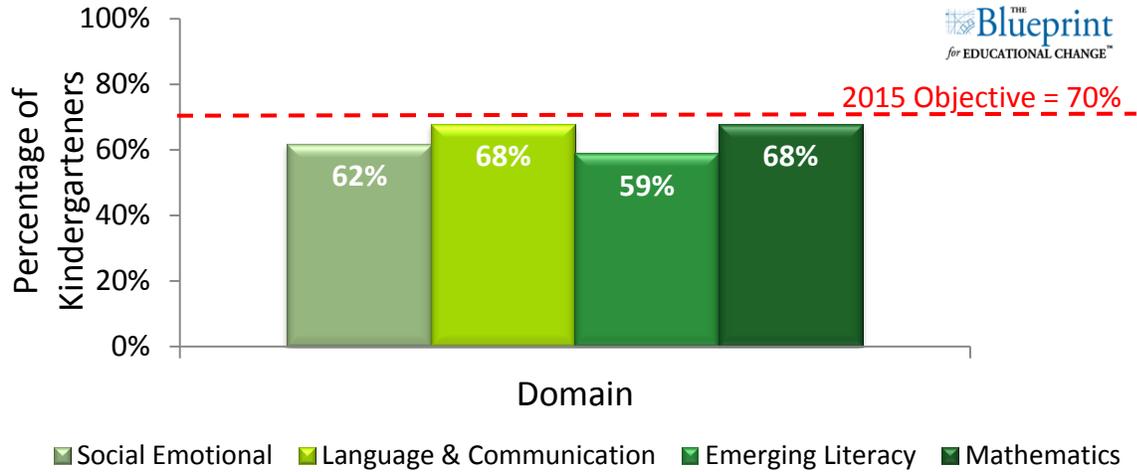
In the 2011-2012 school year, half (50%) of Kindergartners in the Central Texas region were ready for school, and half (50%) were not ready for school.

Figure 1. Percentage of Children entering Kindergarten Ready in 2011-2012



When academic (skills) readiness and social-emotional (behavioral) readiness are examined separately, 53.7% of students are academically ready and 61.7% of incoming Kindergartners are socially and emotionally ready for kindergarten. See Figure 2 for how readiness breaks down by domain.

Figure 2. Percentage of Children Entering Kindergarten School Ready, By Component of Readiness

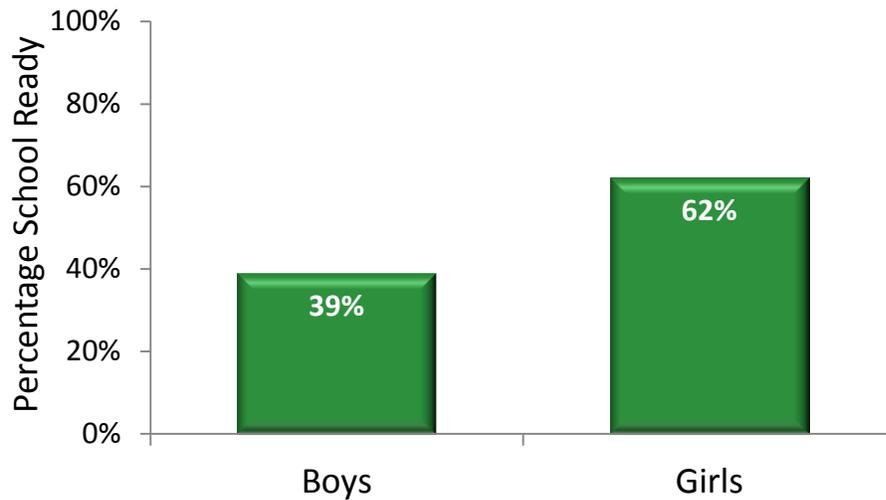


Factors Correlated with Readiness

Gender

For overall readiness, and for all domains, girls were ready for Kindergarten at a higher percentage than boys. Girls were more ready than boys regardless of income status or Pre-K attendance, see Figure 3.

Figure 3. Percent of Kindergartners school-ready by gender



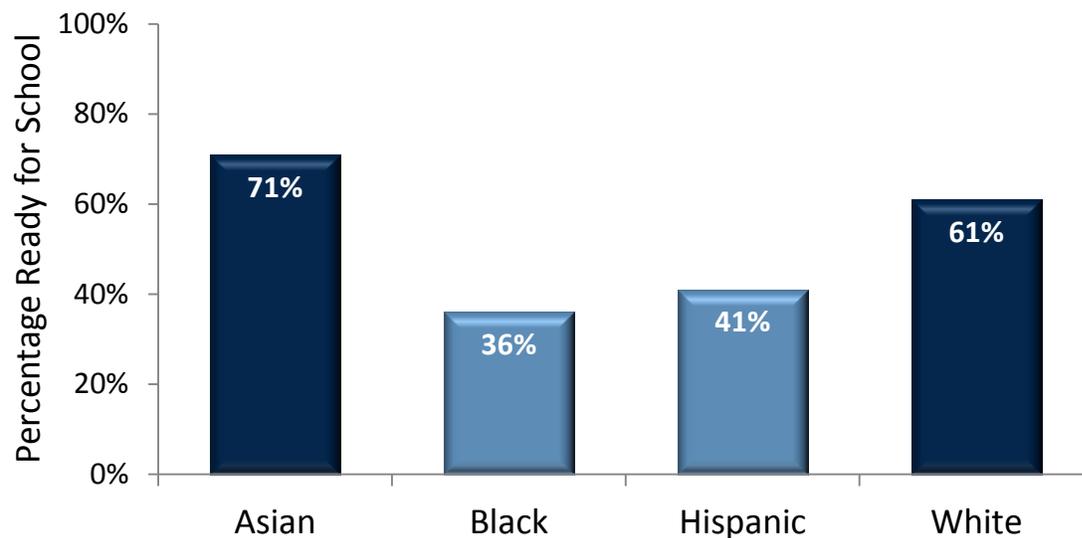
Economic Status

Similarly, children from low income households were less ready (40%) than children from homes that were not low income (62%).

Ethnicity

Asian and White students are more prepared for kindergarten than are Hispanic or Black students, see Figure 4. Furthermore, this same relationship between ethnicity and Kindergarten readiness was also found when the analysis controlled for economic status.

Figure 4. Percent of students ready for Kindergarten by Ethnicity



LEP

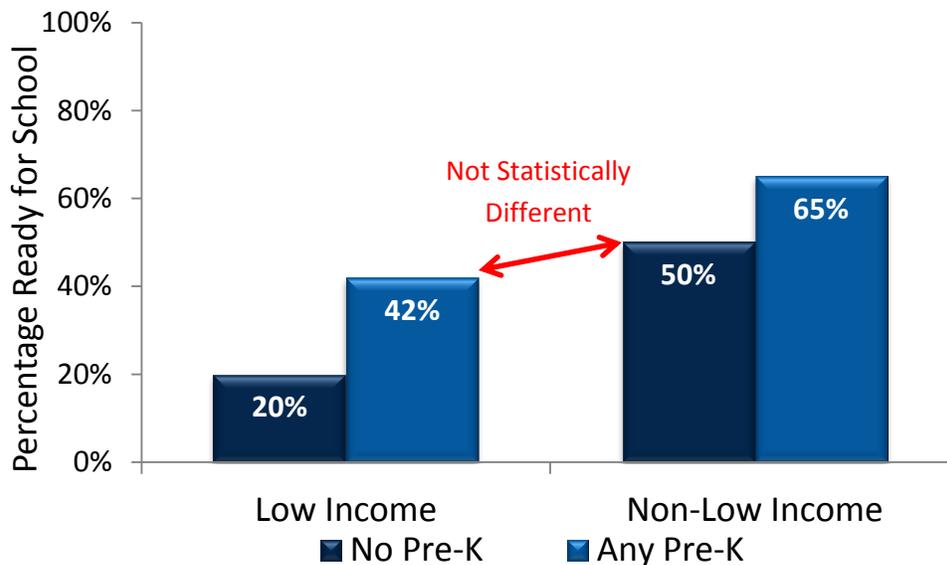
Overall, English language learners did not differ in their kindergarten readiness from non-English language learners when controlling for students' economic status, gender, ethnicity, and pre-kindergarten utilization. Because Spanish accounts for the first language for over 90% of the ELLs, Hispanic ELL students were examined separately, controlling for gender, economic status, and pre-kindergarten utilization. Again, there was no difference in readiness based on ELL status.

Pre-Kindergarten Utilization

Children who had attended any type of Pre-K program (public or private) were more prepared for kindergarten (54%) than children who had not (38%). This was the case regardless of economic status such that low income and non-low income students both showed higher kindergarten readiness after Pre-K. A planned comparison between the readiness of children who were economically disadvantaged and attended Pre-K (42%) and students who were not economically disadvantaged and did not attend Pre-K (50%) revealed no statistical difference, see Figure 5. This finding shows that attending Pre-K is associated with greater kindergarten readiness overall, and readiness for low-income students who

attended Pre-K was statistically indistinguishable from readiness of non-low-income students who did not attend Pre-K.

Figure 5. Percentage of kindergartners ready for school by Economic status and Pre-K attendance



Profiles of Readiness and Non-readiness

The typical child who is ready for kindergarten is female, not economically disadvantaged, is Asian or White, and attended Pre-K. These students accounted for 14% of the sample, and 82% of these students were ready for kindergarten in Central Texas.

The typical child who is not likely to be ready for school is male, economically disadvantaged, Black or Hispanic, and did not attend Pre-K. These students accounted for only 4% of the sample because most economically disadvantaged children attended Pre-K, but for these children, only 15% were ready for kindergarten in Central Texas.

For the 18% of the sample who were economically disadvantaged Black or Hispanic males who did attend Pre-K, 32% were ready for school. Thus, for this subpopulation, attending Pre-K corresponded to being twice as likely to be ready for kindergarten. Nonetheless, still only one third of this subpopulation who attended Pre-K was ready for school. Additionally, the domain where economically disadvantaged Black or Hispanic boys were least prepared was emerging literacy, with 26% of those who did not attend Pre-K ready in this domain and 43% for those who did attend Pre-K.

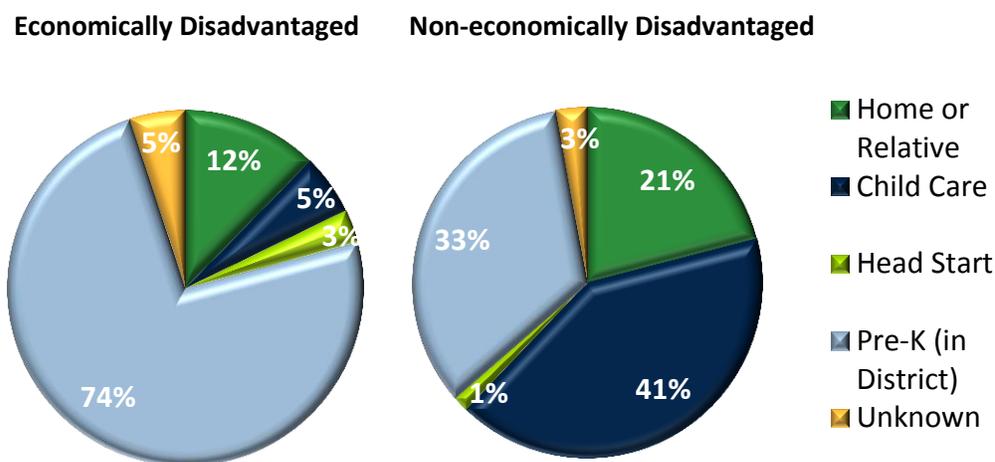
Children Prior to School

Pre-K Utilization Rates

The pattern of Pre-K attendance differed based on economic status of students. A majority of children in our sample attended a Pre-K program prior to kindergarten; for low income children, 83% attended,

and for non-low income children, 76% attended a Pre-K program. See Figure 6 for a detailed breakdown of where children in the study were in the year before kindergarten. It should be noted that there was no way of capturing the amount of Pre-K instruction a student received prior to kindergarten entry, for instance, whether a child attended a program regularly or attended more than one program prior to Pre-K or kindergarten.

Figure 6. Percentage of Kindergartners' prior Pre-K utilization by economic status

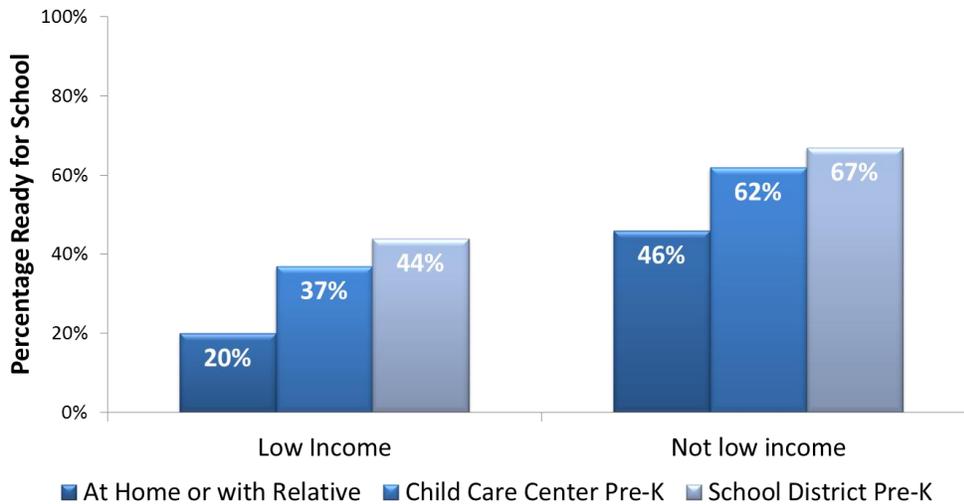


Notably, of the children eligible for Public Pre-Kindergarten in Central Texas, 75% were enrolled, which is a higher percentage than the 69% enrolled across Texas (PEIMS data from the Education Research Center at the University of Texasⁱⁱⁱ).

Relationship of Type of Pre-K and readiness

Attending any type of Pre-K is associated with greater readiness for kindergarten, but does the type of Pre-K relate to readiness? Children from economically disadvantaged families who attended a Pre-K at a public school (School District Pre-Kⁱⁱⁱ) had greater overall readiness than those at home or with a relative (See Figure 7). When the social emotional and academic components of readiness were examined separately, 57% of the economically disadvantaged children in the School District Pre-K were socially and emotionally ready, which was greater than 41% of children at home or with a relative. For children in child care Pre-K, 37% were ready for school, which did not differ statistically from the other two groups. Lastly, children in either School District Pre-K (46%) or Child care Pre-K (50%) were more academically ready than children at home or with a relative (23%). Note that only 5% of the economically disadvantaged children in the sample attended Child Care based Pre-K, so the results for this group need to be interpreted with caution.

Figure 7. Percentage of students ready for school by where they were prior to Kindergarten



For children who are not from economically disadvantaged families, more children at an School District Pre-K were ready compared to those at a child care center Pre-K who were in turn more ready than children who had been at home or with a relative prior to kindergarten (See Figure 7).

For social and emotional readiness, non-economically disadvantaged children who were at home or with a relative were less likely to be socially and emotionally ready for school (56%) compared to either child care Pre-K (75%) or School District Pre-K (72%). Likewise, children at home were also less likely to be academically ready (48%) than children in child care Pre-K (68%) or School District Pre-K (70%).

Implications for Practice and Research

Impact on schools

Fifty percent of Central Texas Kindergarten students were not ready for school when they entered Kindergarten in 2011. This means by the 12th week of school children were unable to display skills such as counting to ten, writing their own name, or paying attention to tasks without intensive teacher support.

In classes with up to 22 children, teachers across Central Texas are calibrating instruction to children who are entering kindergarten at different levels of readiness, both academically and socially. Understanding what skills children are coming in with can help teachers and schools better plan for the students that are enrolled, however; understanding that a full 50% of children are not able to start on the kindergarten curriculum without intensive teacher support is critical to systems planning.

Can children who do not enter kindergarten ready, catch up? National research on school readiness suggests that children that start behind stay behind.^{iv} Knowing that 50% of Central Texas students are starting behind, what interventions *can* help children succeed in school and can schools realistically implement them?

Prior to School Entry

Schools alone cannot close the widening gap between student expectations and performance. Many factors are predictive of student readiness for school. Examining the factors that have implications for systems change prior to school entry are just as important to school success as examining policies within schools.

School preparation type is correlated to readiness, with School District Pre-K linked to greater school readiness in children. Future research into the Central Texas utilization of current Pre-K programs is warranted. Why do families choose different type school preparation programs, and how is parent choice linked to school readiness?

While participating in any type of Pre-K is correlated with greater school readiness, it is not the only factor that is predictive of school readiness. Ethnicity, gender, and economic status also correlate to school readiness, and are factors that are not influenced by school policy. Why are these differences present? Does it mean the Pre-K guidelines are biased, or are we seeing differences in acculturation and socialization? In the case of poverty, the question remains, can the effects of poverty be overcome in education?

Many Central Texas communities are developing plans to promote school readiness through strategic investment in programs that support children and families. Identifying areas of strength and need by targeting specific neighborhoods is an approach that is gaining national attention. “What are the community supports for developing school readiness?” and “where are they needed?”, are questions school readiness stakeholders are in the process of answering. In Travis County, the community has adopted a School Readiness Action Plan to support children and families.^v It hoped that the data from this study could help inform the progress of this plan.

Further Research

The 2011-12 Kindergarten Readiness Study is the second year of a three-year study. Because the Texas Legislature made significant changes to school funding in the 2011 legislative session, several Central Texas school districts reduced Pre-K from full day to half day, reduced staff training and no longer provided instructional supports, different conditions existed in the Pre-K year for the entering kindergartners in 2012-13, the third year of the study. This leads to a natural quasi-experiment whereby the two years of kindergarten readiness in Central Texas from 2010-11 and 2011-12 prior to the legislative impacts can be compared to the kindergarten readiness in 2012-13 that followed the legislative changes’ impacts on Pre-K.

In addition, in 2012, Central Texas districts participated in an awareness campaign to increase student attendance. As a result, more data on research will be collected as part of the 2012 Kindergarten Readiness Study to explore relationships between daily attendance in Pre-K programs and Kindergarten readiness.

Methods

Participants

This study used representative sampling to select classrooms that collectively were likely to reflect the demographic composition of the 2010-11 Central Texas kindergarten class (the most recent class for which demographic information was publicly available). A total of 1140 kindergarten students from 10 school districts and 1 charter school participated in the study. The students were from 61 classrooms on 26 campuses. A total of 853 students with complete assessment and demographic records were included in the analysis. These students represent 3.5% of the Kindergarten students in the 35 school district Central Texas region.

E³ Alliance contacted school districts across the region and obtained voluntary participation for the study. Either district administrators or E³ Alliance staff recruited principals and teachers. E³ Alliance conducted trainings for kindergarten teachers on authentic formative assessment in the context of the Kindergarten Readiness Study. Training also included how to educate parents on Kindergarten readiness and child development. This training was 6 hours for new teachers and 1 hour for teachers who participated in the prior year's study, although several continuing teachers chose to attend the full 6 hour training. E³ Alliance reimbursed districts the cost of substitutes (up to \$80.00) for teachers who attend training during the regular school day, and teachers received a \$25 gift certificate for participation in the study.

Gathering the data

Teachers completed surveys on children in their classrooms. All data collected were aligned with the state educational essential knowledge and skills or standards for Pre-K and kindergarten, and all represented information gathered from typical educational practices. Teachers reported on each student for 18 competencies representing the four main domains (i.e., social emotional development, language and communications, emerging literacy, mathematics) in the typical classroom environment during daily classroom activities, using observational methods. Teachers rated the student on multiple competencies within each domain on a four-point Likert-type scale that indicated the amount of teacher support a child needed to display a particular competency.

Teachers recorded the scores on a paper score sheet. Teachers completed all scoring within the first 12 weeks of the fall semester, 2011. Kindergarten teachers submitted paper score sheets, and any required consent forms to an authorized E³ Alliance representative conducting the study. E³ Alliance staff then entered the data electronically, and in the case of two districts, then submitted records back to the districts to be matched for demographic information.

Assessment validation

Although the *Ready, Set, K!* Assessment was organized by the Pre-K guideline topic areas and competencies; a factor analysis of competency scores was conducted on the combined data from the

2009-10 and 2010-11 Kindergarten Readiness Studies to determine how the competencies were inter-related. A factor analysis helps to classify competencies that are scored similarly, and represent a central concept or area of knowledge. In the analysis two main factors emerged, social emotional readiness and academic readiness. The first factor, or grouping of skill, included all 4 competencies for the social-emotional development (SED) domain, suggesting that social and emotional readiness is a unique behavioral component of kindergarten readiness. Currently, there is no statewide assessment of social emotional readiness. The other factor included all of the competencies in the language and communication, emerging literacy and mathematics domains. This component represents academic readiness, the academic skills needed for Kindergarten.

In addition to evaluating what factors emerged from the *Ready, Set, K!* Assessment, the internal consistency reliability was calculated for the assessment overall, the two main factors, and the four domains. Cronbach’s $\alpha = .97$ for the combined data from 2009-10 and 2010-11, and for the 2010-11 data presented in this report, Cronbach’s $\alpha = .95$, showing that *Ready, Set, K!* has very good internal consistency. For the combined data, $\alpha = .93$ for the social emotional development readiness factor/domain, and $\alpha = .96$ for the academic readiness factor. The other three individual domains that comprise the academically ready factor have alphas ranging from .94 to .96. Even at the level of domain, the assessment has high internal consistency.

Analysis

To best represent the demographics of the Central Texas region, the kindergarten student sample was weighted by both low income status and ethnicity using data from the 2010-2011 school year (the most recent available). All data were weighted by ethnicity, and data on black, Hispanic and white students were based on a large enough sample to be additionally weighted on whether or not students had low income status.

Table 1.
Ethnicity and income status percentages for Readiness Study sample and Central Texas region

| Ethnicity | Sample | | | Region | | |
|-----------|----------------|------------|-------|----------------|------------|-------|
| | Not Low Income | Low Income | Total | Not Low Income | Low Income | Total |
| Asian | * | * | 1.2% | 4.0% | 0.8% | 4.8% |
| Black | 3.6% | 8.6% | 12.2% | 1.8% | 5.3% | 7.1% |
| Hispanic | 10.0% | 51.0% | 61.0% | 11.0% | 36.5% | 47.6% |
| Other | * | * | 1.3% | 2.1% | 1.0% | 3.1% |
| White | 17.2% | 7.2% | 24.4% | 30.6% | 6.8% | 37.5% |

E³ Alliance calculated kindergarten readiness for all participants with complete assessments based on teacher ratings on the 18 competencies representing 4 domains. Statistical analyses were conducted using factorial ANOVA, chi-square and logistic regression to compare the readiness of different

populations, including whether they participated in Pre-K, their gender, economic disadvantaged status, ethnicity, and English language learning status.

ⁱ We would like to thank: Austin Independent School District, Bastrop Independent School District, Del Valle Independent School District, Georgetown Independent School District, Hays Consolidated Independent School District, Lake Travis Independent School District, Manor Independent School District, Round Rock Independent School District, San Marcos Consolidated Independent School District, Taylor Independent School District, and NYOS Charter Schools for participating in this study.

ⁱⁱ Glaser, Robert, *American Psychologist*, Vol 18(8), Aug 1963, 519-521. doi: [10.1037/h0049294](https://doi.org/10.1037/h0049294)

ⁱⁱⁱ Included Pre-K provided by a charter school, but does not include Pre-K provided by a private child care program.

^{iv} Bruner, C., Floyd S. and Copeman A. (January 2005) Seven Things Policy Makers Need to Know about School readiness, available online: <http://www.finebynine.org/uploaded/file/7%20Things.pdf>. Accessed: January 24, 2011.

^{vii} The conclusions of this research do not necessarily reflect the opinions or official position of the Texas Education Agency, the Texas Higher Education Coordinating Board, or the State of Texas.

^v The School Readiness Action Plan for Austin / Travis County 2012-2012, United Way for Greater Austin. Accessed: July 29, 2012. Available online: http://www.caction.org/CAN-Research/Reports/2012/srap_reduce.pdf