

Strengthening the Workforce Pipeline Through Early Literacy and Numeracy

Executive Summary

Texas has long recognized that school readiness is foundational to student success. Over the past decade, the state has invested in high-quality prekindergarten, educator training, and evidence-based instructional practices designed to improve student outcomes from the earliest years. The 89th Texas Legislature built upon these efforts by making significant investments in early literacy and numeracy, reinforcing the understanding that workforce readiness begins long before students enter high school or college.

As Texas experiences continued economic growth and increasing demand for skilled workers in sectors such as healthcare, advanced manufacturing, technology, and energy, strengthening early learning remains one of the state's most promising long-term workforce development strategies (Heckman et al., 2013). By ensuring children develop strong literacy and numeracy skills early, Texas can improve educational attainment, expand economic opportunity, and strengthen the future workforce.

Early Learning Is the Foundation of Workforce Readiness

Workforce development is often associated with career and technical education, postsecondary credentials, and job training programs. Yet the skills most valued by employers, including communication, problem-solving, critical thinking, collaboration, and adaptability, begin developing in early childhood.

For decades, research has shown that children who enter school prepared to learn are more likely to achieve academic success throughout their educational journey (Duncan et al., 2007; Mariano et al., 2019). Early literacy and numeracy skills serve as building blocks for future achievement, influencing reading proficiency, mathematics performance, high school graduation, postsecondary enrollment, and workforce participation (Belfield et al., 2006; Davis-Kean et al., 2022; Duncan et al., 2020; Magnuson et al., 2016; Pan et al., 2023). Students who fall behind early often face increasingly difficult challenges catching up later (Kuhfeld et al., 2026).



For Texas, investing in early learning is not simply an education priority. It is a strategic investment in the state's future talent pipeline (Belfield et al., 2006; McCoy et al., 2017).

Texas Has Built a Strong Early Childhood Foundation

Texas has made significant progress in supporting young learners through investments in public prekindergarten, educator preparation, and evidence-based reading instruction, with the Early Education Allotment (Perez & Latham Sikes, 2026) as a notable example. State leaders have increasingly focused on improving kindergarten readiness and ensuring students develop foundational skills before reaching third grade, an important benchmark for future academic success (Austin et al., 2023)

These efforts are grounded in research showing that interventions in the early years produce stronger outcomes which can yield greater returns later in a student's educational career (Heckman et al., 2013; Stanovich, 1986). However, achievement gaps remain, particularly among students from low-income families, English learners, and historically underserved communities (Wu & Shen, 2024). Continued progress requires sustained attention to underserved populations at the earliest stages of learning.

How the 89th Legislature Advanced Early Literacy and Numeracy

Recognizing the importance of foundational learning, the 89th Texas Legislature strengthened the state's commitment to early childhood education through policies focused on literacy, numeracy, and kindergarten readiness.

Key actions included:



Universal Early Screening

Texas expanded requirements for literacy and mathematics screeners for students in kindergarten through third grade. These assessments enable educators to identify learning gaps early and provide support before students fall significantly behind.



Evidence-Based Intervention

The Legislature established additional resources to ensure students identified as at risk receive targeted interventions. Early intervention is particularly effective because foundational skill gaps widen over time when left unaddressed (Duncan & Murnane, 2011).



Stronger Teacher Training

Texas expanded investments in Reading Academies and Mathematics Achievement Academies (Texas Education Agency, 2025), strengthening educator capacity to deliver evidence-based instruction in foundational reading and mathematics. High-quality instruction remains one of the strongest predictors of student success (Burroughs et al., 2019).



Increased Focus on Kindergarten Readiness

Legislative efforts further aligned early childhood and elementary education systems around the goal of ensuring students enter school ready to succeed academically.

Together, these policies represent a shift toward prevention rather than remediation, helping more students build strong academic foundations from the start.

Why These Investments Matter for Texas' Economy

Texas employers increasingly depend on a workforce equipped to thrive in a rapidly changing economy. Strong literacy and numeracy skills serve as critical catalysts for long-term educational attainment and career success.

Recent data show that only about half of Texas third graders are meeting grade-level expectations in reading and math (Texas Education Agency, 2026), yet Texas students who meet kindergarten readiness standards have approximately three times greater odds of passing their third-grade STAAR reading and math assessments compared to students who are not kindergarten ready (E3 Alliance, 2023). These findings underscore the continued need for focused investments in foundational learning. State leaders have correctly identified early literacy and numeracy

as among the highest-leverage opportunities to lay the foundation for stronger future workforce outcomes.

When students develop strong foundational skills, benefits can carry forward into later stages of life, extending far beyond the kindergarten classroom. Texas can expect:

- Higher rates of high school graduation and postsecondary attainment
- Increased workforce participation.
- Greater lifetime earnings
- Reduced need for costly remediation and intervention.
- Stronger regional economic competitiveness
- Expanded economic mobility for Texas families

Looking Ahead

Texans have demonstrated a clear commitment to strengthening the state's education-to-workforce pipeline by investing in early literacy, numeracy, and school readiness. These efforts build upon years of progress and position Texas to continue improving outcomes for students and employers alike.

As policymakers look toward the future, continued investments in high-quality early learning, educator workforce supports, and evidence-based interventions will be critical. Texas' long-term economic success depends on ensuring that every child develops the foundational skills needed to succeed in school, earn a credential, and contribute to a thriving workforce.

The lesson is simple: workforce development does not begin after high school. It begins with early childhood. By continuing to strengthen early learning opportunities, Texas is investing not only in today's children, but also in tomorrow's workforce and economy.



References

- Austin, W., Figlio, D., Goldhaber, D., Hanushek, E., Kilbride, T., Koedel, C., Lee, J. S., Luo, J., Ozek, U., Parsons, E., Rivkin, S., Sass, T., Strunk, K., & National Center for Analysis of Longitudinal Data in Education Research (CALDER) at American Institutes for Research. (2023). *Academic Mobility in U.S. Public Schools: Evidence from Nearly 3 Million Students*. Working Paper No. 227-0323-3 (National Center for Analysis of Longitudinal Data in Education Research (CALDER)).
- Belfield, C. R., Nores, M., Barnett, S., & Schweinhart, L. (2006). The High/Scope Perry Preschool Program: Cost-Benefit Analysis Using Data from the Age-40 Followup. *Journal of Human Resources*, 41(1), 162–190.
- Burroughs, N., Gardner, J., Lee, Y., Guo, S., Touitou, I., Jansen, K., & Schmidt, W. (2019). A Review of the Literature on Teacher Effectiveness and Student Outcomes. In N. Burroughs, J. Gardner, Y. Lee, S. Guo, I. Touitou, K. Jansen, & W. Schmidt (Eds.), *Teaching for Excellence and Equity: Analyzing Teacher Characteristics, Behaviors and Student Outcomes with TIMSS* (pp. 7–17). Springer International Publishing. https://doi.org/10.1007/978-3-030-16151-4_2
- Davis-Kean, P. E., Domina, T., Kuhfeld, M., Ellis, A., & Gershoff, E. T. (2022). It matters how you start: Early numeracy mastery predicts high school math course-taking and college attendance. *Infant and Child Development*, 31(2), e2281. <https://doi.org/10.1002/icd.2281>
- Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., Pagani, L. S., Feinstein, L., Engel, M., Brooks-Gunn, J., Sexton, H., Duckworth, K., & Japel, C. (2007). School readiness and later achievement. *Developmental Psychology*, 43(6), 1428–1446. <https://doi.org/10.1037/0012-1649.43.6.1428>
- Duncan, G. J., & Murnane, R. J. (Eds.). (2011). *Whither Opportunity?* Russell Sage Foundation. JSTOR. <http://www.jstor.org/stable/10.7758/9781610447515>
- Duncan, R. J., Duncan, G. J., Stanley, L., Aguilar, E., & Halfon, N. (2020). The kindergarten Early Development Instrument predicts third grade academic proficiency. *Early Childhood Research Quarterly*, 53, 287–300. <https://doi.org/10.1016/j.jecresq.2020.05.009>
- E3 Alliance. (2023). *Logistic regression analysis of 2023 Early Childhood Data System (ECDS) kindergarten readiness and Grade 3 State of Texas Assessments of Academic Readiness (STAAR) data at the University of Texas at Austin Education Research Center, controlling for gender, race/ethnicity, and household income status* [Unpublished analysis].
- Heckman, J., Pinto, R., & Savelyev, P. (2013). Understanding the Mechanisms through Which an Influential Early Childhood Program Boosted Adult Outcomes. *American Economic Review*, 103(6), 2052–2086. <https://doi.org/10.1257/aer.103.6.2052>
- Kuhfeld, M., Lewis, K., & Morton, E. (2026). *Behind at the starting line: What kindergarten test scores tell us about reaching proficiency in third grade*. Northwest Evaluation Association.
- Magnuson, K., Duncan, G., Lee, K. T. H., & Metzger, M. (2016). Early School Adjustment and Educational Attainment. *American Educational Research Journal*, 53(4), 1198–1228. <https://doi.org/10.3102/0002831216634658>
- Mariano, M., Santos-Junior, A., Lima, J. L., Perisinotto, J., Brandão, C., Surkan, P. J., Martins, S. S., & Caetano, S. C. (2019). Ready for School? Systematic Review of School Readiness and Later Achievement. *Global Journal of Human-Social Science*, 19(G10), 57–71.
- McCoy, D. C., Yoshikawa, H., Ziol-Guest, K. M., Duncan, G. J., Schindler, H. S., Magnuson, K., Yang, R., Koepp, A., & Shonkoff, J. P. (2017). Impacts of Early Childhood Education on Medium- and Long-Term Educational Outcomes. *Educational Researcher*, 46(8), 474–487.
- Pan, X. S., Li, C., & Watts, T. W. (2023). Associations between preschool cognitive and behavioral skills and college enrollment: Evidence from the Chicago School Readiness Project. *Developmental Psychology*, 59(3), 474–486. <https://doi.org/10.1037/dev0001431>
- Perez, A., & Latham Sikes, C. (2026). *Effective Investment in Early Education. How Texas School Districts Use the Early Education Allotment and Its Impact on Student Learning*. Intercultural Development Research Association.
- Stanovich, K. E. (1986). Matthew Effects in Reading: Some Consequences of Individual Differences in the Acquisition of Literacy. *Reading Research Quarterly*, 21(4), 360–407.
- Texas Education Agency. (2025). *House Bill 2 (HB 2) implementation of stipend requirements for Reading Academies and Mathematics Achievement Academies*. Texas Education Agency.
- Texas Education Agency. (2026). *2026 STAAR Results*. Texas Education Agency.
- Wu, H., & Shen, J. (2024). *A Bibliometric Review of Research on Inequality of Educational Achievement, 1934 to 2023*. EdWorkingPaper No. 24-1094. Annenberg Institute for School Reform at Brown University. <https://eric.ed.gov/?id=ED664299>

5930 Middle Fiskville Road
Suite 414
Austin, Texas 78752
512-223-7241
info@e3alliance.org

E3 Alliance[®]
Education Equals Economics