

## The Effects of Oklahoma's Universal Pre-Kindergarten Program on Hispanic Children

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Hispanic children in high-quality pre-K programs are more likely to be prepared for kindergarten than those not enrolled.

Hispanics, now the largest minority group in the U.S., face substantial education deficits. Among many possible explanations for this education deficit, Hispanics are less likely to enroll in preschool than members of other racial and ethnic groups. Studies show that children benefit from preschool in the short run and that some of these benefits persist over time. Under-enrollment in preschool deprives Hispanic children of cognitive benefits that other children will enjoy. In the short run, Hispanics are less likely to begin school with valuable pre-reading, pre-writing, and pre-math skills. In the long run, Hispanics are less likely to complete high school or enroll in college.

An additional reason for the Hispanic education deficit is that many young Hispanic children are English language learners. In homes with immigrant parents, Spanish is often the primary language spoken. For these students, school is doubly challenging. Because most classroom instruction is exclusively in English, these students must somehow learn valuable cognitive skills before they have mastered the language of instruction.

The federal government has attempted to address these problems primarily through an information release strategy via the No Child Left Behind Act. State governments have pursued alternative strategies, and preschool education programs have become increasingly popular. The Oklahoma universal pre-K program stands out both because the program reaches a higher percentage of four-year-olds—70 percent—than any other state in the union and because of the program's high quality—every state-funded pre-K classroom is led by a college-educated, early childhood certified teacher. The program is universal but voluntary; i.e., it is

available to all four-year-olds irrespective of income, but they are not obligated to participate. Furthermore, every state-funded pre-K classroom is led by a college-educated, early childhood certified teacher who is paid a public school wage.

The data for this assessment originate from student tests and parent surveys administered in August 2006, just prior to the beginning of the school year, in Tulsa, Oklahoma—the largest school district in the state. Of the Hispanic students tested, 274 were in kindergarten, and 333 were in pre-K (see table on the following page). The chosen testing instrument was the Woodcock-Johnson Achievement Test, a nationally-normed test widely used in educational evaluations.

Three subtests especially appropriate to young children were selected: the Letter-Word Identification Test (which measures pre-reading skills), the Spelling Test (which measures pre-writing skills), and the Applied Problems Test (which measures pre-math skills). A comparable—but not identical—test in Spanish, the Woodcock-Muñoz Bateria, also was utilized. In effect, this test measures the same set of skills as the Woodcock-Johnson but with a different set of questions. Hispanic students were tested in English only if they could answer questions in English only; they were tested in Spanish only if they could answer questions in Spanish only. A majority of Hispanic students were tested in both English and Spanish.

**CHARACTERISTICS OF TESTED HISPANIC STUDENTS AT A GLANCE**

|                                    | Pre-K Alumni | Pre-K Entrants |
|------------------------------------|--------------|----------------|
| Gender                             | (N = 274)    | (N = 333)      |
| Female                             | 47.1%        | 47.2%          |
| Primary Language Spoken at Home    | (N = 234)    | (N = 279)      |
| English                            | 27.4%        | 26.9%          |
| Spanish                            | 68.3%        | 70.3%          |
| Parent’s Place of Birth            | (N = 216)    | (N = 261)      |
| USA                                | 23.6%        | 24.0%          |
| Mexico                             | 71.8%        | 69.7%          |
| School Lunch Eligibility           | (N = 274)    | (N = 333)      |
| Free                               | 80.7%        | 76.3%          |
| Reduced                            | 10.2%        | 11.7%          |
| Paid                               | 9.1%         | 12.0%          |
| Mother’s Education                 | (N = 194)    | (N = 245)      |
| No High School Diploma             | 49.0%        | 44.1%          |
| High School or GED                 | 33.0%        | 38.4%          |
| Some College or Associate’s Degree | 15.0%        | 11.4%          |
| College Degree or Graduate Degree  | 3.1%         | 6.1%           |
| Test                               | (N=274)      | (N=333)        |
| Woodcock-Johnson Test only         | 39.1%        | 36.3%          |
| Woodcock-Muñoz Test only           | 2.9%         | 6.3%           |
| Both tests                         | 58.0%        | 57.4%          |

**METHODS**

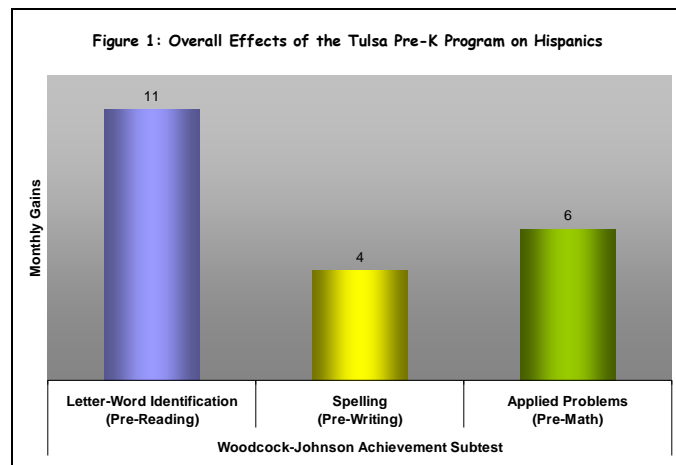
We compared Hispanic kindergarten students who had just completed Tulsa pre-K (our treatment group) to pre-K students who were about to begin Tulsa pre-K (our control group). We included statistical controls for gender, race/ethnicity, socio-economic status (as measured by eligibility for a free lunch), mother’s education, date of birth, whether the student lives with his/her biological father, and whether the student has internet access at home. Our research strategy helps to correct for selection bias because both our treatment group and our control group selected Tulsa pre-K. Thus, they are less likely to differ in their unobservable characteristics. We control for selection bias by statistically comparing “old” Tulsa pre-K children to “young” Tulsa kindergarten children who were in Tulsa pre-K the previous academic year. The observable characteristics of the treatment and control groups are quite similar (refer to the table above), which gives us

greater confidence that their unobservable characteristics also are similar.

**KEY FINDINGS**

*Overall Effects of Tulsa Pre-K: Pre-Reading, Pre-Writing, and Pre-Math*

For Hispanic students as a whole, the Tulsa pre-K program resulted in significant monthly gains for all three cognitive indicators. Monthly gains depict how many months ahead in cognitive development an average 5-year-old exposed to Tulsa pre-K is compared to an average child of the same age who was not exposed to Tulsa pre-K. In other words, these gains are above and beyond those that otherwise occur through aging and maturation. As shown in Figure 1, Hispanic students realized gains of 11 months in pre-reading, 4 months in pre-writing, and 6 months in pre-math skills.

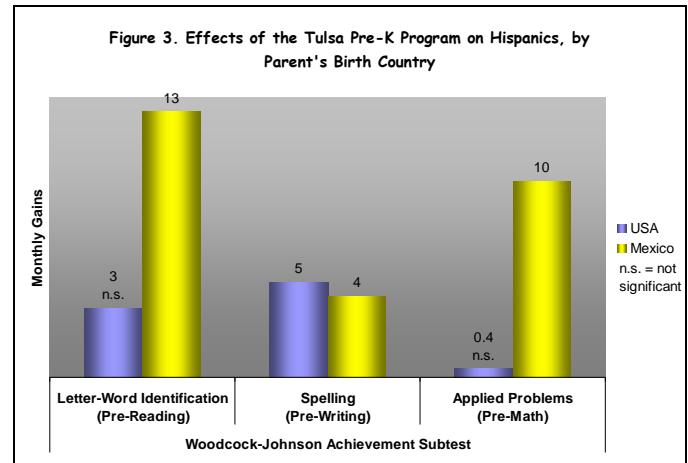
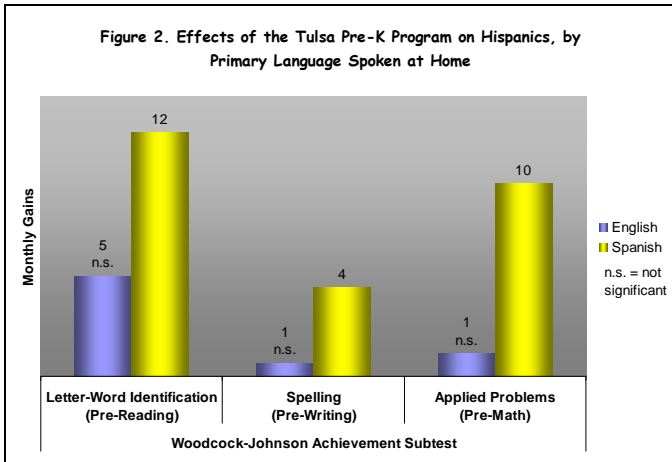


*Effects of Tulsa Pre-K on Hispanics by Primary Language Spoken at Home*

While all Hispanics benefit from high-quality pre-K programs, those children who speak Spanish at home benefit more.

While Hispanics as a whole benefit from the Tulsa pre-K program, those primarily speaking Spanish at home benefited more. Hispanic students speaking English at home realized positive but statistically insignificant cognitive gains, while those speaking Spanish at home realized gains of 12 months in pre-reading, 4 months in pre-writing, and 10

months in pre-math (Figure 2). Note that students whose parents speak Spanish at home outnumber those whose parents speak English at home by nearly 3 to 1, making it more difficult to detect statistically significant results in the latter group. The difference in effects for Spanish-speaking and English-speaking homes is not significant for pre-reading, marginally significant for pre-spelling, and significant for pre-math.



*Comparison of Effects of Tulsa Pre-K as Measured by English, Spanish Tests*

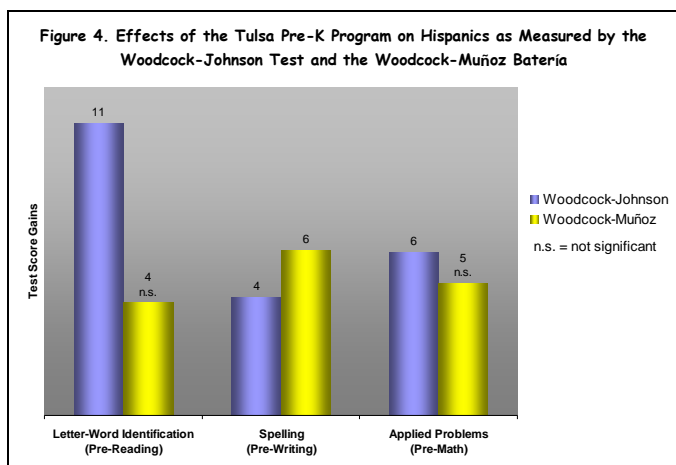
Hispanic students who participate in high-quality pre-K programs improve English language and cognitive development skills.

*Effects of Tulsa Pre-K on Hispanics by Parent’s Birth Country*

Similar to the results shown in Figure 2, those Hispanic students whose parent was born in Mexico benefited more from the Tulsa pre-K program (Figure 3). While Hispanic students whose parent was born in the U.S. realized significant pre-writing gains of 5 months, those whose parent was born in Mexico realized significant gains in all three subtests: 13 months in pre-reading, 4 months in pre-writing, and 10 months in pre-math. The difference in effects for children whose parent was born in Mexico and children whose parent was born in the U.S. is significant for pre-math but not for pre-reading or pre-writing.

Hispanic children whose parent was born in Mexico benefit from high-quality pre-K programs more than Hispanic children with parents born in the U.S.

Hispanic students who took both the Woodcock-Johnson Test (in English) and the Woodcock-Muñoz Batería (in Spanish) realized gains as measured by both testing instruments (Figure 4). This indicates that Hispanic students’ gains are attributable to more than simply the acquisition of English language skills. However, the gains are higher for the Woodcock-Johnson Test than for the Woodcock- Muñoz Batería. The most obvious difference in effects is for the Letter-Word Identification Test, where the Woodcock-Johnson test score gains are dramatic (11 months), while the Woodcock-Muñoz test score gains are statistically insignificant. In short, Hispanic students are improving their cognitive skills (as evidenced by Woodcock-Muñoz test score gains), but they also are improving their language skills (as evidenced by larger gains for the Woodcock-Johnson Test).



## POLICY IMPLICATIONS

Access to and participation in high-quality pre-K programs would greatly benefit Hispanic children and help prepare them for success in their continued education.

In recent years, the number of Hispanic students in U.S. public schools has increased sharply. Nearly half of all Hispanic children in our public schools are English language learners. These students face substantial obstacles as they seek to overcome education deficits that tend to widen over time.

Many solutions to this problem have been proposed, including greater access to preschool, additional tutoring opportunities in school, a reallocation of resources across school districts, bilingual education, and others.

Only a very small fraction of Tulsa Public Schools teachers are Hispanic. Clearly, Tulsa Public Schools teachers have managed to connect with Hispanic children despite the absence of an ethnic bond. A small minority of Tulsa Public Schools pre-K teachers do speak Spanish, and these teachers, not surprisingly, are more likely to use some Spanish in classroom interactions. However, even these teachers speak Spanish infrequently. Thus, Tulsa Public Schools pre-K teachers have managed to achieve impressive results for Hispanic students without bilingual education. Of course, it is possible that gains would be even greater than those reported here

if teachers spoke Spanish more often, especially in their interactions with English language learners.

What the Tulsa research does demonstrate, clearly and unequivocally, is the value of a high-quality, school-based pre-K program for Hispanic children, especially English language learners, who arguably need help the most. A key reason for Tulsa's success is stronger levels of "instructional support" than other school-based pre-K programs in the U.S. A related explanation is greater emphasis on academic skills.

An equally important accomplishment of the Tulsa Public Schools pre-K program is that it has managed to attract a remarkable number of Hispanic participants. Nationwide, Hispanics are considerably less likely to enroll in preschool than members of other racial and ethnic groups. Tulsa is a notable exception. In 2005-06, approximately 61 percent of white four-year-olds and approximately 61 percent of Hispanic four-year-olds enrolled in the Tulsa Public Schools pre-K program or the Tulsa County Head Start program. The Tulsa Public Schools pre-K program has managed to overcome the diffidence of Hispanic parents with respect to preschool. Thus, Hispanic students benefit two ways in Tulsa: from a high-quality pre-K program and from relatively high participation rates.

What can public officials learn from Tulsa's experience? Access to and participation in high-quality pre-K programs would greatly benefit Hispanic children and help prepare them for success in their continued education.

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The full text of this report is available through the Center for Research on Children in the U.S. (CROCUS) at Georgetown University. The web site is: <http://www.crocus.georgetown.edu>.