

Supporting Young English Learners in the United States

Lisa Barrow and Lisa Markman-Pithers

Summary

Simply put, children with poor English skills are less likely to succeed in school and beyond. What's the best way to teach English to young children who aren't native English speakers? In this article, Lisa Barrow and Lisa Markman-Pithers examine the state of English learner education in the United States and review the evidence behind different teaching methods.

Models for teaching English learner children are often characterized as either English immersion (instruction only in English) or bilingual education (instruction occurs both in English and in the students' native language), although each type includes several broad categories. Which form of instruction is most effective is a challenging question to answer, even with the most rigorous research strategies. This uncertainty stems in part from the fact that, in a debate with political overtones, researchers and policymakers don't share a consensus on the ultimate goal of education for English learners. Is it to help English learner students become truly bilingual or to help them become proficient in the English language as quickly as possible?

On the whole, Barrow and Markman-Pithers write, it's still hard to reach firm conclusions regarding the overall effectiveness of different forms of instruction for English learners. Although some evidence tilts toward bilingual education, recent experiments suggest that English learners achieve about the same English proficiency whether they're placed in bilingual or English immersion programs. But beyond learning English, bilingual programs may confer other advantages—for example, students in bilingual classes do better in their native languages. And because low-quality classroom instruction is associated with poorer outcomes no matter which method of instruction is used, the authors say that in many contexts, improving classroom quality may be the best way to help young English learners succeed.

www.futureofchildren.org

Lisa Barrow is a senior economist and research advisor in the economic research department at the Federal Reserve Bank of Chicago. Lisa Markman-Pithers is the associate director of the Education Research Section at Princeton University, the outreach director for *Future of Children*, and a lecturer at Princeton's Woodrow Wilson School of Public and International Affairs.

The authors thank Cecilia Rouse, Ellen Frede, Jeanne Brooks-Gunn, and Lauren Sartain for helpful comments and discussions and Ross Cole for excellent research assistance.

Being bilingual brings many advantages. At the most basic level, speaking two or more languages creates more economic and social opportunities as it expands the number of people you can communicate with in an increasingly global economy. And some research indicates that bilingual people have higher levels of executive functioning, particularly when it comes to inhibitory control and cognitive flexibility.¹ These skills have been found to correlate with academic success. (See the article in this issue by Cybele Raver and Clancy Blair for a full description of executive function and its relation to school success.) Some evidence even suggests that bilingualism may protect against the cognitive decline associated with aging.² Although there is near consensus that bilingualism is beneficial, bilingual education itself is a complex and controversial topic. One aspect of US bilingual education is teaching languages other than English to students whose first language is English. In this article, we focus on another aspect—teaching English to children who aren't native English speakers.

For decades, researchers, educators, and policymakers have debated how best to prepare young children whose native language isn't English to succeed in classrooms where English is the language of instruction, with very little conclusive evidence. The crux of the debate surrounds the amount, frequency, and duration with which students should use their native language in school, which is in large part associated with the underlying educational goal: Is the intent to make students bilingual (fluent in both their native language and English), or is it to make sure that English learners master the language as rapidly as

possible? The debate is politically charged, and tolerance of or support for bilingual education has varied over time.³

The State of US English Learner Education

Title VI of the Civil Rights Act of 1964 and the Equal Educational Opportunities Act of 1974 require public schools to help English learner students “participate meaningfully and equally in educational programs.”⁴ School districts must identify potential English learner students, assess English language proficiency on an annual basis, and continue to monitor former English learner students for at least two years after English proficiency is established. With the passage of the No Child Left Behind Act of 2001, Title III established federal formula grants for states to support the needs of English learner students aged 3–21, with the goal of helping them attain English language proficiency. Much of the policy, including these grants, was retained in the reauthorization under the Every Student Succeeds Act (ESSA) of 2015. No Child Left Behind specifically refers to children who are *limited English proficient* (LEP), while the ESSA replaced the term with *English learners*. We use English learners throughout this article.

In defining English learners, ESSA and the Improving Head Start for School Readiness Act of 2007 (HSA) refer to “difficulties in speaking, reading, writing, or understanding the English language, that may be sufficient to deny the individual a) the ability to meet the challenging State academic standards; b) the ability to successfully achieve in classrooms where the language of instruction is English; or c) the opportunity to participate fully in society.”⁵ ESSA also holds states accountable by requiring them to adopt

English language proficiency standards that “(i) are derived from the four recognized domains of speaking, listening, reading, and writing; (ii) address the different proficiency levels of English learners; and (iii) are aligned with the challenging State academic standards.” The act also requires local education agencies that receive Title III funds to “demonstrate success in increasing—(A) English language proficiency; and (B) student academic achievement.” Similarly, HSA performance standards include language about ensuring that English learner children are making progress toward English language acquisition.⁶ Based on these policies, education of English learners in the United States by and large means programs designed to help these students achieve proficiency in English. National policy isn’t focused on teaching students to be proficient in more than one language. That said, ESSA requires only that programs for developing English proficiency be “evidence-based,” not that the program be designed to make students fluent only in English or bilingual in English and their native language. The HSA is similarly noncommittal about which programs Head Start Centers are to implement. But the *Head Start Early Learning Outcomes Framework* (intended to guide Head Start program design) describes English learners in terms of how they may differ on various indicators and asserts that “continued development of a child’s home language in the family and early childhood program is an asset and will support the child’s progress in all areas of learning.”⁷ The Head Start framework also stresses that English learners must be allowed to demonstrate knowledge, skills, and abilities in any language (English, their home language, or both). Finally, state-funded preschool regulations vary from state to state: 14 of 41 states with state-funded preschool

programs have no policies regulating services for English learners; 24 states permit programs to offer bilingual preschool classes; and 14 states permit monolingual, non-English preschool classes.⁸ As a result, we see a wide variety of programs across the United States at both the preschool and primary grade levels.

In table 1, we present data on the proportion of children who speak a language other than English in the home, as well as the proportion identified as English learners or LEP. In 2014, more than one-fifth of US children aged 5–9 were potential English learners, meaning that they spoke a language other than English in their home. For children under 5 years of age, we have less comprehensive data; we report figures from Head Start programs, which primarily serve three- and four-year-olds, and from select states for which data on preschool-aged children are available. The proportion of Head Start students who report a home language other than English fell slightly between 2004 and 2014, from 29 to 28 percent, while the proportion of five- to nine-year-olds reporting a home language other than English rose from 19 percent in 2004 to 22 percent in 2014.⁹ The American Community Survey identifies people age five and up as LEP if they are reported to speak English less than very well. Only 6.2 percent of five- to nine-year-olds fell into that category. Of course, speaking English very well is only one component of proficiency. School districts typically identify English learner students through a home language survey, followed by a more formal assessment of English language proficiency. Not all children whose primary language isn’t English are identified as English learners. Still, in the 2013–14 school year, 16.5 percent of public school students enrolled in

Table 1. Percent of Children Speaking a Language Other than English in the Home and Percent of Children Identified as English Learners, Select Populations in 2004 and 2014

Population	Age range	Percent speaking a language other than English in the home		Percent English learner/LEP		
		2004	2014	Grade/age range	2004	2014
Head Start	3–4	28.80	28.30			
American Community Survey	5–9	19.34	22.43	5–9	6.83	6.20
US public schools				K–3		16.5
California	5–9	43.77	43.45	K–3	35.82	36.24
Texas	5–9	31.56	36.61	Pre-K–3		28.50
Florida	5–9	23.79	28.32	Pre-K–3		15.97
Illinois	5–9	20.96	24.69	Pre-K–3	10.96	13.31
New York	5–9	25.56	30.38	Pre-K–3		11.11

Sources: Office of Head Start, “Head Start Services Snapshot: National (2014–2015),” <http://eclkc.ohs.acf.hhs.gov/hslc/data/psr/2015/services-snapshot-hs-2014-2015.pdf>; American Community Survey; US Department of Education, “Table 204.27: English Language Learner (ELL) Students Enrolled in Public Elementary and Secondary Schools, by Grade and Home Language: 2013–14,” *Digest of Education Statistics*, http://nces.ed.gov/programs/digest/d15/tables/dt15_204.27.asp; CalEdFacts, <http://www.cde.ca.gov/re/pn/fb/>; Texas Education Agency, “ELL Student Reports by Category and Grade,” <https://rptsrv1.tea.texas.gov/adhocrpt/adlepccg.html>; Florida Department of Education, “Florida EDStats,” <https://edstats.fldoe.org/SASPortal/main.do>; Illinois State Board of Education, Data Analysis and Progress Reporting Division, *Illinois Bilingual Education Programs: 2004 Evaluation Report* (Springfield, IL: Illinois State Board of Education, 2005); Illinois State Board of Education, Data Analysis and Accountability Division, *Bilingual Education Programs and English Learners in Illinois: SY 2013 (2012–2013 School Year) Statistical Report* (Springfield, IL: Illinois State Board of Education, 2015); New York State Education Department, “New York State Data,” <http://data.nysed.gov/>.

kindergarten through third grade fell into that category.¹⁰

English learner students and young children aren’t uniformly distributed across the United States. In fact, more than 50 percent of the US total reside in just five states. By far, California public schools serve the most English learner students of any state and have the largest share of students who are English learners. About one-third of all public-school English learner students in the nation are enrolled in California schools, and 24 percent of all California public school students are English learners (see table 2).¹¹ Texas, Florida, New York, and Illinois round out the rest of the top five for the number of English learners

served; New Mexico, Texas, Nevada, and Colorado round out the top five for the largest shares of public school students (grades K–12) who are English learners. In table 1, we also report American Community Survey data on the proportion of five- to nine-year-olds whose home language isn’t English for the five states with the largest number of English learners, as well as data from these states on the proportion of young public school students who are English learners, including preschool students for states other than California.¹² Notably, 36 percent of California public-school students in kindergarten through third grade are English learners, as are about 30 percent of Texas prekindergarten through third-grade students.

Table 2. Top Five States in Two Measures of English Learner Enrollment, 2013–14

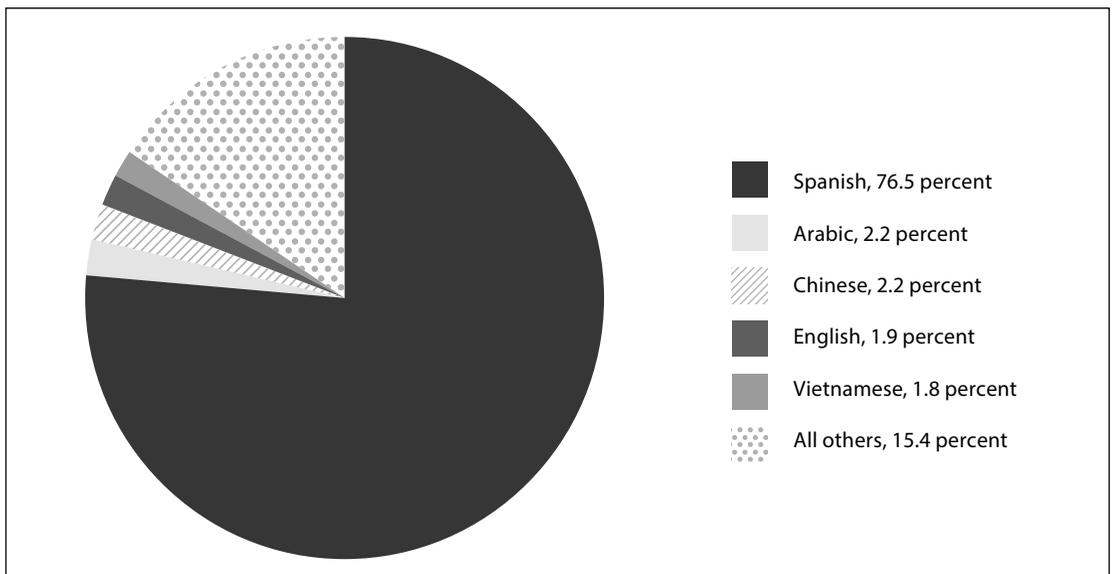
State	Percentage of total US public school English learner students	State	English learner public school students as a percentage of total state student population
California	30.59	California	23.89
Texas	16.42	New Mexico	16.90
Florida	5.78	Texas	15.71
New York	4.89	Nevada	15.49
Illinois	3.79	Colorado	13.49

Sources: National Clearinghouse for English Language Acquisition, “Title III State Profiles,” <http://www.ncela.us/t3sis/index.php>, and National Center for Education Statistics “Table 203.40: Enrollment in Public Elementary and Secondary Schools, by Level, Grade, and State or Jurisdiction: Fall 2013,” *Digest of Education Statistics*, http://nces.ed.gov/programs/digest/d15/tables/dt15_203.40.asp.

Among all English learners, Spanish is by far the language most commonly spoken at home.¹³ Figure 1 shows the proportion of all public elementary and secondary English learners who speak each of the top 30 languages reported. Among public elementary and secondary English learner students at all grade levels, 76.5 percent report that Spanish is their home language, followed by Arabic, Chinese (including both

Mandarin and Cantonese), English, and Vietnamese.¹⁴ (You may find it surprising that some English learners speak English in the home; this category includes children who live in multilingual households as well as adopted children who were raised in a non-English-speaking household before adoption.) The proportion whose home language is Spanish is somewhat higher among Head Start participants.¹⁵

Figure 1. Most Commonly Reported Home Languages of English Learner Students Enrolled in Public Elementary and Secondary Schools



English learners are also likely to come from poorer families, meaning that they have fewer resources at home. In a study using a nationally representative sample of children born in the United States in 2001, researchers reported that 41 percent of children growing up in bilingual households (those with a primary home language other than English and frequent exposure to two languages) come from families in the lowest fifth on an index of socioeconomic status, while only 10 percent are in the highest fifth.¹⁶ In contrast, only 14 percent of children growing up in households where English is the primary home language live in families in the lowest fifth, and 22 percent are in the highest fifth. Similarly, a report using 2013 data from the American Community Survey indicates that 28 percent of five- to 17-year-old children growing up in households where a language other than English is spoken are poor, compared to 19 percent of children growing up in an English-only household.¹⁷ The average English learner student faces both the disadvantage of coming from a poor family and the disadvantage of being an English learner in a primarily English-language education system. As a result, it's hard to distinguish which disadvantage drives worse educational outcomes for English learner students.

In the 2013–14 school year, states identified roughly 4,930,000 students (9.8 percent of total enrollment) as English learners and reported serving 92 percent of them in programs funded with Title III grants, based on data compiled from the Consolidated State Performance Report (CSPR).¹⁸ The same data show that English learner students are served by many types of Language Instruction Educational Programs (LIEPs), as defined by No Child Left Behind. Such programs may serve English learner students

only, but they may also include English-proficient students if they are designed to make all students proficient in English and another language. The CSPR asks states to report on the types of LIEP programs they use in two categories—English Only or English and Another Language. Most states (43, including the District of Columbia, based on our calculations from the 2013–14 CSPR data) report that at least one local education agency makes use of a program in the English and Another Language category. Eight states (Alabama, Arkansas, Hawaii, Missouri, New Hampshire, North Dakota, Vermont, and West Virginia) report having nothing but programs in the English Only category.

The CSPR also asks states to report the number of certified or licensed teachers in Title III-funded activities and to project how many more such teachers will be needed in five years. Overall, in the 2013–14 school year, there were just over 345,000 licensed or certified teachers in Title III-funded activities.¹⁹ This number was largely unchanged from 2011–12; however, some states, such as Illinois and Nebraska, more than doubled the number of such teachers over that two-year span, while the number declined elsewhere. In the following five years, states expected to need around 24 percent more such teachers, on average.

Why This Matters

The high school graduation rate for English learner students was 61 percent in 2012–13, compared with an overall US graduation rate of 81 percent.²⁰ The gap in high school completion rates doesn't apply directly to young English language learners because they may become English proficient before reaching high school;

however, early achievement gaps between English learners and their native-English-speaking peers can still translate into lower educational attainment. English proficiency and educational attainment are associated with higher wages. Using decennial Census data and age at arrival in the United States, researchers have estimated that a person who speaks English poorly earns roughly 33 percent less than one who speaks English well.²¹ However, not all of the relationship between English proficiency and wages is a direct effect of English skills on worker productivity. The researchers found that the majority of the earnings gap can be explained by lower levels of educational attainment. That is, people with greater English proficiency get more education, explaining a large share of the gap in earnings.

A person who speaks English poorly earns roughly 33 percent less than one who speaks English well.

Students who are English learners when they enter kindergarten score consistently lower on tests of mathematics (given in Spanish or English) and reading (given only in English) than do students who enter kindergarten proficient in English, although the sizes of the test score gaps are smaller than those between students with college-graduate versus high school-graduate parents, or the gap between white and black students (excluding Hispanic students). Data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K) let us compare outcomes for a representative sample of children who enrolled in kindergarten in 1998–99. These

data indicate that among students assessed in Spanish or English, those who were not proficient in English when they entered kindergarten scored lower in mathematics in the fall of their kindergarten year than did those who were proficient in English.²² This gap is roughly the size of the gap in mathematics between white and black students in the fall of their kindergarten year. By spring 2002 (when most children in the study were enrolled in third grade, where all students are assessed in English), the gap had narrowed to about 45 percent of the white-black gap. By spring 2007 (eighth grade), the gap in average scores was 28 percent of the gap between white and black students. Thus, while a test score gap remained between students who were English learners in kindergarten and others, students who weren't proficient in English when they started kindergarten didn't fall further behind their peers and, in fact, partially closed the gap by eighth grade.²³

Using the ECLS-K to look at reading assessment scores by English proficiency is somewhat more complicated, because students are assessed only in English, and thus the pool of students being compared changes over time.²⁴ Specifically, kindergarten students are assessed only if they score well enough on an exam of English proficiency, whereas all students are assessed from third grade on. Not surprisingly, kindergarten students who are not proficient in English (but proficient enough to take the exam) score lower on the reading assessment than do kindergarten students who are proficient in English. The size of the gap is roughly 70 percent of the gap between white and black students. The gap widens somewhat to roughly three-quarters of the white-black gap in third grade, when all students are assessed in reading, and narrows

to 47 percent of the gap between white and black students by eighth grade. Again, we see that English learner students continue to perform more poorly on reading assessments than do students who aren't English learners, although we see the gap narrowing between third and eighth grade.²⁵ However, test score gaps remain for both math and reading even in eighth grade, suggesting that these English learner students will be more likely to drop out of high school and ultimately complete less education. One caveat, of course, is that these data represent simple averages and thus don't tell us how much other student and family characteristics beyond English proficiency may contribute to students' below-average math and reading scores. In fact, a recent study using the Early Childhood Longitudinal Study Birth Cohort (ECLS-B) finds that 75 percent or more of the early (preschool and kindergarten) reading score gaps between English learner children and others can be explained by differences between the two groups in such characteristics as mother's education level, household income, and parents' literacy activities in the home.²⁶

How Do We Help Young English Learner Students?

How can we best help children acquire the level of English proficiency they need to achieve their potential in classrooms where English is the language of instruction and to participate fully in our predominantly English-language society? It's an open question. Models for teaching English learner children are often characterized as either English immersion (instruction only in English) or bilingual education (instruction occurs both in English and in the students' native language), but each type includes several broad categories. For

purposes of Title III, the reporting form for the CSPR lists five categories within each type. Under English Only, the five categories are sheltered English instruction, structured English immersion, specially designed academic instruction delivered in English, content-based English as a second language (ESL), and pull-out ESL; under English and Another Language, the form lists dual language, two-way immersion, transitional bilingual, developmental bilingual, and heritage language programs (see box 1 for descriptions adapted from those provided by the National Clearinghouse for English Language Acquisition). We note, however, that no programs are so clear-cut in practice. Different programs have been referred to as additive or subtractive models, depending on the role that the native language plays in instruction. Additive models add English instruction to native language instruction, whereas subtractive models focus on transitioning English learners to English immersion programs as rapidly as possible and thus subtracting native language instruction.²⁷ Another distinction among the English and Another Language programs is how long a student may participate. Such programs can be defined as either *early exit* or *late exit*. In early exit bilingual programs, students transition into an English-only classroom within two or three years. In late-exit bilingual education programs, students stay in the program much longer; transition into a mainstream English program usually doesn't occur until the end of fifth or sixth grade. Late-exit programs can be found in both transitional and developmental models. Within all of these programs, the percentage of time dedicated to the primary language and to English can vary.²⁸ Transition from bilingual to mainstream, English-only classrooms and reclassification as former English learner depend on a student's level

Box 1. Types of English Learner Programs Funded by Title III Grants

English Only Programs
<p>Sheltered English instruction: An instructional approach used to make academic instruction in English understandable to English learners to help them acquire proficiency in English while achieving in content areas. Sheltered English instruction differs from ESL in that English is not taught as a language with a focus on learning the language. Rather, content knowledge and skills are the goals. In the sheltered classroom, teachers use simplified language, physical activities, visual aids, and the environment to teach vocabulary for concept development in mathematics, science, social studies, and other subjects.</p> <p>Structured English immersion: In this program, language-minority students receive all their subject matter instruction in English. The teacher uses a simplified form of English. Students may use their native language in class; however, the teacher uses only English. The goal is to help language-minority students acquire proficiency in English while achieving in content areas.</p> <p>Specially designed academic instruction delivered in English: See structured English immersion.</p> <p>Content-based English as a second language: This approach to teaching English as a second language makes use of instructional materials, learning tasks, and classroom techniques from academic content areas as the vehicle for developing language, content, cognitive, and study skills. English is used as the medium of instruction.</p> <p>Pull-out ESL: A program in which English learner students are pulled out of regular, mainstream classrooms for special instruction in English as a second language.</p>
English and Another Language Programs
<p>Dual language: Also known as two-way immersion or two-way bilingual education, these programs are designed to serve both language-minority and language-majority students concurrently. Two language groups are put together and instruction is delivered through both languages. For example, native English-speakers may learn Spanish as a foreign language while continuing to develop their English literacy skills, and Spanish-speaking English learners may learn English while developing literacy in Spanish. The program seeks to help both groups to become biliterate, succeed academically, and develop cross-cultural understanding.</p> <p>Two-way immersion: See dual language.</p> <p>Transitional bilingual: An instructional program in which subjects are taught through two languages—English and the native language of the English language learners—and English is taught as a second language. English language skills, grade promotion, and graduation requirements are emphasized, and the native language is used as a tool to learn content. The primary purpose of these programs is to facilitate English learner students' transition to an all-English instructional environment while receiving academic subject instruction in the native language to the extent necessary. As proficiency in English increases, instruction in the native language decreases. Transitional bilingual education programs vary in the amount of native language instruction provided and the duration of the program. The programs may be early- or late-exit, depending on the amount of time a child may spend in the program.</p> <p>Developmental bilingual: A program that teaches content through two languages and develops both languages with the goal of bilingualism and biliteracy. May also be referred to as a late-exit program.</p> <p>Heritage language: The language a person regards as their native, home, and/or ancestral language. Includes indigenous languages (for example, Navajo) and immigrant languages (for example, Spanish in the United States).</p>

Source: Adapted from http://www.ncele.us/files/rcd/BE021775/Glossary_of_Terms.pdf.

of English proficiency and the goal of the program. How proficiency is assessed in these programs also varies in terms of what skills are necessary to be considered ready to transition and what tools are best used to assess these skills.²⁹

Arguments for Bilingual Education

Young children (prekindergarten–third grade) enter school still developing proficiency and literacy skills in their home language, whether it's English or another

language. School is where students go to strengthen these skills. Young students whose native language isn't English face an especially great challenge, as they must continue to develop a strong foundation in their native language while trying to learn English. Frequently, these students are called *dual language learners*, because they are working on learning two languages at the same time. One argument for bilingual education is that these young students still need help reaching proficiency in their first language as well as in English. Supporters of this approach also argue that not teaching children in both languages is unjust because it may deny them the benefit of being bilingual later in life.³⁰

Young students whose native language isn't English face an especially great challenge, as they must continue to develop a strong foundation in their native language while trying to learn English.

In addition, advocates of bilingual education propose that a relationship exists between learning a first and second language, and that a strong foundation in a child's first language will help in second-language acquisition.³¹ Researchers don't completely understand what mechanisms transfer from one language to another, but some suspect that skills such as phonological awareness, decoding, and knowledge of letters and sounds can probably be transferred and that they can help students acquire English.³² These researchers caution that although certain skills may transfer, such a transfer

isn't automatic; for transfer to occur, they argue, students need instruction in areas such as identifying common cognates.³³ In addition, the transfer theory relies heavily on children having a strong foundation in their native language. Therefore, those who support the theory argue that students (especially young children) should remain in intensive bilingual programs for a long time so that they can reach a high level of linguistic competence in their native language. Researchers who support this theory of bilingual education contend that although such students may gain English proficiency a bit more slowly in the short run, strengthening their native language skills will bring better English proficiency in the long run.³⁴

Another argument for bilingual education is that students need time to gain proficiency in English. Factors involved in English proficiency include oral- and academic-language development (that is, the ability to communicate effectively in academic settings, which typically rely on more formal language structure and vocabulary). Oral language proficiency in English is associated with greater academic gains in English reading achievement, including reading comprehension and writing, and academic English proficiency is related to long-term success in school.³⁵ According to researchers, English learners typically take three to five years to achieve advanced proficiency in oral English and four to seven years to develop academic English proficiency.³⁶ The speed of language acquisition depends on both the child and environmental factors.³⁷ These researchers caution that although students' language development initially progresses somewhat rapidly, progression to higher levels of proficiency is much slower and therefore

students should have the support and time they need to fully develop these skills.³⁸

Finally, while working on becoming English proficient, English learner students are also trying to meet the same academic expectations in math, reading, etc., as their native English-speaking peers. Although such demands vary by age, another argument for adopting a bilingual education approach is that students will continue progressing in academic development while becoming proficient in oral and academic English.³⁹

Arguments against Bilingual Education

Arguments against bilingual education are based on the premise that English immersion is the most efficient way to acquire English proficiency and that children whose native language is not English should learn English as quickly as possible to be able to receive all the benefits available to them in an English-speaking society.⁴⁰ These researchers generally don't support the language transfer theory, citing research that finds no short- or long-run differences in the rate of English language acquisition between students in English immersion and bilingual education programs.⁴¹ Some advocates of English immersion claim that there's a critical period for language acquisition, and thus the earlier students are exposed to and learn English, the better. Although scholars argue about whether a critical period exists for acquiring a second language, few challenge the idea that early exposure to language (in infancy and early childhood) is associated with peak proficiency—particularly in certain aspects of language acquisition such as sound production and grammar.⁴² Some researchers suggest that we can see a decline in average proficiency in children introduced to a second language as early as four to six years

old; however, the exact age at which such a decline occurs has been debated, and some suggest that we should be thinking in terms of a “range of age factors” that include an interaction between biology (brain plasticity and other neurological changes) and factors such as exposure and motivation.⁴³ Others further argue that English learners are hurt by being segregated from their English-speaking peers, making it harder for them to assimilate into American society.⁴⁴ And yet others argue that bilingual education is more expensive and that we lack enough qualified bilingual teachers in all native languages to offer high-quality bilingual education.⁴⁵

Is Bilingual Education the Same for All Students?

Some research suggests that degree of language transfer may vary from language to language, depending on the structures of the native and secondary languages in question. As a result, bilingual education's impact on students may depend on students' native languages.⁴⁶ In a recent correlational study, researchers looked at multiple cohorts of students from a large urban district (totaling 13,750) who entered the district in kindergarten. These students were followed over time to examine their outcomes in literacy and math. The data were separated by ethnicity to examine differences for Latino and Chinese English learner students. The trajectories of the two groups differed. Based on standardized test scores in English Language Arts (ELA), test scores grew faster among Latino English learner students enrolled in dual language and bilingual classes than among Latino English learner students enrolled in English immersion classes. As a result, average ELA test scores in the seventh grade were higher for Latino English learner students who were enrolled

in dual language or bilingual classes when they entered kindergarten than for their peers enrolled in English immersion classes. In contrast, ELA test scores didn't grow any faster among Chinese English learner students enrolled in dual language classes than among Chinese English learner students enrolled in English immersion classes. But Chinese English learner students enrolled in a developmental bilingual program performed worse than their peers enrolled in English immersion classes. Researchers suspect that the differences arose because Spanish and English are more structurally similar than Chinese and English.⁴⁷ Although the authors attempted to control for parental preferences and observable differences between students, the students weren't randomly assigned to the programs, so we can't rule out the possibility that part of the difference between Chinese and Latino English learners is explained by which students chose which language programs.

When it comes to the question of whether to teach English learner students in a bilingual classroom, it's likely that there isn't a single answer for all schools.

In addition, when it comes to the question of whether to teach English learner students in a bilingual classroom, it's likely that there isn't a single answer for all schools. Although the majority of English learner students speak Spanish as their home language, more than 50 languages were reported among the top five languages across all states.⁴⁸ As a result, some local education agencies need to

serve students and families with a number of different home languages, and they may or may not have teachers and staff who are also fluent in those languages. Therefore, some types of programs, such as dual language immersion, aren't feasible in all schools or for all students. However, as English learners constitute a growing share of US public school students, it's imperative that we develop and adopt programs that serve them effectively.

In the sections that follow we examine what research has to say about how best to educate young English learners. Because of the scope of this issue of *Future of Children*, we focus on younger children (grades prekindergarten–third grade). We also focus mainly on Spanish-speaking students, because they represent the largest population of English learners in the United States and have been the subjects of almost all the current research. Where appropriate, we incorporate other research; however, our main focus is on children's language and literacy development.

Evaluations and Reviews: Bilingual versus English Immersion Classes

Numerous studies have compared how bilingual education and English immersion affect academic performance and English language acquisition. The results have been conflicting, leaving most researchers still uncertain about which is the best way to educate English learners. These studies vary in their methodology and quality. Very few can be categorized as experimental or quasi-experimental studies that allow us to make causal conclusions. Further, many correlational studies fail to include appropriate control variables. Studies that aren't experimental or don't include appropriate controls fail to

consider that the students enrolled in bilingual or English immersion programs may differ in either observable or unobservable characteristics (for example, their degree of exposure to the English language or their literacy in their native language) that may also affect outcomes and limit our ability to make causal statements. Experimental and quasi-experimental studies confront this problem either by random assignment or by relying on sources of random variation that assign some children to bilingual programs and others to English immersion programs.

For the purposes of our review, another weakness of many studies is that they typically include children from kindergarten through 12th grade. This factor makes it hard to answer questions specifically about children in preschool and the primary grades, whose needs differ from those of older children. Younger children are still trying to gain a strong foundation in their native language while simultaneously mastering English, whereas older children are likely to have higher levels of literacy in their native language but face greater academic demands and tasks that require more abstract thinking and higher-order language manipulation.

In addition, many existing studies are short-term, and short-term studies, whether experimental or correlational, may obscure benefits that appear only in the long term. A recent non-experimental study highlights this problem. This study focused on English learner students in a single district who entered school in kindergarten, and although the students weren't randomly assigned to different groups, the researchers controlled for parental preferences and other observed differences between students in the different programs.⁴⁹ In second grade, the authors found that dual language students scored

significantly worse on the state administered ELA exam than did English learner students enrolled in other bilingual and English immersion programs. However, the authors were able to follow some cohorts of students as far as seventh grade, and they found evidence that students enrolled in the dual language program caught up to students in the other programs by fifth grade. Thus, if we had only the short-run results, we might conclude that dual language programs harm students' ELA achievement. Yet the longer-run evidence suggests that dual language programs may be just as effective but take longer to develop students' English language skills, as advocates of bilingual education have hypothesized.

Language of Instruction for English Learners in Preschool

The amount of high-quality research on language of instruction for preschool-aged English learners is limited. In a systematic review of studies conducted between 2000 and 2011, researchers identified 25 that looked at education interventions for English learner children from birth to five years old.⁵⁰ These studies primarily focused on Spanish-speaking children between three and five years old, and they included studies on professional development, curricular programs, and supplemental instruction, not just those that specifically investigated the impact of language of instruction. The reviewers concluded that current research studies make it difficult to disentangle the effects of a certain curriculum or learning strategy from the effects of language of instruction.

Two recent experimental studies, included in the review, look at how bilingual education affects young students' language development. These two studies randomly assigned

preschool students to bilingual or English immersion classes and found that over the course of one year, preschool students in bilingual classes had better outcomes overall in Spanish and similar outcomes in English compared to their peers in English immersion classes. These studies specifically investigated receptive and expressive vocabulary, phonological awareness, and rhyming, and they found statistically significant gains in Spanish for the bilingual group. Combined with the finding that there were no overall significant differences in English achievement between the two groups, these results suggest that providing less instruction time in English didn't compromise students' English language development but did help the students retain their native language skills.⁵¹ Notably, however, these experiments were based on small samples (150 students in one study and 31 in the other) and considered only short-run outcomes after one year of bilingual or English immersion education, so the results may not apply to other populations and longer-term impacts. In a longitudinal follow-up of the smaller experiment, researchers found that in second grade, overall performance in English among students in the bilingual program was still equal to that of students in the English immersion program.⁵²

Going beyond assigning students to English-only or bilingual classrooms, another experiment looked at how bilingual supplemental-language instruction affected students' language development. In one randomized evaluation, 94 Spanish-speaking preschool students were assigned to one of three groups—a traditional curriculum control group; a group that received the traditional curriculum plus supplemental, small-group literacy instruction in English; or a group that received the traditional

curriculum plus supplemental, small-group literacy instruction using a transitional Spanish/English model. Students who received the supplemental instruction in either English alone or Spanish and English performed significantly better in emergent literacy skills in both languages than did those who received only the traditional curriculum. Moreover, those who received the transitional Spanish/English literacy supplement performed significantly better than the other two groups in emergent literacy skills in Spanish. Students in the transitional Spanish/English group also performed better in English in two areas (vocabulary and print knowledge); the researchers suggest that this finding may indicate some level of language transfer.⁵³

The preschool evidence finds in favor of using bilingual education programs—with the caveat that the studies are relatively small and generally apply only to outcomes after one year.

In summary, studies of bilingual programs for preschool students find that students randomly assigned to a bilingual program perform equally well on tests of English achievement as their counterparts assigned to an English-only program, and in the case of one study, outperform their counterparts in some English literacy areas. Further, the preschool evaluations consistently find that students randomly assigned to bilingual programs outperform English-only program students on tests of Spanish achievement. Thus, the preschool evidence finds in favor

of using bilingual education programs. The caveats are that the studies are relatively small and generally apply only to outcomes after one year.

Language of Instruction for English Learners in Grades K–12

More studies look at the effectiveness of bilingual education for grades K–12 than for younger children; however, they are much more likely to rely on observational data than on experimental or quasi-experimental strategies. Starting in the 1980s, a series of reviews and meta-analyses attempted to look at studies systematically and determine the effectiveness of bilingual education for grades K–12.⁵⁴ Again, the conclusions of these reviews range from the finding that bilingual education makes no difference in outcomes for English learners to the finding that bilingual education is an effective way to educate English learners. The differences depend on factors such as the types of studies that were deemed appropriate for review based on methodology, goals, and how bilingual education was defined; what outcomes the reviewers were seeking to examine (English proficiency, native language proficiency, or acquisition of content material); and how the reviewers defined effectiveness.⁵⁵ Some researchers deem a program to be effective if students in a bilingual program learned as much English as the students in an English immersion group and retained their native language. Others find a program to be effective only if the students in a bilingual program learned significantly more English than those in an English immersion program.

More recent meta-analyses have reached a similar range of conclusions. Two major reviews conducted in 2006 (one by the National Literacy Panel and the other by the

Center for Research on Education, Diversity and Excellence) concluded that teaching students to read in their first language promotes higher levels of reading achievement in English.⁵⁶ Similarly, a 2012 meta-analysis found that bilingual reading programs for elementary school students are more effective than English-only reading programs.⁵⁷ At the same time, the authors cautioned that many of the reviewed studies were short-term and that the researchers didn't assign students randomly to one group or another. For these reasons, the authors called for additional research using randomized designs to assess long-term outcomes. In contrast, another recent review that focused only on experimental and quasi-experimental studies was less optimistic about bilingual education; it concluded that bilingual education doesn't seem to be systematically better or worse for improving English proficiency.⁵⁸ Overall, then, studies that focus on children in grades K–12 suggest that bilingual education is at least as effective as English-only programs.

Randomized evaluations can allow us to make causal statements because they help ensure that differences in outcomes aren't driven by differences in which students receive which type of program. As we noted when we discussed preschool studies, few long-term randomized evaluations of bilingual instruction have been conducted. One exception is a recent evaluation of programs in six schools in different states that randomly assigned Spanish-dominant kindergarteners to either bilingual or English immersion programs. These students were then followed for up to four years. In all cases, reading instruction used the same curriculum either in English or Spanish. The study found that first-grade students in the bilingual classes had significantly higher

scores in Spanish and significantly worse scores in English than did students in English immersion classes. By fourth grade, all the students had transitioned to an English immersion classroom and no significant differences were found in English or Spanish, with the exception that students assigned to the bilingual class scored significantly higher on a Spanish comprehension measure. The authors concluded that all the fourth-grade students were fully bilingual, as measured by their scores on receptive vocabulary, and that language of instruction wasn't a factor in how their English proficiency grew—all the students made similar gains in English language skills (and perhaps decreased in Spanish skills) over time.⁵⁹

Similar findings have been found in more recent quasi-experimental studies. These studies use a regression discontinuity design to evaluate the impact of bilingual education. Regression discontinuity exploits variation in treatment of English learner students generated by policy rules to compare students or programs just above or below a threshold that determines the type of program students receive. As a result, it generates more opportunities to study bilingual programs by using plausibly random variation that is already occurring “naturally,” thus adding to the information provided by the few studies that have randomly assigned students to different program types. For example, in one large urban district a researcher compared students in third through eighth grade who were just above and below the cutoff score in English language proficiency to be eligible for bilingual education. Students just below the cutoff score were eligible for bilingual education, while those just above the cutoff were not. The researcher found no significant differences in reading or

math achievement (in assessments given in English) between students based on their eligibility for the bilingual program.⁶⁰ One critique of this study is that it could assess the impact of bilingual education only on students at the margin of qualifying for bilingual education. Therefore, although bilingual education in this district might not affect reading and math achievement scores for marginal English learner students, it might help English learner students with very low levels of English proficiency. Further, the study couldn't assess impacts on native language achievement because it relied on administrative data consisting of reading and math achievement tests given in English.

Regression discontinuity has also been used to assess the rules used to determine whether students should be classified as English learners (and are therefore entitled to associated services) or assigned to mainstream English-language classes. A recent study used data from the Los Angeles Unified School District in this way to assess rules for assigning kindergarten students to English learner status and for reclassifying older students as English proficient.⁶¹ In this case, a difference in outcomes for students at the margin of the test score cutoff was interpreted as evidence that the test score cutoff was set at the optimal level. The study's author concluded that we would see achievement gains if more kindergarten students were classified as English learners and if students were transferred to mainstream English-language classes at an earlier age. As with small experimental studies, however, the caveat is that these results apply specifically to the Los Angeles Unified School District and the English learner programs it offers. The findings don't necessarily apply outside California or even to other districts in the state.

Finally, regression discontinuity has been used to study what happens to both English learner and non-English learner students when English learner students are offered bilingual education. One study investigated bilingual education in the 261 school districts in Texas most likely to be affected by the state's bilingual education law. By law, Texas districts must offer bilingual education when they have 20 or more English learner students in a particular grade and language; if there are fewer than 20, the district may choose either bilingual education or ESL. Using regression discontinuity, researchers compared student outcomes in districts that were just above the 20-student cutoff (and therefore more likely to provide a bilingual program) to student outcomes in districts just below the cutoff. They found no significant differences on standardized test scores for English learner students in districts that were required to offer bilingual programs compared to districts that offered ESL programs. However, in districts required to provide bilingual education, native English speakers' standardized test scores were significantly higher.⁶² Again, the study relied on district standardized tests given in English, and therefore the authors couldn't estimate impacts on achievement in the English learner students' native language—in this case, Spanish.

Overall, meta-analyses, randomized evaluations, and regression discontinuity studies find that bilingual education has neutral to positive effects on K–12 students' English language development. They also offer some evidence that rules for when to transfer English learners into mainstream classes may not be optimal and that bilingual education may have spillover effects on non-English learner students that often aren't taken into consideration.

English learner children may benefit at least as much from high-quality preschool programs as other children do, if not more so.

Classroom Quality

Some researchers argue that classroom quality may be more important for young English learners' educational outcomes than language of instruction. Research has shown that participating in high-quality preschool programs has large benefits for all children, and the limited research that focuses on preschool quality and English learner children indicates that they may benefit at least as much from high-quality preschool programs as other children do, if not more so.⁶³ Of course, preschool-aged English learners likely need teachers who are trained to work with such students, so a high-quality preschool designed for non-English learner students probably isn't enough.⁶⁴ High-quality preschool teachers for English learners may need to understand language theory and pedagogy related to first and second language acquisition, be sensitive to the role that culture plays in language and overall development, and be able to foster positive peer relationships and parental engagement. Some researchers who investigate the effectiveness of bilingual education programs suggest that the varying quality of these programs may explain why bilingual education is not always more successful than English immersion.⁶⁵ One recent correlational study examined how classroom quality moderates the relationship between instructional language and child

outcomes. It found that the amount of Spanish instruction was positively correlated with children's outcomes in high-quality classrooms with more responsive and sensitive teachers, but negatively correlated with children's outcomes in low-quality classrooms.⁶⁶ (See the article in this issue by Robert Pianta, Jason Downer, and Bridget Hamre for more about teacher responsiveness and classroom quality).

What can teachers who work with young bilingual children do to improve instruction? Instruction in phonemic awareness has been found to help all children with early literacy development. As children's language skills grow stronger, recommendations for tailoring this instruction to English learners include providing more concentrated work on English phonemes or combinations of phonemes that don't exist in the students' native language.⁶⁷ Vocabulary, which is associated with reading comprehension, is also an important aspect of language instruction. Students whose native language isn't English typically enter school with a limited vocabulary of English words, in terms of both breadth (number) and depth of word knowledge (knowing many things about a word, such as its meaning and semantic associations).⁶⁸ Thus researchers recommend that teachers target depth of word knowledge when working with English learners and take advantage of students' first language in building vocabulary, especially if the language shares cognates with English.⁶⁹

A recent review of research-based practices for young English learner students highlights five practices to help support English learner students in the classroom:⁷⁰

1. Use frequent assessments in both a child's first and second language to adapt

instruction to the child's developing levels of language proficiency;

2. Use focused, small-group activities to give English learner children opportunities to respond to questions and receive more individualized instruction;
3. Provide explicit vocabulary instruction;
4. Use academic English in instruction to further develop academic English, and provide explicit opportunities to learn academic English such as the words for mathematical concepts; and
5. Promote socioemotional development by creating positive teacher-student relationships and facilitating peer interactions.

Conclusions

As a whole, the research evidence is still inconclusive regarding the overall effectiveness of different forms of instruction for English learners. Which form of instruction is most effective is a challenging question to answer, even with the most rigorous research strategies. This uncertainty stems in part from the fact that researchers and policymakers don't share a consensus on the ultimate goal of education for English learners. Is the goal to help English learner students become truly bilingual or to help them become proficient in the English language? Evidence from meta-analyses, with the finding that teaching children to read in their native language improves reading achievement in English, leans in favor of bilingual education in the early years. However, the studies underlying these meta-analyses are generally non-experimental, and therefore the effects we see may be caused by factors other than the language of

instruction. Recent evidence from small, randomized evaluations at the preschool level suggests that English learners achieve about the same English proficiency whether they're placed in bilingual or English immersion programs. Furthermore, even if students enrolled in bilingual classes don't outperform their peers enrolled in non-bilingual classes in terms of English achievement, they do outperform their peers in Spanish-language achievement.

Beyond the question of whether bilingual programs do better than immersion programs at improving language proficiency for English learners, the optimal design of bilingual programs isn't clear. Which approach or combination of approaches is most effective in moving English learners to English proficiency? We don't know, for example, whether curricular or supplemental bilingual programs are most effective for student achievement. Nor are we certain how quickly students should be transitioned from bilingual to English immersion classrooms. Should students enter an English immersion program as soon as possible, or should they stay in a dual language classroom until they have a strong foundation in their native language (early- versus late-exit bilingual programs)? Other important issues to consider include the teacher workforce in various languages and the benefits and costs of bilingual education for non-English learner students.⁷¹ Districts also need to keep in mind that bilingual education may be more costly than English immersion programs, may increase segregation, and may be infeasible for some schools and some languages.

Another source of uncertainty is that existing US research has largely focused

on Spanish-speaking students, because roughly three-quarters of public-school English learner students report Spanish as their home language. However, US immigration patterns have shifted in recent years, with more immigrants coming from Asia and fewer coming from Mexico.⁷² Existing research on bilingual education may not apply to a growing population of English learner students from Asian countries. Thus, additional research that looks simply at the impact of "bilingual" education versus "immersion" isn't likely to offer school districts the kind of guidance they need to craft truly effective programs for English learners.

Meanwhile, several researchers have argued for greater attention to the quality rather than the language of instruction.⁷³ If a setting can offer a high-quality program with a bilingual teacher, then the research evidence suggests that at the least, students won't be harmed in terms of learning English, and they may be able to retain their native language skills. However, if districts can't provide a high-quality bilingual program, schools may be better off working to increase classroom quality generally or exploring supplemental bilingual programs rather than trying to ensure that students have access to a fully bilingual education. Overall, if the goal is to help English learners become proficient in English, then educators and policymakers must keep in mind that bilingual education is but one tool and that other factors also deserve attention, including the quality of instruction, supplemental programs, and the family and community environment that are critical for a young student's success.

ENDNOTES

1. Ellen Bialystok and Michelle M. Martin, "Attention and Inhibition in Bilingual Children: Evidence from the Dimensional Change Card Sort Task," *Developmental Science* 7 (2004): 325–39, doi: 10.1111/j.1467-7687.2004.00351.x; Raluca Barac et al., "The Cognitive Development of Young Dual Language Learners: A Critical Review," *Early Childhood Research Quarterly* 29 (2014): 699–714, doi: 10.1016/j.ecresq.2014.02.003; Stephanie M. Carlson and Andrew N. Meltzoff, "Bilingual Experience and Executive Functioning in Young Children," *Developmental Science* 11 (2008): 282–98, doi: 10.1111/j.1467-7687.2008.00675.x.
2. Fergus I. M. Craik, Ellen Bialystok, and Morris Freedman, "Delaying the Onset of Alzheimer Disease: Bilingualism as a Form of Cognitive Reserve," *Neurology* 75 (2010): 1726–29, doi: 10.1212/WNL.0b013e3181fc2a1c.
3. For a broader discussion of these historical changes in laws and attitudes, see Carlos J. Ovando, "Bilingual Education in the United States: Historical Development and Current Issues," *Bilingual Research Journal* 27 (2003): 1–24, doi: 10.1080/15235882.2003.10162589, and James Crawford, "Language Politics in the U.S.A.: The Paradox of Bilingual Education," *Social Justice* 3, no. 3 (1998): 55–69.
4. Office of Civil Rights, "Ensuring English Learner Students Can Participate Meaningfully and Equally in Educational Programs," <http://www2.ed.gov/about/offices/list/ocr/docs/dcl-factsheet-el-students-201501.pdf>.
5. Every Student Succeeds Act of 2015, S. 1177, 114th Congress, <https://www.gpo.gov/fdsys/pkg/BILLS-114s1177enr/pdf/BILLS-114s1177enr.pdf>.
6. Improving Head Start for School Readiness Act of 2007, H.R. 1429, 110th Congress, https://eclkc.ohs.acf.hhs.gov/hslc/standards/law/HS_ACT_PL_110-134.pdf.
7. Office of Head Start, *Head Start Early Learning Outcomes Framework: Ages Birth to 5* (Washington, DC: Administration for Children and Families, 2015), <https://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/ohs-framework.pdf>.
8. Authors' calculations based on W. Steven Barnett et al., *The State of Preschool 2014: State Preschool Yearbook* (New Brunswick, NJ: National Institute for Early Education Research, 2015), http://nieer.org/sites/nieer/files/Yearbook2014_full3.pdf. Categories are not mutually exclusive.
9. Office of Head Start, "Head Start Services Snapshot: National (2014–2015)," <http://eclkc.ohs.acf.hhs.gov/hslc/data/psr/2015/services-snapshot-hs-2014-2015.pdf>. Authors' calculations based on data from the American Community Survey (ACS).
10. US Department of Education, "Table 204.27: English Language Learner (ELL) Students Enrolled in Public Elementary and Secondary Schools, by Grade and Home Language: 2013–14," *Digest of Education Statistics*, accessed January 4, 2016, http://nces.ed.gov/programs/digest/d15/tables/dt15_204.27.asp.
11. Authors' calculations based on EL counts from National Clearinghouse for English Language Acquisition (NCELA), "Title III State Profiles," accessed March 29, 2016, <http://www.ncela.us/t3sis/index.php>, and enrollment counts from National Center for Education Statistics (NCES), "Table 203.40: Enrollment in Public Elementary and Secondary Schools, by Level, Grade, and State or Jurisdiction: Fall 2013," *Digest of Education Statistics*, accessed March 29, 2016, http://nces.ed.gov/programs/digest/d15/tables/dt15_203.40.asp.

12. State-level statistics based on authors' calculations using data from: California Department of Education, "CalEdFacts," accessed January 8, 2016, <http://www.cde.ca.gov/re/pn/fb/index.asp>; Texas Education Agency, "ELL Student Reports by Category and Grade," accessed January 8, 2016, <https://rptsrvr1.tea.texas.gov/adhocrpt/adlepeg.html>; Florida Department of Education, "Florida EDStats," accessed March 8, 2016, <https://edstats.fldoe.org/SASPortal/main.do>; Illinois State Board of Education, Data Analysis and Progress Reporting Division, *Illinois Bilingual Education Programs: 2004 Evaluation Report* (Springfield, IL: Illinois State Board of Education, 2005), http://www.isbe.state.il.us/research/pdfs/ell_stu-prog_eval_rpt04.pdf; Illinois State Board of Education, Data Analysis and Accountability Division, *Bilingual Education Programs and English Learners in Illinois: SY 2013 (2012–2013 School Year) Statistical Report* (Springfield, IL: Illinois State Board of Education, 2015), <http://isbe.state.il.us/research/pdfs/el-program-stat-rpt13.pdf>; and New York State Education Department, "New York State Data," accessed January 8, 2016, <http://data.nysed.gov/>.
13. Office of English Language Acquisition, Language Enhancement, and Academic Achievement for Limited English Proficient Students, *Biennial Report to Congress on the Implementation of the Title III State Formula Grant Program: School Years 2010–12* (Washington, DC: US Department of Education, 2015), http://ncela.us/files/uploads/3/Biennial_Report_1012.pdf.
14. US Department of Education, "Table 204.27."
15. Office of Head Start, "Services Snapshot."
16. Li Feng, Yunwei Gai, and Xiaoning Chen, "Family Learning Environment and Early Literacy: A Comparison of Bilingual and Monolingual Children," *Economics of Education Review* 39 (2014): 110–30, doi: 10.1016/j.econedurev.2013.12.005.
17. Child Trends DATABANK, *Indicators on Children and Youth: Dual Language Learners*, November 2014, accessed March 29, 2016, <http://www.childtrends.org/?indicators=dual-language-learners>.
18. Authors' calculations based on NCELA, Title III State Profiles and NCES, "Table 203.40."
19. Authors' calculations based on 2013–14 CSPR data.
20. National Center for Education Statistics, "Table 219.46: Public High School 4-Year Adjusted Cohort Graduation Rate (ACGR), by Selected Student Characteristics and State: 2010–11 through 2012–3," *Digest of Education Statistics*, accessed March 29, 2016, https://nces.ed.gov/programs/digest/d14/tables/dt14_219.46.asp.
21. Hoyt Bleakley and Aimee Chin, "Language Skills and Earnings: Evidence from Childhood Immigrants," *Review of Economics and Statistics* 86 (2004): 481–96, doi: 10.1162/003465304323031067; and Mevlude Akbulut-Yuksel, Aimee Chin, and Hoyt Bleakley, "Effects of English Proficiency among Childhood Immigrants: Are Hispanics Different?" in *Latinos and the Economy*, ed. David L. Leal and Stephen J. Trejo (New York: Springer-Verlag, 2001), 255–83.
22. Authors' calculations based on publicly available data from the ECLS-K. We use all children assessed in each survey round. Children who are proficient in English at kindergarten entry include those who report that English is the primary language spoken in their home as well as those who passed an English proficiency test in the fall of 1998.
23. The gap declines from 0.64 standard deviations at kindergarten entry to 0.4 standard deviations in eighth grade.

24. Eight percent of children in the kindergarten sample were not given the English-language reading test because they did not score high enough on the English proficiency assessment. By spring of first grade, only 2 percent of children were not tested because they did not score high enough on the English proficiency assessment (National Center for Education Statistics, “Table 220.70: Mean Reading Scale Scores and Specific Reading Skills of Fall 1998 First-Time Kindergarteners, by Time of Assessment and Selected Characteristics: Selected Years, Fall 1998 through Spring 2007,” *Digest of Education Statistics*, accessed March 29, 2016, https://nces.ed.gov/programs/digest/d14/tables/dt14_220.70.asp).
25. The gap is 0.29 standard deviations at kindergarten entry, 0.69 standard deviations in 2002, and 0.48 standard deviations by the spring of 2007.
26. Feng, Gai, and Chen, “Family Learning Environment.”
27. Stephen May, “Bilingual/Immersion Education: What the Research Tells Us,” in *Encyclopedia of Language and Education*, ed. James Cummins and Nancy H. Horberger, 2nd ed. (New York: Springer, 2008), 1483–98.
28. J. David Ramirez et al., *Final Report: Longitudinal Study of Structured Immersion Strategy, Early-Exit, and Late-Exit Transitional Bilingual Education Programs for Language-Minority Children* (San Mateo, CA: Aguirre International, 1991).
29. Ofelia García, Jo Anne Kleifgen, and Lorraine Falchi, “From English Language Learners to Emergent Bilinguals,” *Equity Matters: Research Review* no. 1 (New York: Campaign for Educational Equity, Teachers College, Columbia University, 2008); Connor P. Williams, *Chaos for Dual Language Learners: An Examination of State Policies for Exiting Children from Language Services in the PreK–3rd Grades* (Washington, DC: New America, 2014).
30. García, Kleifgen, and Falchi, “From English Language Learners.”
31. James Cummins, “Linguistic Interdependence and the Educational Development of Bilingual Children,” *Review of Educational Research* 49 (1979): 222–51, doi: 10.3102/00346543049002222.
32. Claude Goldenberg, “Teaching English Language Learners: What the Research Does and Does Not Say,” *American Educator* (Summer 2008): 8–44.
33. Fred Genesee et al., “English Language Learners in U.S. Schools: An Overview of Research Findings,” *Journal of Education for Students Placed at Risk* 10 (2005): 363–85, doi: 10.1207/s15327671espr1004_2; Diane August and Timothy Shanahan, “Executive Summary,” in *Developing Literacy in Second-Language Learners: Report of the National Literacy Panel on Language-Minority Children and Youth*, ed. Diane August and Timothy Shanahan (Mahwah, NJ: Lawrence Erlbaum Assoc., 2006), 1–8.
34. Cummins, “Linguistic Interdependence.”
35. Michael J. Kieffer, “Early Oral Language and Later Reading Development in Spanish-Speaking English Language Learners: Evidence from a Nine-Year Longitudinal Study,” *Journal of Applied Developmental Psychology* 33 (2012): 146–57, doi: 10.1016/j.appdev.2012.02.003; August and Shanahan, “Executive Summary”; Kenju Hakuta, Yuko Goto Butler, and Daria Witt, *How Long Does It Take English Learners to Attain Proficiency?* (Santa Barbara: University of California Linguistic Minority Research Institute, 2000).
36. Hakuta, Butler, and Witt, *How Long Does It Take?*
37. Linda M. Espinosa, “Perspectives on Assessment of DLLs Development & Learning, PreK–Third Grade,” paper presented at the National Research Summit on the Early Care and Education of Dual Language Learners, Washington DC, October 14–15, 2014.
38. Genesee et al., “English Language Learners.”
39. García, Kleifgen, and Falchi, “From English Language Learners.”

40. Rosalie Pedalino Porter, "Educating English Language Learners in US Schools: Agenda for a New Millennium," in *Georgetown University Roundtable on Languages and Linguistics 1999*, ed. James E. Alatis and Ai-Hui Tan (Washington, DC: Georgetown University Press, 2001), 128–38; Eric J. Stone, "The Official English Movement and Bilingual Education Reform," in Alatis and Tan, *Georgetown University Roundtable*, 139–48.
41. Robert E. Slavin et al., "Reading and Language Outcomes of a Multiyear Randomized Evaluation of Transitional Bilingual Education," *Educational Evaluation and Policy Analysis* 33 (2011): 47–58, doi: 10.3102/0162373711398127.
42. Elissa L. Newport, "Critical Periods in Language Development," in *The Encyclopedia of Cognitive Science*, ed. Lynn Nadel (London: Macmillan Publishers, 2002), 737–40.
43. Ibid.; Jacqueline S. Johnson and Elissa L. Newport, "Critical Period Effects in Second Language Learning: The Influence of Maturation State on the Acquisition of English as a Second Language," *Cognitive Psychology* 21 (1989): 60–99; David Singleton, "Age and Second Language Acquisition," *Annual Review of Applied Linguistics* 21 (2001): 77–89, doi: 10.1017/S0267190501000058.
44. Aimee Chin, "Impact of Bilingual Education on Student Achievement," *IZA World of Labor* (March 2015): article 131, doi: 10.15185/izawol.131.
45. Chin, "Impact of Bilingual Education."
46. Goldenberg, "Teaching English Language Learners."
47. Rachel A. Valentino and Sean F. Reardon, "Effectiveness of Four Instructional Programs Designed to Serve English Language Learners: Variation by Ethnicity and Initial English Proficiency," *Educational Evaluation and Policy Analysis* 37 (2015): 612–37, doi: 10.3102/0162373715573310.
48. Office of English Language Acquisition, Language Enhancement, and Academic Achievement for Limited English Proficient Students, *Biennial Report*.
49. Rachel A. Valentino and Sean F. Reardon, "Four Instructional Programs."
50. Virginia Buysse et al., "Effects of Early Education Programs and Practices on the Development and Learning of Dual Language Learners: A Review of the Literature," *Early Childhood Research Quarterly* 29 (2014), 765–85, doi: 10.1016/j.ecresq.2013.08.004.
51. W. Steven Barnett et al., "Two-Way and Monolingual English Immersion in Preschool Education: An Experimental Comparison," *Early Childhood Research Quarterly* 22 (2007): 277–93, doi: 10.1016/j.ecresq.2007.03.003; Lillian K. Durán, Cary J. Roseth, and Patricia Hoffman, "An Experimental Study Comparing English-Only and Transitional Bilingual Education on Spanish-speaking Preschoolers' Early Literacy Development," *Early Childhood Research Quarterly* 25 (2010): 207–17, doi: 10.1016/j.ecresq.2009.10.002.
52. Lillian K. Durán et al., "Spanish-Speaking Preschoolers' Early Literacy Development: A Longitudinal Experimental Comparison of Predominantly English and Transitional Bilingual Education," *Bilingual Research Journal* 36 (2013): 6–34, doi: 10.1080/15235882.2012.735213.
53. Jo Ann M. Farver, Christopher J. Lonigan and Stefanie Eppe, "Effective Early Literacy Skill Development for Young Spanish-Speaking English Language Learners: An Experimental Study of Two Methods," *Child Development* 80 (2009): 703–19, doi: 10.1111/j.1467-8624.2009.01292.x.

54. Keith A. Baker and Adriana A. De Kanter, *Effectiveness of Bilingual Education: A Review of the Literature. Final Draft Report* (Washington, DC: Department of Education, Office of Planning, Budget, and Evaluation, 1981); Christine H. Rossell and Keith Baker, "The Educational Effectiveness of Bilingual Education," *Research in the Teaching of English* 30 (1996): 7–74; Jay P. Green, "A Meta-Analysis of the Rossell and Baker Review of Bilingual Education Research," *Bilingual Research Journal* 21 (1997): 103–22, doi: 10.1080/15235882.1997.10668656; Ann C. Willig, "A Meta-Analysis of Selected Studies on the Effectiveness of Bilingual Education," *Review of Educational Research* 55 (1985): 269–317, doi: 10.3102/00346543055003269.
55. Keith Baker, "Comment on Willig's 'A Meta-Analysis of Selected Studies in the Effectiveness of Bilingual Education,'" *Review of Educational Research* 57 (1987): 351–62, doi: 10.3102/00346543057003351.
56. August and Shanahan, "Executive Summary"; Genesee et al., "English Language Learners"; Goldenberg, "Teaching English Language Learners."
57. Alan C. K. Cheung and Robert E. Slavin, "Effective Reading Programs for Spanish-Dominant English Language Learners (ELLs) in the Elementary Grades. A Synthesis of Research," *Review of Educational Research* 82 (2012): 351–95, doi: 10.3102/0034654312465472.
58. Chin, "Impact of Bilingual Education."
59. Robert E. Slavin et al., "Reading and Language Outcomes."
60. Cheung and Slavin, "Effective Reading Programs."
Jordan D. Matsudaira, "Sinking or Swimming? Evaluating the Impact of English Immersion versus Bilingual Education," University of California, Berkeley, Robert Wood Johnson Scholars in Health Policy Program, December 2005.
61. Nolan G. Pope, "The Marginal Effect of K–12 English Language Development Programs: Evidence from Los Angeles Schools," *Economics of Education Review* (forthcoming).
62. Aimee Chin, N. Meltem Daysal, and Scott A. Imberman, "Impact of Bilingual Education Programs on Limited English Proficient Students and Their Peers: Regression Discontinuity Evidence from Texas," *Journal of Public Economics* 107 (2013): 63–78, doi: 10.1016/j.jpubeco.2013.08.008.
63. Lynn Karoly and Gabriella C. Gonzalez, "Early Care and Education for Children in Immigrant Families," *Future of Children* 21, no. 1 (2011): 71–101.
64. Ellen Frede and Alexandra Figueras-Daniel, "Policy Advances & Levers Related to DLLs in PreK–3rd Grade," paper presented at the National Research Summit on the Early Care and Education of Dual Language Learners, Washington DC, October 14–15, 2014.
65. Slavin et al., "Reading and Language Outcomes."
66. Margaret Burchinal et al., "Instruction in Spanish in Pre-Kindergarten Classrooms and Child Outcomes for English Language Learners," *Early Childhood Research Quarterly* 27 (2012): 188–97, doi: 10.1016/j.ecresq.2011.11.003; Marlene Zepeda, "Human Resource Support for Those Serving Young Dual Language Learners," paper presented at the National Research Summit on the Early Care and Education of Dual Language Learners, Washington DC, October 14–15, 2014.
67. August and Shanahan, "Executive Summary"; Diane August, Peggy McCardle, and Timothy Shanahan, "Developing Literacy in English Language Learners: Findings from a Review of the Experimental Research," *School Psychology Review* 43 (2014): 490–498, doi: 10.17105/SPR-14-0088.1.
68. Diane August et al., "The Critical Role of Vocabulary Development for English Language Learners," *Learning Disabilities Research and Practice* 20 (2005): 50–57, doi: 10.1111/j.1540-5826.2005.00120.x.
69. *Ibid.*; for a complete review of this topic, see Castro, "Research Based on Best Practices."

70. Dina C. Castro, “Research Based on Best Practices for DLLs in PreK–3rd Grade: Instructional Strategies and Language of Instruction Approaches,” paper presented at the National Research Summit on the Early Care and Education of Dual Language Learners, Washington DC, October 14–15, 2014.
71. Chin et al., “Impact of Bilingual Education”; Rosa Minhyo Cho, “Are There Peer Effects Associated with Having English Language Learner (ELL) Classmates? Evidence from the Early Childhood Longitudinal Study Kindergarten Cohort (ECLS-K),” *Economics of Education Review* 31 (2012): 629–43, doi: 10.1016/j.econedurev.2012.04.006.
72. Jacob L. Vigdor, *Measuring Immigrant Assimilation in Post-Recession America*, Manhattan Institute Civic Report no. 76, March 25, 2013, http://www.manhattan-institute.org/pdf/cr_76.pdf.
73. Chin, “Impact of Bilingual Education”; Slavin et al., “Reading and Language Outcomes”; Burchinal et al., “Instruction in Spanish.”

