

Early Childhood Native American Language Immersion Programs:

A Promising Approach to School Preparation, Economic Opportunity and Language Preservation

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The views expressed here are the author's and not those of the Federal Reserve Bank of Minneapolis or the Federal Reserve System.

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Summary

Research shows that high-quality early childhood education has a positive impact on children's school performance and provides the foundation for future workforce skills. Consistent with this research, early childhood Native American language immersion programs have the potential to help children prepare for school and life as well as support efforts to increase the number of Native language speakers. When implemented with sufficient resources and high quality, early language immersion programs seem to support the goals of preparing children for school, developing future workforce skills, and preserving Native languages with little downside risk to any of these outcomes.

Introduction

Thank you for asking me to participate in today's panel on early childhood education. I hope the information I present will be helpful to you, the leaders and educators gathered for this forum, as you develop strategies to meet your communities' goals.

I will start by highlighting the interest of the Federal Reserve in engaging in community development issues and collaborating with Native American communities. I will then share compelling research on the importance of the early years on brain development and language acquisition. Long-term research projects show that high-quality early learning programs can have a positive impact on school preparedness and life success as well as a high return on investment.

Finally, I will connect the implications of this research to early childhood Native language immersion programs, which have the potential to help children prepare for school and life as well as support efforts to increase the number of Native language speakers. When implemented with sufficient resources and high quality, early language immersion programs seem to support the goals of preparing children for school, developing future workforce skills, and preserving Native languages with little downside risk to any of these outcomes.

Note that the views I express today are my own and not necessarily those of the Minneapolis Fed or the Federal Reserve System.

Role of the Federal Reserve System in Community Development

The Federal Reserve System serves as the central bank for the United States with a mission to foster the stability and efficiency of the nation's monetary and financial systems. The Federal Reserve promotes positive economic performance and works to maintain public confidence. The Federal Reserve is

organized into 12 district banks and the Board of Governors in Washington, D.C. I work as an economist at one of those 12 banks, the Federal Reserve Bank of Minneapolis, which is the head office of the Federal Reserve System's Ninth District. The Ninth District includes Minnesota, Montana, North Dakota, South Dakota, the northwestern portion of Wisconsin, and the Upper Peninsula of Michigan.

The Federal Reserve has many different functions to serve its mission, including conducting monetary policy, supervising and regulating banks, and overseeing the payment system. Among these functions is the Federal Reserve's community development area, which promotes fair and informed access to financial markets for communities and individuals, recognizing the particular needs of underserved populations. Each Federal Reserve Bank has a community development department that convenes stakeholders to collaborate on community and economic development initiatives, conduct and share applied research, and identify emerging issues.

The Ninth District includes 45 American Indian reservations and other Native American communities, from as far west as the Kootenai in Montana to as far east as the Ojibwe in the Upper Peninsula of Michigan. For many years the Community Development Department at the head office in Minneapolis and its branch bank in Helena, Mont., has made Native communities a priority in its technical assistance, outreach, and research. To sustain and strengthen its collaborative work in these communities, the Minneapolis Fed is in the process of creating the [Center for Indian Country Development](#). The Center's mission is to help self-governing communities of American Indians in the United States attain their economic development goals.

Part of my work in community development is investigating the impact of the early years on the life success of children. Communities are only as strong as their members, and the first few years of life have a strong impact on children's future success. Communities also play a key role in nurturing childhood development, as I will describe shortly.

In 2002, I came to this area of research in collaboration with Art Rolnick, who at the time was the director of research at the Minneapolis Fed, by investigating questions regarding the economic implications for early childhood development.¹ First, what is the impact on the quality of the workforce when children get off to a strong start? Answer: When children arrive at kindergarten prepared to learn, they are more likely to succeed in school and in the workforce. And second, what is the return to society from making early investments in children? Answer: The return on these investments can pay for itself many times over.

The early years are a sensitive period for brain development and language acquisition

The foundation for school and life success begins early, as neuroscience and child development research show that the first few months and years are a sensitive period for brain development and language acquisition. Individuals' overall quality of life and the contributions that they make to society as adults can be traced, to a significant degree, to their first years of life. When this sensitive period includes

support for growth in language, motor skills, adaptive abilities, and social-emotional functioning, the child is more likely to succeed in school and to later contribute to society.²

Healthy brain development occurs when parents and other caregivers interact with the child through a responsive “serve-and-return” process. The Center on the Developing Child at Harvard University likens the process to a lively game of tennis or volleyball. The infant or young child babbles, gestures, or cries, and then an adult responds appropriately with eye contact, words, or a hug. A responsive back-and-forth interaction between child and adult helps build neural connections and healthy brain architecture.³

Science also shows the first few years of life are critical for language development, as growth in the areas of the brain that regulate language development peak during the first year of life.⁴ Children are born with the capacity to learn any language in the world. As children hear words from a particular language, let’s say Ojibwe, connections in the brain are formed based in response to the sounds of Ojibwe words. But if a child doesn’t hear any Ojibwe words during her first months and years, the connections needed to distinguish and speak Ojibwe don’t form. This does not mean that one cannot learn Ojibwe as an additional language as a child or adult; it does mean that it will take more effort. Regardless of which language children are first exposed to, learning language is a natural process for young children as they begin to use language to learn and communicate about their experiences and environment.⁵

Exposure to two languages during the first few months and years of life doesn’t impair acquisition of either language over time, and this period can be a beneficial time to start learning more than one language.⁶ (Indeed, this is the norm in most of the world.) Research shows that when people are engaged in a language-rich environment during infancy or very early childhood, they are more likely to develop peak proficiency in the language, including control over the sound system and grammatical structure. With increasing ages of engagement with a language, there is a decline in average proficiency, beginning as early as ages four to six.⁷ Early exposure to a second language is also consistent with proficiency in the language. A study of Chinese and Korean immigrants who move to the United States and become exposed to English shows that the earlier the exposure, the stronger their ability to judge English grammatical structure many years later.⁸ While early engagement with a second language on average is better, especially with respect to pronunciation, there is a large amount of individual variation. It is also important that skills taught in both languages are age-appropriate.⁹ And as mentioned before, language learning can successfully begin at any age, but on average it takes more effort the later a person begins.

In addition to language acquisition, recent research suggests that children who develop dual language skills may have advantages in some aspects of executive function compared with monolingual speakers. Executive function and self-regulation skills refer to the mental processes that enable planning, focusing attention, holding working memory, and juggling multiple tasks successfully.¹⁰ Carlson and Metzloff find that bilingual children who were exposed to two languages early perform better on managing

conflicting attentional demands than monolingual speakers,¹¹ and Bialystok finds that bilingual children are more advanced in solving experimental problems that require high levels of cognitive control.¹² In other words, bilingual children were better at avoiding distractions and suppressing non-related information while attending to the task at hand.

From this research three key themes emerge for our discussion on early childhood Native language immersion programs. First, it's important for language development that a child is engaged with rich language experiences during the first few months and years of life through the serve-and-return interaction between child and adult. Children build on early connections to gain proficiency in their language(s). Second, it matters less what language a child learns as his first language than that the child learns to use a language to learn and communicate about her experiences and environment. Third, exposure to two languages during a child's early years need not impair overall language development, and there may be developmental advantages to early exposure to a second language. Whether exposed to one language or two, the quality of interactions between adults and children influence how well children build language skills.

Implications of toxic stress on child development

The importance of early nurturing is made clear when we understand the impact on brain development from a lack of quality early nurturing. Early experiences are built into the body, and significant adversity, or toxic stress, early in life can impair the parts of the brain that are used for learning and memory and can produce physiological disruptions that persist far into adulthood.¹³

For example, according to analysis of data collected in the Adverse Childhood Experiences study, adults who suffered multiple adverse experiences in childhood were three times more likely to suffer from heart disease.¹⁴ Adverse experiences include excessive stressful environments, such as growing up in poverty; exposure to violence, abuse, or neglect; a household member incarcerated or mentally ill; and parental separation or divorce. The impact of toxic stress on young children isn't borne just by them and their families, but all of society, since these children are more likely to drop out of school, depend on government assistance, and commit crime.¹⁵

We can see early on the effects of a child's environment on development. For example, in *Meaningful Differences in the Everyday Experience of Young American Children*, researchers document that by the age of three, children observed in families with college-educated parents typically had twice the vocabulary as children in families with very low income.¹⁶ And according to a recent report by García and Weiss, U.S. kindergarten children in the highest quintile by socioeconomic status have reading scores that are significantly higher—by a full standard deviation—than scores of their peers in the bottom quintile.¹⁷

High-quality early learning programs produce high public returns

High-quality early learning programs strive to nip those achievement gaps in the bud, by providing positive environments and experiences for healthy brain development. They offer enriched experiences, either for groups of children in early learning programs or by reaching out to parents in their homes to provide counseling about child development. Sometimes programs provide a combination of group experiences for children and home visits for parents. The impact of early investments is strongest for children facing adversity, as early preventive programs are able to reach children during a sensitive period of development and buffer the potential impact of toxic stress.

Four key longitudinal evaluations demonstrate that early interventions can have a positive impact on young children from disadvantaged environments that last well into adulthood. The studies used well-matched comparison groups and cost-benefit analysis to compare the estimated dollar value of benefits to the cost of the programs.¹⁸ The cost-benefit framework also provides insight into the type of near-term and long-term benefits that are available from investing in early learning.

Analyses of the Perry Preschool Program,¹⁹ the Abecedarian Project,²⁰ the Chicago Child-Parent Centers²¹ and the Elmira Prenatal/Early Infancy Project²² showed annual rates of return, adjusted for inflation, ranging from 7 percent to just over 20 percent.²³ The Perry Preschool Program and Chicago Child-Parent Centers provided preschool at ages three and four, Abecedarian provided full-day care and education for children a few months old through age four and the Elmira Prenatal/Early Infancy Project provided home visits by a nurse to high-risk mothers during pregnancy until the child turned age two.

The benefits attributed to these programs include reductions in special education and crime, and increases in tax revenue. According to a study by Wilder Research, investment in early childhood education can save K-12 public schools money by reducing special education costs and grade retention and improving classroom productivity. A cost-benefit analysis in Minnesota suggests that the monetary benefits accrued to the school system come close to covering the cost of providing preschool.²⁴

Reductions in the cost of crime play a large role in boosting overall rates of return, particularly for the Perry Preschool Program, which has a benefit-cost ratio of \$16 returned for every \$1 invested. Only the Abecedarian Project did not include cost reductions due to decreases in crime because differences in crime rates between the treatment and control groups were not statistically significant.²⁵ In each study, the drop in crime led to reduced costs for incarceration, police protection, and courts. Furthermore, the costs to the victims of crime decreased, including loss of property and suffering. Added together across all four longitudinal studies, the savings in crime alone could justify increased investment in high-quality early learning.

In addition to the longitudinal studies, a meta-analysis by Washington State Institute for Public Policy creates an average composite of 53 early learning programs to compare the return on investment with other intervention programs for youth. The results for early childhood education for three- and four-year-old children, the Nurse Family Partnership, and home visiting programs for at-risk mothers and

children compared favorably with other intervention program types reviewed by the authors, including several parole supervision programs for juvenile offenders.²⁶

In addition to reductions in remedial education and crime costs, the longitudinal evaluations show that children who take part in early learning programs have higher earnings and pay more taxes once they reach working age. According to a cost-benefit analysis of the Perry Preschool study, a child who attended preschool will pay \$38,000 to \$75,000 more in taxes over his or her lifespan than a child who did not attend.²⁷

However, the return-on-investment calculations have not captured a number of potential benefits from improving child and adult health. For example, a review of the Abecedarian study and recently collected biomedical data show that adults in their mid-30s who attended the early learning program as children have lower prevalence of risk factors for heart disease and diabetes compared with adults in the control group. The study notes that the outcomes were particularly strong for males who had lower blood pressure and no incidences of metabolic syndrome (a cluster of conditions associated with increased risk of heart disease, stroke and diabetes), whereas 25 percent of males in the control group were affected by metabolic syndrome.²⁸

Finally, while children and their families benefit in the studies, the majority of financial benefits accrue to society.²⁹ That is, everyday citizens can receive proportionally more benefits than the individual children and families participating in early learning programs.

Research shows that successful programs provide high-quality services to children and families, including well-trained and effective teachers, appropriate ratios of children to teachers, a tested curriculum that guides lesson planning,³⁰ and an assessment system to inform individual instruction. Successful programs also engage parents as children's primary teachers and recognize that regular child attendance is important for success.³¹ The resources required to provide a high-quality early learning program are not small, but the benefits of implementing high-quality programs have shown to return much more than their cost.

On a cautionary note, low-quality child care arrangements that lack engagement by caregivers or create excessive stress can hamper healthy child development. For example, arrangements that have non-responsive or over-controlling caregivers, an inappropriate number of children to adults, or age-inappropriate activities, such as watching television for most of the day, can have an adverse impact on child development.

Early childhood Native American language immersion programs

Research on child development and the findings from early learning program evaluations have a number of implications for early childhood Native American language immersion programs. Before I highlight those implications, here is a brief description of Native language immersion programs. A primary goal

of Native language immersion programs is to revitalize Native languages. Many Native American languages face a declining number of speakers, and without changes in trajectory, a likelihood of extinction. Language immersion is a promising model to develop a new generation of Native language speakers. In addition, Native language immersion programs emphasize connecting children to Native values and cultural practices.

Native language immersion programs vary in the amount of instruction conducted in the Native language—that is, whether the program is partial or full immersion. Teachers at Native language immersion programs are often community members who have varying levels of proficiency in the Native language. Tribal elders proficient in the Native language are often sought as experts in the language and as resources for classrooms.³² In addition, tribal colleges are a resource for training language immersion teachers and some progress is being made in this regard; however, as William Wilson at the University of Hawaii at Hilo notes, many effective teachers began learning a Native language through their own initiative as independent scholars supported by some classes and help with linguistics.³³ Building teacher training capacity is a critical step to develop language immersion teachers with proficiency both in the Native language and pedagogy.

Native language immersion programs engage parents to help meet their own and their children's goals of language acquisition and cultural vitalization. Language immersion programs offer classes to parents in the Native language and provide language-rich programs for the whole family to participate in.

Native language immersion programs begin as early as infancy and typically go into the early elementary grades, while a few continue into the middle school grades. In Hawaii programs last through high school. In this presentation I define early childhood Native language immersion programs as those that begin at least by preschool. Within early childhood Native language immersion programs, many start at preschool and continue into the elementary grades. Other programs start with infants or toddlers in a child care setting, often described as a “language nest,” where the Native language is spoken exclusively by adults and children.

A number of Native language immersion programs have formed in North America in recent years. The concept was inspired by success with Maori language immersion programs (New Zealand), followed by successful Hawaiian language immersion programs. Maori language immersion programs have strengthened the base of Maori speakers and substantially increased the high school graduation rate among Maori children.³⁴

In Hawaii, children start in a “language nest” program called Punana Leo from ages three to five. Children who enter generally do not speak Hawaiian, but become quite fluent over the two years in the program.³⁵ Children then move into elementary schools where subject material is taught in Hawaiian, with English introduced as a subject in grade 5.

The Hawaiian immersion programs have found success in both Native language preservation and school achievement. In Hawaii, between the 1990 census and the 2000 census, those reporting some use of Hawaiian in the home grew from 14,315 to 27,160.³⁶ At the Nawahi School, where all subject material is taught in Hawaiian from kindergarten through grade 12, students outperformed Native Hawaiian students enrolled in English-medium classes on standardized tests. From the Nawahi School's first high school graduating class in 1999 through 2009, the school had a 100 percent high school graduation rate and an 80 percent college attendance rate.³⁷

The immersion programs in Maori and Hawaiian have also coincided with a strong resurgence of cultural practices and identity. In addition, language nest programs, preschools, and early elementary grades in Maori and Hawaiian programs include many more children whose first language is Maori or Hawaiian. In Fall 2009, almost 40 percent of children in the Nawahi School's language nest and kindergarten-through-grade-3 classrooms spoke Hawaiian as their first language.³⁸ Both Maori and Hawaiian language immersion programs benefited from a relatively large number of community members, proficient speakers, and institutional support compared with most Native American communities in North America that have smaller communities and numbers of speakers. Nevertheless, the programs provide strategies and models helpful to emerging Native language immersion programs.

Janine Pease-Pretty on Top's report, *Native American Language Immersion: Innovative Native Education for Children & Families*, highlights a dozen established language immersion school-age programs in Native communities within the United States as of 2003, representing a diverse set of languages and geographies. Based on my review of recent articles and papers, several more language immersion schools have been added since 2003, as well as language nest programs for infants, toddlers, and preschoolers. Here are a few examples.

One of the immersion schools highlighted in the report is the Waadookadaading Ojibwe Language Immersion School in Hayward, Wisconsin, which Brooke Ammann, school director, will discuss in a few minutes. The program starts with preschoolers at age three and provides language immersion education through grade 6.

The Four Directions Family Center in the Phillips neighborhood of Minneapolis, in partnership with The Wicoie Nandagikendan program, provides immersion experiences for children in an Ojibwe language classroom and a Dakota language classroom. The center is recognized as high-quality, as it is accredited by the National Association for the Education of Young Children and received the highest rating in Minnesota's child care quality rating system. An assessment of the program shows that children are making progress on Native language skills and scored better than children at the center in English-medium classrooms in 3 out of 4 years.³⁹

Lakota Language Immersion Childcare in Oglala, S.D., on the Pine Ridge Reservation, admits a cohort of 5 children younger than age two each year into its program and currently serves 15 children. The goal

is to develop curriculum into the early grades so each cohort can continue to learn subjects through Lakota. Program administrators note that children who have been in the program for over a year are beginning to demonstrate real comprehension of the language.⁴⁰

Financial sustainability is a challenge for many immersion programs. For preschool through grade school or high school programs, funding sources include public school funding, federal sources, and private sector funding.⁴¹ The charter school structure can be a source of funding but requires receiving a competitive grant and meeting requirements for renewal periodically. Federal funding streams are either not particularly supportive of the Native immersion model, or—if they are, such as grants from the Administration for Native Americans (ANA)—often time-limited. Foundations provide funding to support some programs, but pressing needs in Native communities compete for private sector funding and other tribal resources.

Language nest programs generally don't qualify for funding streams that typically fund K-12 programs, since children are usually younger than kindergarten age. Language nest programs qualify for ANA grants, which can help programs get started. Families with participating children may qualify for a state child care subsidy; however, failure to meet parental employment or education enrollment requirements can put eligibility at risk. State preschool programs and Head Start and Early Head Start (federal funding) can be resources for programs. Whether a Native language immersion program or a high-quality early learning program taught through the majority language, having access to available funding streams is critical to ensure young children in Native communities have access to high-quality early learning programs.

School preparation, economic opportunity, and language preservation

Research and experience with early childhood Native language immersion programs to date suggests that when implemented with sufficient resources and high quality, early childhood language immersion programs support the three goals of preparing children for school, developing future workforce skills, and preserving Native languages. Program quality is key to achieving these benefits, including well-prepared teachers, age-appropriate ratios of children to teachers, a curriculum to guide instruction, and engaged parents. Developing education programs to train teachers in the Native language and effective pedagogy is essential for successful immersion programs. And financial sustainability is critical to provide quality programs and continuity of services for children.

First, high-quality early childhood Native language immersion programs can help children gain the cognitive, social-emotional, and executive function skills they need to succeed in school. These programs can help buffer the impact of toxic stress for children who are subject to early adversity and reduce the need for remedial programs later in a child's life. Research shows that learning a Native language through a partial or full immersion program doesn't impair children's acquisition of the majority language, and there are likely benefits, as the early years are a sensitive period for language acquisition. Dual language speakers may also benefit from strengthening some executive function skills.

In addition, research and practice suggest communities have some flexibility in structuring programs relative to their goals and children's background, particularly in how much content is taught through the Native language and at which ages. Native language immersion programs also have the promise to strengthen families in their connection to language and culture as parents engage in language learning and in their children's education.

Second, when children begin school with the skills to succeed, they are more likely to graduate from high school, earn additional education, and find a well-paying job. Demographic trends show that the growth in the U.S. working-age population is expected to slow as the baby boom generation retires.⁴² This means children entering the school system today will likely enter a future labor market with a high need for workers with strong skills. Getting off to a strong start will enable today's youngest tribal members and communities to actively participate in future economic development opportunities.

Third, early language immersion supports the goal of increasing the number of Native language speakers. Not only do children begin to learn a Native language during a sensitive period for language acquisition, their parents and other community members are engaged to help support children's language learning. Language immersion programs also pass on Native culture and practices to the next generation. Communities with long-standing language immersion practices have demonstrated success in teaching language and culture to children, such as Maori in New Zealand and Hawaiian in Hawaii.

Finally, all of these goals are mutually attainable. Succeeding in one area can support the other two.

I look forward to continuing to participate in further discussions with Native community leaders and scholars about early childhood Native language immersion programs. Also consider the Community Development function of the Federal Reserve, as well as the Minneapolis Fed's upcoming Center for Indian Country Development, resources as you plan for your community's future.

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