

Backgrounder

No. 1884
October 5, 2005



Published by The Heritage Foundation

How Immigration Reform Could Help to Alleviate the Teacher Shortage

Kirk A. Johnson, Ph.D.

Before each new school year, there is a predictable barrage of news stories lamenting the lack of qualified public school teachers, especially in the hard-to-fill areas of math and science. This year, math and science teacher shortages have been reported across the nation, from Alabama to Nevada and from Texas to Utah.

There are a number of potential ways to increase the supply of math and science teachers, but one solution in particular shows great promise: recruiting English-speaking math and science teachers from abroad by expanding the H-1B visa program. Such a strategy would have a number of benefits:

- More children would be taught by qualified teachers with degrees in the subject matter, which is particularly important at the junior high and high school levels.
- Immigrant teaching contracts could be structured to give local districts more stability and flexibility in their teaching corps.
- Foreign public school teachers operating under the H-1B visa program would represent a relatively low security risk compared to other immigrants because they would be integrated into an existing accountability system involving principals, superintendents, and school boards.

The Problem

The reported shortage of math and science teachers is not a new problem, and it is not localized in a handful of random areas. Indeed, this is a persistent issue

Talking Points

- This school year began with the predictable barrage of stories on the shortage of available math and science teachers.
- The reported shortage of math and science teachers is not a new problem, and it is not localized in a handful of random areas. Indeed, this is a persistent issue that has been reported on an annual basis throughout the United States.
- According to one report, about one-third of math teachers and about 20 percent of science teachers in grades 7–12 do not have a major or minor in their respective fields.
- Relaxing the H-1B program cap, which allows foreign professionals to work in the United States, could put more and better teachers into the classroom. The current cap of 65,000 H-1B visas per year is well below the FY 2003 cap of 195,000.

This paper, in its entirety, can be found at:
www.heritage.org/research/education/bg1884.cfm

Produced by the Center for Data Analysis

Published by The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002-4999
(202) 546-4400 • heritage.org

Nothing written here is to be construed as necessarily reflecting the views of The Heritage Foundation or as an attempt to aid or hinder the passage of any bill before Congress.

that has been reported on an annual basis throughout the United States. The issue has become more pressing in recent years because of the requirements for “highly qualified” teachers under the No Child Left Behind Act.

A smattering of quotes from recent news articles outlines the problem:

- *Alabama*: “Officials said they’ll hire so-called ‘long-term substitutes’ for the teaching slots that they don’t fill by the first day of class.”¹
- *Texas*: “Texas schools are experiencing the repercussions of a math teacher shortage, state officials say.” “They [school districts] cannot find math and science teachers.”²
- *Utah*: “A teacher shortage has been forecast for years. A couple of years ago, some districts started school with substitutes and a few unmanned classes. And right now, there aren’t enough math, science, special education and English-as-a-second-language teachers to go around, state reports show.”³
- *Nevada*: “Substitutes will replace a shortfall of about 500 teachers in specialty areas when students begin pouring into Clark County School District classrooms in late August.”⁴

While some researchers have questioned whether the overall teacher shortage in the United States is simply a function of the “revolving door” (i.e., teachers simply changing jobs between teaching posts from one year to the next),⁵ growing evidence suggests that there is an actual shortage of math and sci-

ence teachers to fill open positions. In 2002, the National Research Council suggested that the shortage is so daunting that individuals with Ph.D.s should be recruited into elementary and secondary classrooms to teach these technical subjects.⁶

While there are a number of potential reasons for the shortage, one of the more plausible is economic: In the market for individuals with math and science skills, the teaching profession generally does not compensate as competitively as other fields. Even after adjusting for the additional time off for summer vacation, entry-level pay for technical math and science teachers can lag behind the entry-level pay for technical disciplines in the private sector. A recent editorial by *The Indianapolis Star* put it bluntly: “A drug company chemist earning \$60,000 a year would be reluctant to take a \$32,000-a-year entry-level teaching job.”⁷

Alleviating the Shortage

What can be done to increase the supply of math and science teachers? One strategy is to increase teaching compensation through incentive pay and thereby lure current math and science professionals away from business and industry. However, the union-based contracts found in many public school districts typically do not allow incentive pay.

Frustration with rigid teaching contracts prompted former IBM chief executive officer Louis V. Gerstner, Jr., to write:

The heart of the problem is the arcane way we recruit and prepare teachers, along with

1. Rena Havner, “Teacher Shortage Troubles Schools,” *Mobile Register*, August 5, 2005, at www.al.com/news/mobileregister/index.ssf?/base/news/112323352724160.xml&coll=3 (September 23, 2005).
2. Kelly Melhart, “7 NE Tarrant Schools Miss Benchmark,” *Star-Telegram* (Ft. Worth), August 12, 2005, at www.dfw.com/mld/dfw/news/12368041.htm (September 23, 2005).
3. Jennifer Toomer-Cook, “School Chiefs Seek Funds to Keep Teachers: Administrators Aim to Stave Off a Shortage of Good Educators,” *Deseret News*, July 21, 2005, at deseretnews.com/dn/view/0,1249,600150034,00.html (September 23, 2005).
4. Antonio Planas, “Teacher Shortage: School District in ‘Crisis,’” *Las Vegas Review-Journal*, July 28, 2005, at www.reviewjournal.com/lvrj_home/2005/Jul-28-Thu-2005/news/26953934.html (September 23, 2005).
5. Richard M. Ingersoll, “Is There Really a Teacher Shortage?” University of Washington, Center for the Study of Teaching and Policy, September 2003, p. 11.
6. National Research Council, *Attracting Ph.D.s to K–12 Education: A Demonstration Program for Science, Mathematics, and Technology* (Washington, D.C.: National Academies Press, 2002).
7. Andrea Neal, “It All Adds Up: Financial Incentives Will Lure Teachers,” *The Indianapolis Star*, July 13, 2005, p. A12.

The H-1B Program

H-1B visas allow highly skilled foreign workers—such as computer specialists, physicians, and teachers—to work in America for a fixed period, usually three to six years. A number of regulations govern H-1B visas. Chief among them are:

- The worker must be sponsored by a U.S. company, which must pay a fee to the federal government, and
- The worker must be paid wages that similar workers would be paid in the labor market.

The H-1B visa program is remarkably popular. For fiscal year (FY) 1999, Congress increased the H-1B visa cap, the maximum number of H-1B visas authorized under the law, from 65,000 to 115,000. The cap then increased to 195,000 in FY 2001. The law specified that the cap remain at that level until FY 2004, at

which time it returned to its previous level of 65,000.¹

In FY 2004, the 65,000 H-1B visa cap was reached by mid-February, not quite halfway into the fiscal year. In FY 2005, the cap for the entire year was met on October 1, 2004, the first day of the new fiscal year, meaning that no more specialty occupation visas could be issued for the next 12 months.² Congress subsequently increased the number of H-1B visas by 20,000, but only for individuals who have master's degrees from a U.S. university.

The situation has been even worse since then. On August 12, 2005, the U.S. Citizenship and Immigration Service (USCIS) announced that it had already received enough H-1B applications for FY 2006, which begins October 1, 2005, and would not be accepting any more applications for the general-selection lottery.³

1. Editorial, "America Needs More, Not Fewer, Workers from Overseas," *The Wall Street Journal*, August 26, 2005, at www.opinionjournal.com/editorial/feature.html?id=110007166 (September 23, 2005).
2. For more on the H-1B program, see Kirk A. Johnson, "Insource More Jobs by Raising the H-1B Visa Cap," Heritage Foundation *WebMemo* No. 585, October 13, 2004, at www.heritage.org/Research/Labor/wm584.cfm.
3. Press release, "USCIS Reaches H-1B Visa Cap," U.S. Department of Homeland Security, U.S. Citizenship and Immigration Service, August 12, 2005, at uscis.gov/graphics/publicaffairs/newsrels/H-1Bcap_12Aug05.pdf (September 23, 2005).

the lockstep single salary schedule—which says a teacher equals a teacher equals a teacher, no matter how desperately society may need a certain skill set and no matter how well a teacher performs in the classroom. That's senseless, yet it's still the norm in the teaching profession.⁸

While an incentive pay policy could be worth pursuing, implementing such a change would require renegotiating thousands of individual school district contracts, which would take a long time. Another strategy would be to provide more incentives for current and future college students to

train for math or science teaching careers. However, this strategy would not provide immediate relief because training a new teacher typically takes four to six years.

A third strategy would consist of recruiting qualified English-speaking math and science teachers from abroad via the H-1B visa program. This is not a new strategy. Many public school districts have used it in recent years. One estimate suggests that as many as 10,000 foreign teachers are currently working in the United States.⁹

Fast-growing areas such as the Las Vegas area have a very high demand for new teachers. In order

8. Louis V. Gerstner, Jr., "Math Teacher Pay Doesn't Add Up" *The Christian Science Monitor*, December 13, 2004, p. 9.

to fill this growing need, Las Vegas will be bringing in a large number of math and science teachers from abroad this academic year.¹⁰ Other school districts, such as Dallas, are recruiting outside the United States to meet specific teaching needs.¹¹

While the government typically does a poor job of gauging market demand for international labor, the level of demand suggests that increasing the number of visas issued to the FY 2003 level of 195,000 would be an appropriate initial step. Local school districts could then draw on the experience of the pioneering districts that have successfully recruited teachers through the H-1B program in the recent past.

In light of the math and science teacher shortage, this strategy makes a great deal of sense from a policy perspective for three reasons:

1. More children will be taught by qualified individuals with subject-matter degrees, which is particularly important at the junior high and high school level. According to one report, about one-third of math teachers and about 20 percent of science teachers in grades 7–12 do not have a major or minor in their respective fields.¹² A large corpus of research indicates that subject-matter knowledge is key when teaching technical subjects, and secondary students tend to perform better on standardized tests when they are taught by a teacher who has a degree in the subject being taught.¹³
2. Immigrant teaching contracts could be structured to give local districts more stability in their teaching corps. H-1B visas are typically issued for three years and can be renewed once for another three years. Since working through the H-1B application process is an expensive and time-consuming activity for the employer, the employing school district would want to ensure that the time and effort spent on international recruitment is worthwhile. Therefore, an individual school district could structure its teaching contracts for three years, eliminating the possibility of moving to another school district or employer without compensation.¹⁴
3. As with any immigrant, there is always a security risk; however, immigrant public school teachers represent a very low risk for a number of reasons. First, as public employees, their day-to-day actions would be more highly scrutinized than the actions of typical private-sector employees. All public school teachers are supervised by a principal and/or other administrative staff at the school. Additionally, a new teacher is often paired with a more senior “mentor” teacher, who provides additional oversight. All of the foreign teachers are ultimately accountable to superintendents and school boards. Because of these multiple levels of oversight, it would be difficult for a teacher to conceal ties to terrorist organizations or other security concerns. Furthermore, terrorists are unlikely to use this method to gain entrance into the United States because of the time and effort involved in learning math, science, and English.

9. Randy Barber, *Report to the National Education Association on Trends in Foreign Teacher Recruitment*, Center for Economic Organizing, June 2003, p. 1, at www.nea.org/teachershortage/images/foreignteacher.pdf (September 23, 2005).

10. Planas, “Teacher Shortage: School District in ‘Crisis.’”

11. Vanessa Salinas, “Many to Hit Books This Summer, Lead DISD Classrooms This Fall: Dallas Teaching Program Recruits, Trains Spanish Speakers from Abroad,” *Dallas Morning News*, June 1, 2005, p. B5.

12. Richard M. Ingersoll, “The Problem of Underqualified Teachers in American Secondary Schools,” *Educational Researcher*, Vol. 28, No. 2 (March 1999), pp. 26–36.

13. For example, see Linda Darling-Hammond, *Teacher Quality and Student Achievement: A Review of State Policy Evidence* (New York: Center for the Study of Teaching and Policy, 1999), and Kirk A. Johnson, Ph.D., “The Effects of Advanced Teacher Training in Education on Student Achievement,” Heritage Foundation *Center for Data Analysis Report* No. 00–09, September 14, 2000, at www.heritage.org/Research/Education/CDA00-09.cfm.

14. Naturally, the immigrant teacher would want some provision in the contract to allow the teacher to return home and be released from the contract in the case of family emergency or some other bona fide reason.

4. Finally, because of the close oversight, these teachers are much less likely to overstay their visas as compared to foreign workers in other occupations.

Immigration and Flexible Labor Markets

While the current math and science teacher shortage is a compelling reason to relax the H-1B visa cap, the program should not be limited to math and science teachers. Immigration policy in the United States should be flexible, designed to respond to the needs of the U.S. labor market rather than those of preferred industries or occupations. Instead of limiting any expansion of the H-1B visa cap to specific occupations, Congress should allow the marketplace to determine which occupations are in demand.

For example, during the computer technology boom in the late 1990s, more than half of the H-1B visas were awarded to computer-related occupations. However, after FY 2001, there was a dramatic shift away from computer occupations in favor of the sciences (health, life, and social) and education. The proportion of H-1B petitions for computer-related occupations dropped from 58 percent in FY 2001 to 38.3 percent in FY 2002. During the same period, H-1B petitions granted for education occupations increased from 5.3 percent to 10.5 percent.¹⁵

While there is a current need for more math and science teachers, this may not always be the case. Indeed, the looming retirement of the baby boomers will likely increase demand for health-related occupations. The proportion of H-1B visas for health and medical workers more than doubled from 3.4 percent in FY 2001 to 7.2 percent in FY 2003.¹⁶

Ideally, Congress should allow the H-1B program to continue to respond flexibly to U.S. labor markets.

Opposition to Increasing the H-1B Cap

Even though raising the H-1B cap would fill an obvious need, organizations such as the Institute of Electrical and Electronics Engineers (IEEE-USA) have consistently opposed such a policy.¹⁷ Generally speaking, the IEEE-USA worries that bringing in cheaper labor in the form of more foreign workers could displace U.S.-born workers.

Even ignoring the fact that the basic foundation of this argument is debatable, the argument itself is wholly without merit for two basic reasons.

First, there is a real shortage of teachers in the technical areas of math and science, and teachers with less content knowledge are too often teaching these subjects.

Second, most public school teachers work under some sort of collective bargaining agreement that includes a standard pay scale for all teachers, with teachers paid based on their years of experience and levels of education. Therefore, an immigrant teacher brought in under the H-1B program would earn the same amount as a U.S. citizen teacher. If anything, schools have a small incentive to hire a U.S. teacher over a foreign teacher because of the additional time and expense involved in overseas recruitment through the H-1B visa program.

What Congress Should Do

To help address the shortage of math and science teachers, among other reasons, Congress should:

- **Expand** the H-1B visa program from 65,000 to 195,000 visas per year (the level in FY 2003) and

15. U.S. Department of Homeland Security, Office of Immigration Statistics, "Characteristics of Specialty Occupation Workers (H-1B): Fiscal Year 2002," September 2003, p. 14. Notably, most of the education workers brought to the United States via the H-1B program are actually college or university faculty, but both the proportion of college faculty and the proportion of K-12 teachers doubled between FY 2001 and FY 2002. In FY 2003, one out of every nine H-1B workers (11.1 percent) was a teacher at the K-12 or college level.

16. U.S. Department of Homeland Security, Office of Immigration Statistics, "Characteristics of Specialty Occupation Workers (H-1B): Fiscal Year 2003," July 2004, p. 13, and "Characteristics of Specialty Occupation Workers (H-1B): Fiscal Year 2002," September 2003, p. 14.

17. For their position statement, see Institute of Electrical and Electronics Engineers, "The H-1B Visa," February 2003, at www.ieeeusa.org/policy/positions/h1b.html (September 23, 2005).

- **Not limit** the increase to any specific profession, thereby allowing the program to continue to respond quickly to any shifts in demand in the labor market.

Conclusion

Each new academic year, public school districts face the daunting task of recruiting adequate numbers of teachers in hard-to-fill specialties such as math and science. Congress can help to alleviate this problem by expanding the H-1B visa program, which would allow schools to recruit larger numbers of qualified teachers from abroad.

Research shows that student achievement is driven by a number of factors that are not easily affected directly by the schools. Increasing teacher subject-matter knowledge, however, is a way for school districts to affect students in a positive and measurable way. Policymakers should focus on making sure that students are taught by quality teachers, which means that math and science teachers should have backgrounds and/or degrees in these subjects. Recruiting quality, English-speaking teachers from abroad is one way to achieve this goal.

—Kirk A. Johnson, Ph.D., is a Senior Policy Analyst in the Center for Data Analysis at The Heritage Foundation.