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Teacher Supply and Demand: Surprises from Primary Research

Andrew J. Wayne
University of Maryland

Abstract
An investigation of primary research studies on public school teacher supply and demand revealed four surprises. Projections show that enrollments are leveling off. Relatedly, annual hiring increases should be only about two or three percent over the next few years. Results from studies of teacher attrition also yield unexpected results. Excluding retirements, only about one in 20 teachers leaves each year, and the novice teachers who quit mainly cite personal and family reasons, not job dissatisfaction. Each of these findings broadens policy makers' options for teacher supply.

With teacher quality atop local, state, and federal agendas, the body of policy research that addresses teacher quality is very much in the spotlight. Hopefully some of the knowledge generated by researchers can prove helpful to policy makers.

But to a surprising extent, the research community is not offering policy makers much that they can use. The policy researchers who shape public understanding of the

teacher quality issue are now making considerable efforts to challenge each other's work (e.g., Ballou and Podgursky, 1999, 2000; Darling-Hammond, 1999). Although that debate will have salutary effects over the long-term, the short-term outlook for lay audiences is confusion over whom to trust.

This article attempts to make progress by focusing on questions whose answers depend on more broadly understood analytic tools. It focuses on teacher supply and demand—only one part of the teacher quality story. But knowledge about supply and demand can help policy makers, and the requisite analytic tools are so simple that disagreement is unlikely.

My examination of the knowledge base on the supply and demand of public school teachers led to several surprises. Rather than summarize all that is known, what follows focuses on those points where the common wisdom is wrong. Each of the four sections below contrasts what primary research studies say with what policy makers hear about supply and demand.

The original studies come from long-term federal investments in survey research, overseen by the National Center for Education Statistics (NCES). The NCES is regarded as the most authoritative source of national evidence on teacher supply and demand. Its survey methods and analyses are thoroughly documented, and all of its documents are publicly available at www.nces.ed.gov.

Enrollments are Leveling Off

Close examination of NCES projections reveals that enrollments are leveling off. Mischaracterizations of these projections are very common. A recent RAND publication referred to "a dramatic increase in enrollments" over the next decade (Kirby, Naftel, and Berends, 1999, p. 1). Combined with teacher retirements, says a U.S. Department of Education document, these enrollment increases spell a "demographic double-whammy" for the schools (U.S. Department of Education, 1998, p. 2).

The NCES counts students every year. Actually school districts do the counting and report their findings to state governments who, in turn, report numbers to the NCES. The error-checking and compilation process is somewhat time-consuming, so the most recently reported count was for 1998.

Those counts show that from 1988 to 1998 enrollments rose 16 percent. Contrast that with what the future holds. According to NCES's analyses, from 2000 to 2005 enrollments should rise only one percent, and from 2005 to 2010 enrollment should decline, though perhaps negligibly. Census Bureau population projections undergird these estimates (Gerald and Hussar, 2000, p. 12).

In other words, the best available projection is that a school with 1000 students today will have about 1010 students *five years from now*. The Census Bureau can botch immigration assumptions (Ahlburg, 1993), and, to be sure, national averages are no guide for state policy makers. From 1990 to 1996, for example, elementary enrollment dropped about six percent in West Virginia and North Dakota, while it increased about 15 percent in California and New Jersey (Gerald and Hussar, 1998, p. 109). But if policy makers expected a wave of children to deluge the nation's schools, they were misled. Keeping enrollment increases in perspective this way helps policy makers understand their options. If the projections are roughly correct, the teaching force will hardly need to grow at all. The only growth will derive from declines in pupil-teacher ratios.

Hiring Will Increase, On Average, Two Percent Per Year Over the

Next Decade

It is true that a wave of retirements is about to hit (Hussar, 1999, p. 10). Policy makers are hearing that these retirements—combined with already high attrition rates—will drive hiring needs through the roof. How big is the crunch?

For some reason journalists, academics, policy wonks, and interest groups offer only an ambiguous answer: the nation will need to hire 2.2 million public school teachers over the next decade. This ten year total—admittedly from NCES analyses—does nothing to help policy makers gauge the problem; they would need to know the number hired in the past decade for comparison. In most contexts the figure just imparts urgency or draws attention to someone's proposal. Ironically, a closer read of the NCES projections would permit an even more captivating ten year total—2.5 million—given predictable drops in the pupil-teacher ratio (Hussar, 1999, p. 35).

A much more helpful characterization of hiring needs is possible. The 2.5 million figure is actually the sum of all *annual hiring* for the next ten years. NCES projection models predict that annual hiring will rise from 218,000 in 1999-2000 to 261,000 in 2009-10. During that period, the early increases will somewhat outpace the later ones (Hussar, 1999, p. 35). Thoughtfully developed assumptions about enrollments, pupil-teacher ratio changes, and teacher attrition drive the projections, but no one would be surprised if the estimates proved wrong by 15,000 hires in either direction.

Because no one explains NCES projections in terms of annual hiring, policy makers' informants routinely slip up. A prominent foundation referred to "the projected shortage of 2.2 million teachers" (Milken Family Foundation, 1999). The more common misinterpretation is that the nation's teacher preparation institutions must *train* over two million teachers. Not so. At last count, experienced teachers constituted over one quarter of annual hiring (Hussar, 1999, p. 7).

What should the research community tell policy makers? Projections lose accuracy quickly with time, so our message ought to be that the next few years probably hold annual hiring increases of two to three percent. That is about all we can say, for our guesses about how hard the additional hiring will be are probably no better than policy makers'.

Excluding Retirements, About One in 20 Teachers Leaves Each Year

With all the hyperbole, a reasonable legislator might guess that one in four teachers drops out of the profession every year. The hallmark of the teaching profession, they are told, is the "revolving door." John Merrow—a prominent and respected education journalist—recently analogized it to "a swimming pool with a serious leak" and drew the conclusion for policy makers: "We're misdiagnosing the problem as 'recruitment' when its really 'retention'." (Merrow, 1999)

The actual data provide a different perspective. The NCES followed a national sample of over 4,500 teachers from the 1993-94 school year. Only about seven percent of them were not teachers in the 1994-95 school year, and two of the seven percent were retirees (Henke et al., 1997, p. A-248). That means that excluding retirements, only about one in 20 teachers leaves each year. And many of these people will return to teaching.

Where the same vivid metaphors are applied to beginning teachers, they still leave the wrong impression. Attrition among teachers with less than four years experience is about nine percent per year (Henke et al., 1997, p. A-248). Admittedly, this adds up. Multiply by four, and it appears that over one-third of a beginning cohort will not begin

a fifth year. But does this distinguish teaching from other professions? A recent Public Agenda Survey found the opposite to be true. Only 19 percent of beginning teachers reported expecting to change careers, while fully half of college graduates under 30 years of age made the same claim (Farkas, Johnson, and Foleno, 2000, p. 11).

Even low-income schools within urban areas exhibit manageable overall attrition rates: 5.7 percent according to the best tabulation of NCES data (Ingersoll, 1999, p. 22). This figure raises serious questions about the assumptions that currently guide efforts to improve teacher quality for low-income students.

It helps to distinguish between teacher attrition and teacher mobility. The discussion above focused on the former, but just as many —if not more—teachers change schools every year as leave them. Add in teachers who change assignments, and over one in four teachers changes status somehow every year (Boe et al., 1998, p. 10). Needless to say, conflating these phenomena would not help decision-makers address supply and demand.

Novice Teachers Who Quit Rarely Cite Job Dissatisfaction

Evidence notwithstanding, many prefer to assume that novice teachers 'leave in droves' and offer explanations. The Director of the National Foundation for the Improvement of Education recently did so: "Why do they drop out? It's mainly because nobody's taking care of them" (Marklein, 1999, p. 6). Another explanation policy makers hear is that "substandard training fails to prepare teachers for the demands of the classroom" (Merrow, 1999).

Via confidential surveys, the NCES asked teachers who left what the main reason was for their departure. Among departing teachers with less than four years experience, 17 percent left involuntarily, mostly due to staffing actions. Another 12 percent left to take courses. Only eight percent marked "dissatisfied with teaching as a career," though another 17 percent left mainly "to pursue other work or better salary" (Boe et al., 1998, p. 32).

The missing group: 44 percent of the beginning teachers who left cited personal and family reasons (Boe et al., 1998, p. 32; see also Henke et al., 1997, p. A-255). It's possible that many enter teacher education programs precisely because the profession allows for commitment to family responsibilities. Summer work is definitely optional, and recruiters do not frown on long periods of unemployment.

So if the teaching profession "eats its young," it eats only a few. Doing the math above, dissatisfaction and competing careers explain on the order of only one quarter of novices' departures.

Figures like these give real perspective on the policy options for teacher supply. They debunk the exaggerations policy makers currently hear, that attrition among novices is and will remain unbearably high *until* (1) schools become more supportive working environments or (2) universities prepare teachers for real classrooms. No doubt those factors matter, but the real numbers show state and federal policy makers that substantial leverage is possible via the blunt instruments before them. Perhaps a twelve-month calendar—and concomitant salary increases—would draw the mainstream labor market into schools. Given good information, we know not to ignore such options.

Conclusion

My investigation of primary research studies on public school teacher supply and demand revealed four major surprises. Basic survey research and demography contradict

what many say about enrollments, hiring needs, attrition, and the loss of novice teachers. If my interpretations are not correct, hopefully the research community will arrive at better answers reasonably quickly.

Readers should beware that although the discussion above employed the best available evidence, much of it relied on a national survey last conducted in the 1993-94 school year. State level investigations may turn up different results. Furthermore the 2000 Census and a new NCES survey of the nation's teachers are both underway and may yield important course corrections.

But the contrast—between what our primary research studies say and what policy makers hear—imparts a lasting message for the researchers and analysts concerned with teacher quality. What inhibits policy makers' utilization of the research base on teacher supply and demand is not lack of research, nor is it disagreements whose resolution requires more technical sophistication than policy makers have. Instead, the problem is neglect. When distortions arise, whether by mistake or because of interest group politics, it is the research community that is supposed to correct them.

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About the Author

Andrew Wayne

Andrew Wayne is a doctoral candidate in social policy at the University of Maryland, College Park. His forthcoming dissertation is entitled *Federal policies to improve teacher quality for low-income students.*

Update: June 2001
Andrew Wayne works at SRI International in the Center for Education Policy. He can be reached at (703) 247-8491 or by Email: wayne@wdc.sri.com

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of Education, Arizona State University, Tempe, AZ 85287-0211. (602-965-9644). The Commentary Editor is Casey D. Cobb: casey.cobb@unh.edu .

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