



The Problem of Out-of-Field Teaching

By Richard M. Ingersoll

The real cause of the problem of out-of-field teaching, in Mr. Ingersoll's view, is U.S. society's lack of respect for the complexity and importance of the job.

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FEW ISSUES in our elementary and secondary schools are subject to more debate and discussion than the quality of teachers. Over the past decade, dozens of studies, commissions, and national reports have bemoaned our failure to ensure that all our nation's classrooms are staffed with qualified teachers. In turn, reformers in many states have pushed tougher licensing standards for teachers and more rigorous academic requirements for teaching candidates. Moreover, a whole host of initiatives and programs have sprung up for the purpose of recruiting new candidates into teaching. Among these are programs designed to entice midcareer professionals from other fields to become teachers; alternative certification programs, whereby college graduates can postpone formal education training, obtain an emergency teaching certificate, and begin teaching immediately; and Peace Corps-like programs, such as Teach For America, that are designed to lure the "best and brightest" into understaffed schools.

There have also been interest and action at the federal level; a key goal of President Clinton's 10-point educational "Call to Action" is to ensure that all our nation's elementary and secondary students are taught by "talented and trained teachers." To this end, Clinton has, for example, recently proposed a major initiative to recruit and train thousands of new teachers to serve in low-income schools.

However, although seeing that all our nation's classrooms are staffed with qualified teachers is among the most important issues facing our schools, it is also among the least understood. Like many similarly worthwhile reforms, these recent efforts alone will not solve the problems of underqualified teachers and poor-quality teaching because they do not address some of their key causes.

One of the least recognized of these causes is the problem of out-of-field teaching: teachers being assigned to teach subjects that do not match their training or education. Recruiting more teachers and mandating more rigorous coursework and certification requirements will help little if large numbers of teachers continue to be assigned to teach subjects other than those for which they were educated or certified.

One of the reasons for the lack of awareness of this problem has been an absence of accurate data on the subject

-- a situation remedied with the release, beginning in the early 1990s, of the *Schools and Staffing Survey*, a major survey of the nation's elementary and secondary teachers by the National Center for Education Statistics (NCES) of the U.S. Department of Education. Over the past several years, I have undertaken a research project, partly funded by NCES, that used data from this survey to determine how much out-of-field teaching goes on in this country and why.¹

My interest in this project originally stemmed from my previous experiences as a high school teacher, first in western Canada and later in Pennsylvania and Delaware, near where I had grown up. The job of teaching, I found to my surprise, differs greatly in Canada and in the U.S. One of the major differences, I quickly discovered, was out-of-field teaching. In the Canadian schools in which I taught, misassignment was frowned upon and a rare occurrence. In contrast, out-of-field teaching was neither frowned upon nor rare in the high schools, both public and private, in which I taught in the U.S. My field was social studies, but hardly a semester went by in which I was not assigned a couple of classes in other fields, such as math, special education, or English. Teaching a subject for which one has little background or interest is challenging, to say the least. It is also, I have come to believe, very detrimental to the educational process.

My experiences left me with a number of questions. Were the schools in which I taught unusual in this regard? Or was out-of-field teaching a common practice in other schools across the country? If so, why? Later, after leaving secondary teaching and completing a doctorate, I got the opportunity to investigate these questions in a large-scale research project.

The findings of this research have shocked many and have captured widespread interest. Notably, the findings have also been replicated. Several other researchers have conducted statistical analyses of the Schools and Staffing Survey and have reached the same conclusion -- that there is an alarming level of underqualified teaching in American high schools. Over the past couple of years, the problem of out-of-field teaching has suddenly become a real concern in the realm of education policy and has been widely reported in the national media. My research has been featured in several major education reports, including those issued by the National Commission on Teaching and America's Future and *Education Week's* special supplement Quality Counts. It has even been cited by President Clinton in support of his initiative on teacher training and recruitment for low-income schools. I have been invited to speak on out-of-field teaching to numerous groups and forums, including the Congressional Hearings on Teacher Policy held by the House Committee on Education and the Workforce. However, despite a growing awareness of this problem and its importance, out-of-field teaching unfortunately remains widely misunderstood.

How Widespread Is Out-of-Field Teaching?

There is much controversy over how much and what kinds of training and education teachers ought to have to be considered "qualified." In my research I decided to skirt this debate by focusing on the most compelling case. I began by looking at whether teachers have a teaching certificate or license, but my primary focus quickly became discovering how many high school teachers do not have even minimal credentials -- either a major or a minor -- in their teaching fields. My assumption was that adequately qualified teachers -- especially at the high school level and especially in the core academic fields -- ought to have, as a minimum prerequisite, at least a college minor in the subjects they teach. Of course, some observers question the necessity of even this requirement and argue that a good, bright teacher should be able to teach anything, regardless of education or training. In contrast, my assumption was that, while knowledge of subject matter is not a sufficient requirement and does not, of course, guarantee high-quality teaching -- or even a qualified teacher -- it is a necessary prerequisite. In short, I assumed that few parents would expect their teenagers to be taught, say, 11th-grade trigonometry by a teacher who did not have a minor in math, no matter how bright the teacher. However, that situation is all too commonly the case.

For example, I found that almost one-third of all high school math teachers have neither a major nor a minor in math or in related disciplines such as physics, engineering, or math education. Similarly, the same proportion of math teachers do not have a teaching certificate or license in math. Almost one-fourth of all high school English

teachers have neither a major nor a minor in English, literature, communications, speech, journalism, English education, or reading education. The situation is even worse within such broad fields as science and social studies. Teachers in these departments are routinely required to teach any of a wide array of subjects that are outside their discipline but still within the larger field. As a result, almost half of all high school students enrolled in physical science classes (chemistry, physics, earth science, or space science) are taught by teachers without at least a minor in any of these physical sciences. Moreover, more than half of all secondary school history students in this country are taught by teachers with neither a major nor a minor in history. The actual numbers of students affected are not trivial. For English, math, and history, several million students a year in each discipline are taught by teachers without a major or minor in the field.

Out-of-field teaching varies greatly across schools, teachers, and classrooms. For instance, recently hired teachers are more often assigned to teach subjects out of their field of training than are more experienced teachers. Low-income public schools have higher levels of out-of-field teaching than do schools in more affluent communities. Particularly notable, however, is the effect of school size: small schools have higher levels of out-of-field teaching. There are also differences within schools. Lower-achieving classes are more often taught by teachers without a major or minor in the field than are higher-achieving classes. Junior high classes are also more likely to be taught by out-of-field teachers than are senior high classes.

No doubt some out-of-field teachers may actually be well qualified, despite their lack of a minor or major in the subject. Some may be qualified by virtue of knowledge gained through previous jobs, through life experiences, or through informal training. Others may have completed substantial college coursework in a field but not have gotten a major or minor. In Georgia, for instance, because school accreditation regulations require teachers to have at least 20 hours of college credit (about four courses) in a field in order to teach it, many of those in the state who are assigned to teach out of field probably do have some background.

However, my premise was that even a moderate number of teachers who lack the minimal prerequisite of a college minor signals the existence of serious problems in our schools. And out-of-field teaching is not an aberration; it happens in well over half of the secondary schools in the U.S. in any given year -- both rural and urban, affluent and low-income. Shifting the definition of out-of-field does not lessen the severity of the problem. Whether I looked at teachers without a major or minor or teachers without certification in their assigned fields, the numbers were similarly alarming. Indeed, when I upgraded the definition of a "qualified" teacher to include only those who hold both a college major and a teaching certificate in the field, the amount of out-of-field teaching substantially increased. Moreover, the problem does not appear to be going away: levels of out-of-field teaching changed very little between the late 1980s and the mid-1990s.

The negative implications of such high levels of out-of-field teaching are obvious. Is it any surprise, for example, that science achievement is so low, given that even at the 12th-grade level, 41% of public school students in physical science classes are not being taught by someone with either a major or a minor in chemistry, physics, or earth science? The crucial question -- and the source of great misunderstanding -- is why so many teachers are teaching subjects for which they have little background.

The Causes of Out-of-Field Teaching

Many people immediately assume that out-of-field teaching is a problem of poorly educated teachers and can be remedied by more rigorous standards for teacher education and training. I have found that news columnists seem especially prone to hold this view. In responding to the reports of research findings on out-of-field teaching, columnists have, almost invariably, assumed that the source of the problem lies in a lack of academic coursework on the part of teachers, and they have then concluded that the problem can be remedied by requiring prospective teachers to complete a "real" undergraduate major in an academic specialty.²

My own case provides an illustration of just how misleading this view can be. I graduated magna cum laude from the University of California with a bachelor's degree in sociology. Several years later, I returned to school to take part in an intensive yearlong teacher certification program in social studies. None of this background,

however, precluded me from later being assigned to teach out of my field of social studies on a regular basis.

The truth is that almost all teachers in the U.S. have completed a college education and half of them have graduate degrees. Moreover, 94% of public school teachers and, surprisingly, more than half of private school teachers hold regular state-approved teaching certificates. The source of out-of-field teaching lies not in the amount of education teachers have, but in the lack of fit between teachers' fields of training and their teaching assignments. Many teachers are assigned by their principals to teach classes that do not match their training or education.

The implications of this distinction for reform are important. There is no question that the teaching force could benefit from upgraded education and training and that education degrees should include substantial coursework in an academic discipline. This is the value of the ongoing efforts by many states to toughen entry criteria, enact more stringent certification standards, and increase the use of testing for teachers. However, though very worthwhile, none of these kinds of reforms will eliminate out-of-field teaching assignments. Hence, they alone will not solve the problem of underqualified teachers in our nation's classrooms.

Similar logic applies to two other related popular initiatives -- curricular revision and professional development for teachers. Hundreds of new curricular packages, products, and techniques are produced every year by educational organizations and publishers and are widely disseminated to teachers through inservice training and other programs. Familiarity with the most up-to-date materials in one's field of expertise is no doubt a good idea, but it provides little help if one is then assigned to teach a different subject.

A second widely believed explanation for out-of-field teaching assumes that the fault lies with teacher unions. A typical example of this thinking is found in Thomas Toch's *U.S. News & World Report* cover story, "Why Teachers Don't Teach: How Teacher Unions Are Wrecking our Schools."³ Toch used data from my research to support his attack on teacher unions and, in particular, their seniority rules. In his view, self-serving work rules promulgated by teacher unions are the main reason that classrooms are often staffed with out-of-field teachers. The use and abuse of such rules, according to Toch, is especially prevalent in times of teacher oversupply, when school officials face the need to cut or shift staff members as a result of fiscal cutbacks or declining enrollments. In such situations, "last-hired, first-fired" seniority rules require that more experienced teachers be given priority, regardless of their competence. As a result, so his argument goes, veteran teachers are often given out-of-field assignments, while junior staff members are transferred or laid off. Students suffer accordingly.

Nowhere in my research is there support for this explanation of out-of-field teaching. Indeed, the data suggest that the opposite is the case. Beginning teachers are more prone than experienced teachers to be misassigned, and both public and private schools with unions usually have less, not more, out-of-field teaching.

Union work rules certainly have an impact on the management and administration of schools, and, depending on one's viewpoint, this impact may be positive or negative. But eliminating teacher unions will not eliminate out-of-field teaching.

The most popular explanation of the problem of out-of-field teaching blames teacher shortages. This view holds that shortfalls in the number of available teachers, caused by a combination of increased student enrollments and a "graying" teaching force, have led many school systems to resort to lowering standards to fill teaching openings, the net effect of which is out-of-field teaching.

This last view is partly correct and partly incorrect. The data show that, consistent with the shortage predictions, demand for teachers has increased since the mid-1980s. Student enrollments have steadily increased, teacher retirements have steadily increased, an overwhelming majority of schools have had job openings for teachers, and the size of the teaching force has steadily increased. Most important, many schools, though not a majority, do report some degree of difficulty filling their teaching vacancies with qualified candidates. Finally, when faced with such difficulties, administrators say that they most commonly do three things: hire less-qualified teachers, assign teachers trained in another field or grade level to teach in the understaffed area, and make

extensive use of substitute teachers. Each of these coping strategies results in out-of-field teaching.

But it is a mistake to assume, as has been commonly done, that hiring difficulties and out-of-field teaching are the result of teacher shortages in the conventional sense of too few candidates available and willing to enter teaching. While it is true that student enrollments are increasing, the demand for new teachers is not primarily a result of these increases. The demand for new teachers comes about primarily because teachers choose to move from or leave their jobs at far higher rates than do those in many other occupations. And while it is true that teacher retirements are increasing, teacher turnover appears to have little to do with a graying teaching force. In contrast, the high rates of teacher turnover that plague schools are far more often a result of two related causes: teachers dissatisfied with teaching and teachers seeking to pursue another career.⁴

The implications of this fact for reform are important. Initiatives and programs designed to recruit new candidates into teaching, though worthwhile in many ways, will not solve the problem of underqualified teachers in classrooms if they do not also address the factor that, the data suggest, does lead to severe staffing inadequacies in schools: too little teacher retention. In short, recruiting more teachers will help little if large numbers of teachers continue to leave.

The data show, understandably enough, that inadequate support from the administration, low salaries, rampant student discipline problems, and little faculty input into school decisions all contribute to high rates of teacher turnover. Improving these conditions would decrease turnover, which would quickly eliminate the so-called shortages. It would also remove much of the need for out-of-field assignments in the first place.

An Alternative View

This points to what I have come to believe is a far more fundamental problem facing teaching and the real cause of the problem of out-of-field teaching. Unlike Canada and many European and Asian nations, the U.S. treats elementary and secondary school teaching as largely low-status work and teachers as semiskilled workers. Few would require cardiologists to deliver babies, real estate lawyers to defend criminal cases, chemical engineers to design bridges, or sociology professors to teach English. The commonly held assumption is that such traditional professions require a great deal of skill and training and that, hence, specialization is necessary. In contrast, the commonly held assumption is that teaching in elementary and secondary schools requires far less skill, training, and expertise.

Perhaps it is true that teaching may require less expertise than some other kinds of work. But those who have spent time in classrooms know that high-quality teaching requires a great deal of expertise and skill and that teachers are not like interchangeable blocks that can be placed in any empty slot regardless of their type of training. Indeed, the best contemporary research on the process of teaching has begun to illuminate the complex combination of art, craft, and science that good teaching is.⁵

It is the low status of teaching, exemplified by a lack of respect for the complexity and importance of the job, that has resulted in what the data tell us: that teaching is plagued by problems of recruitment and retention and that out-of-field teaching is not simply an emergency condition but a common practice in the majority of secondary schools in this country.

High rates of teacher turnover mean that schools are faced with a constant need to recruit and hire new teachers to fill vacated positions. Some schools have difficulty finding qualified candidates to fill their openings and some do not. But for all schools this is a time-consuming task. Many principals find that assigning teachers to teach out of their fields is, at times, simply more convenient and less expensive than the alternatives. For example, rather than hire a full-time replacement for a science teacher who quit just prior to the start of the fall term, a principal may find it faster to assign a couple of English and social studies teachers to each "cover" a section or two in science. When faced with the choice between hiring a fully qualified candidate for an English position or hiring a less-qualified candidate who is also willing to coach a major varsity sport, a principal may find it more convenient to do the latter. If a teacher suddenly leaves in the middle of a semester, a principal may

find it easier to hire a readily available, but not fully qualified, substitute teacher, rather than to conduct a formal search for a new teacher. These managerial choices may save time and money for the school, but they are not cost-free.

The implications for reform are clear. The way to make sure that there are qualified teachers in every classroom is not to assume that the problem stems from teacher unions or a deficit in the quality or quantity of teachers. The way to make sure that there are qualified teachers in every classroom is to upgrade the job of teaching. Well-paid, well-respected occupations that offer good working conditions rarely have difficulty with recruitment or retention. If they do, they do not resort to lowering standards as a coping mechanism. If we treated teaching as a highly valued profession, one that requires expertise and skill in a specialty, there would be no problem attracting and retaining more than enough excellent teachers. And there would be little problem ensuring that all classrooms were staffed with qualified teachers.

1. Detailed reports of my research on out-of-field teaching can be found in *Teacher Supply, Teacher Quality, and Teacher Turnover* (Washington, D.C.: National Center for Education Statistics, U.S. Department of Education, Report #95-744, 1995); and *Out-of-Field Teaching and Educational Equality* (Washington, D.C.: National Center for Education Statistics, U.S. Department of Education, Report #96-040, 1996). See also, "The Problem of Out-of-Field Teaching in American High Schools," *Educational Researcher*, forthcoming.

2. See, for example, the syndicated columns of David Broder, Thomas Sowell, and Maggie Gallagher for the week of 14-20 September 1996.

3. Thomas Toch, "Why Teachers Don't Teach: How Teacher Unions Are Wrecking Our Schools," *U.S. News & World Report*, 26 February 1996, pp. 62-71.

4. Detailed reports of my research on teacher turnover can be found in *Teacher Supply, Teacher Quality, and Teacher Turnover* and in an unpublished paper, "Teacher Turnover: An Organizational Analysis."

5. See, for example, Lee Shulman, "Those Who Understand: Knowledge Growth in Teaching," *Educational Researcher*, February 1986, pp. 4-14.

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Last updated 27 May 1998
URL: <http://www.pdkintl.org/kappan/king9806.htm>
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