



## Rejoinder:

# Misunderstanding the Problem of Out-of-Field Teaching

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The phenomenon of out-of-field teaching—teachers assigned to teach subjects for which they have little education or training—is an important, but long unrecognized, problem in schools. It is an important issue because highly qualified teachers may actually become highly *unqualified* when they teach subjects for which they have little background. This issue has long been unrecognized, however, largely due to an absence of accurate information about it—a situation remedied with the availability, beginning in the early 1990s, of new data on teachers.

Over the past decade, I have been undertaking research to determine how much out-of-field teaching goes on in this country and why. The results of this research, and also that of others, have generated widespread interest and, over the past couple of years, the problem of out-of-field teaching has become a prominent topic in the realm of educational policy and reform. Unfortunately, in spite of all the interest and attention, this problem remains largely misunderstood. In an article published in *Educational Researcher* in March 1999, I summarized much of what I have found in my research on out-of-field teaching and tried to clarify some major misunderstandings, especially those surrounding the reasons behind the prevalence of this problem (Ingersoll, 1999). In a response published in *Educational Researcher* in June–July 2000, Stephen Friedman raised a number of additional and also widely misunderstood issues. In this rejoinder I will attempt to clarify two of these issues: Do teachers' qualifications really matter? And what do measures of out-of-field teaching really measure?

### Do Teachers' Qualifications Matter?

Underlying research on out-of-field teaching is an important assumption: that adequately qualified teachers, especially at the secondary-school level, ought to have

background education and training in the subjects they teach. There are some, of course, who do not accept this assumption. Some, like Friedman, are skeptical of the necessity of teacher background education and training in a subject and doubt whether out-of-field teaching is really “much of a problem.”

Skepticism toward the necessity and importance of teacher education and training is not new, but it takes different forms depending upon which kinds of teacher qualifications are valued and devalued. One of the key areas of difference concerns the relative value for teachers of subject knowledge and pedagogical knowledge. On one end of this continuum are those who argue that content or subject knowledge—knowing what to teach—is of primary importance for a qualified teacher. At its extreme this viewpoint assumes that training in teaching methods is unnecessary and that having an academic degree in a subject is sufficient to be a qualified teacher in that subject. On the other end of this continuum are those who argue pedagogical or methodological knowledge—knowing how to teach—is of primary importance to be qualified (Friedman appears to hold this view). In this view, in-depth knowledge of a subject is less important than in-depth skill at teaching. At its extreme, this viewpoint holds that “a good teacher can teach anything.”

There is an extensive body of empirical research, going back decades, devoted to assessing the effects of teacher qualifications on teacher and student performance. For measures of qualifications, researchers typically examine whether teachers have a particular credential, such as a degree or a teaching certificate, reflecting a variety of types of teacher education and training. Accurately isolating and capturing the effects of teachers' qualifications on their students' achievement is difficult and, not surprisingly, the results from this literature

are often contradictory. However, despite these problems, and contrary to the claims of the skeptics, many studies have indeed found teacher education and training, of one sort or another, to be significantly related to increases in student achievement (see, e.g., Greenwald, Hedges, & Laine, 1996).

But what is most striking to me about this debate and literature is its expenditure of prodigious effort to “prove” what is really common sense. I find myself wondering whether those skeptical of the importance of teacher training and education have spent much time in elementary and secondary classrooms. In my former experiences as a secondary-school teacher, I found teaching to be very complex, demanding work requiring a great deal of ability and skill. There are no doubt some gifted individuals able to teach anything well, regardless of their educational background and preparation. My experience was, however, that being adequately qualified at the secondary level requires, *at a minimum*, preparation in how to teach, knowledge of the particular subjects one is assigned to teach, and also expertise in how to teach particular subjects—a form of subject-specific pedagogy akin to what Shulman (1986) has called pedagogical content knowledge. On the one hand, simply knowing a subject well is rarely enough. One could have a Ph.D. in math, for example, but not have a clue as to how to effectively teach decimals to ninth graders. On the other hand, general pedagogical skill is also rarely enough. It is very difficult, challenging, and time consuming to teach subjects that one does not know very well—something I found as a secondary-school teacher who was often given out-of-field assignments by school principals. Schools rarely provide assistance to those they assign to teach out of field and, with an average of five classes per day

at the secondary level, teachers have little time to learn how to teach new subjects.

Of course, the skeptics might respond that common sense alone is insufficient to justify advanced training for teachers and more regulatory curbs on teacher misassignment. And indeed skepticism is healthy. But to me the interesting research question is not, "Do teacher qualifications matter?" but rather, "Why do so many find this an important question?" Why is there a need to continually prove, again and again, that teaching is a highly complex kind of work and that it takes both ability and advanced training to do well?

A closer look suggests this skepticism is highly selective. I have never been able to find analogous bodies of empirical research and debate for other occupations and professions. To be sure, there does appear to be interest in determining the best form of preparation of, for example, veterinarians, accountants, or lawyers. But I have failed to find much debate over whether advanced training and education are themselves necessary for these jobs. For example, there appears to be little interest in trying to empirically establish whether professors' qualifications positively affect the achievement of their students. Nevertheless, most academic jobs require a doctoral degree of applicants. Moreover, I wonder if those who question the necessity of education or training for teachers also question the necessity of education or training in, for example, the accountants or architects they themselves use. But, why is working with children and youth considered to be less complex and to require less expertise than working with accounts or buildings? Underlying this double standard and skepticism is, I sense, an untested assumption—that teaching does not require much education and training because teaching is not really very difficult to do. In short, behind the skepticism toward teacher training and education lies, I sense, a lack of understanding of, and respect for, the sophistication and complexity of the work of teaching. This attitude toward teaching is itself a telling indicator of the low status of teaching in this society and, I hypothesized in my article, is an important factor

behind the prevalence of the administrative practice of assigning teachers to teach subjects which do not match their education or training.

### What Do Measures of Out-of-Field Teaching Measure?

Many observers, like Friedman, assume that out-of-field teaching refers solely to a lack of subject knowledge in a field. This is another misunderstanding. Just as a qualified/unqualified teacher can be defined and measured in a number of ways, so can an in-field/out-of-field teacher. For example, in my March 1999 *Educational Researcher* article I presented data for several different measures of out-of-field teaching. One of the measures I presented there and elsewhere—the percent teachers in each field who do not have an undergraduate or graduate *major or minor* in the field—certainly seems to emphasize subject knowledge. However, this measure counts both academic *and* education majors and minors (e.g., a math teacher with a minor or major in either math *or* in math education is counted as in-field). Hence, it probably captures a mix of both subject and pedagogical knowledge in its definition of an in-field teacher. Another measure I utilized in that article and elsewhere—the percent of teachers in each field who do not have a *teaching certificate* in the field—also probably captures a mix of both subject and pedagogical knowledge.

Those of us who do this research have developed over a dozen different measures of out-of-field teaching. They vary according to how high a standard they set. Some include anyone with an undergraduate minor in the field; others only count those with both a full degree and a certificate in the field. Measures also vary depending upon whether they focus on the numbers of teachers doing it or the numbers of students exposed to it, according to which fields and subjects they examine, and according to which school grade levels are included. These choices are consequential; each of the many different measures has its advantages and disadvantages, strengths and weaknesses. (For detailed discussion and comparison see Ingersoll, 1996, 2000; and Bobbitt & McMillen, 1995.)

Although measures of out-of-field teaching vary in many ways, they do, however, have two characteristics in common. First, all begin with the above-discussed assumption, common to most occupations: that a credential, signifying some degree of education and training, is necessary to be considered a qualified practitioner. Measures of out-of-field teaching simply indicate how many of those teaching a particular subject do and do not have a particular credential, such as a college minor or a teaching certificate, in that subject. Of course, having a credential in a field does not guarantee a teacher is fully qualified. The underlying assumption is that it is a minimal prerequisite. That is, the assumption is that education and training do impart knowledge and skill, and that teachers trained, for example, to teach social studies are unlikely to have a solid understanding of how to teach mathematics. Moreover, although different measures result in different estimates of the extent of out-of-field teaching, all have a second very important thing in common: They all provide documentation that in American classrooms there is, indeed, a significant problem of out-of-field teaching.

### NOTE

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