Rejoinder:
Misunderstanding the Problem of Out-of-Field Teaching
Richard M. Ingersoll

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 pedagogical skill 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 misas-
signment. 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 com-
plex 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 re-
search and debate for other occupations
and professions. To be sure, there does ap-
pear to be interest in determining the best
form of preparation of, for example, vet-
erinarians, 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. Never-
theless, most academic jobs require a do-
toral 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 consid-
ered to be less complex and to require less
expertise than working with accounts or
buildings? Underlying this double stan-
dard 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 under-
standing of, and respect for, the sophis-
tication 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 hypothe-
sized in my article, is an important factor
behind the prevalence of the administra-
tive practice of assigning teachers to teach
subjects which do not match their educa-
tion 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 quali-
Fied/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 else-
where—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 knowl-
edge. However, this measure counts both
academic and education majors and mi-
nors (e.g., a math teacher with a minor or
major in either math or in math education
is counted as in-field). Hence, it prob-
elly 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 accord-
ing 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 weak-
nesses. (For detailed discussion and com-
parison see Ingersoll, 1996, 2000; and Bob-
bitt & McMillen, 1995.)

Although measures of out-of-field
teaching vary in many ways, they do, how-
ever, 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. Mea-
ures of out-of-field teaching simply indi-
cate how many of those teaching a particu-
lar subject do and do not have a particular
credential, such as a college minor or a
Teaching certificate, in that subject. Of

promise, 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 assump-
tion is that education and training do im-
part 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 dif-
ferent estimates of the extent of out-of-field
teaching, all have a second very important
thing in common: They all provide docu-
mentation that in American classrooms
there is, indeed, a significant problem of
out-of-field teaching.

NOTE

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