
Economic Policy Institute

1660 L STREET, NW • SUITE 1200 • WASHINGTON, DC 20036 • 202/775-8810 • FAX 202/775-0819 www.epinet.org

TEACHER QUALITY CONFERENCE CALL TRANSCRIPT

**A conference call convened
by the Economic Policy Institute
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PARTICIPANTS: **Anne Heald**, Economic Policy Institute education researcher, moderator
Jennifer King Rice, Author, *Teacher Quality: Understanding the Effectiveness of Teacher Attributes*
Jerry Weast, Superintendent, Montgomery County (Md.) Schools
Michael Allen, Program Director, Education Commission of the States
Hannah Rubin, Editor and Writer, *Education Daily*
Fredreka Schouten, Reporter, *Gannett News Service*
Mike Bowler, Reporter, *The Baltimore Sun*
George Archibald, Reporter, *The Washington Times*
John Drake, Reporter, *The State* (Columbia, S.C.)
Amy Scribner, Reporter, *Thompson News Service*

INTRODUCTION

This edited transcript records a discussion from August 20, 2003, on how to measure and promote teacher quality, an issue of special concern to schools in light of tighter budgets and new accountability standards stemming from the federal No Child Left Behind legislation. The Economic Policy Institute hosted the national conference call centered around its latest education report, *Teacher Quality: Understanding The Effectiveness of Teacher Attributes*, written by Jennifer King Rice, University of Maryland professor and EPI research associate.

Rice analyzed nearly 80 research studies to explore what factors in teacher education and experience raise teacher effectiveness and student achievement, focusing on such areas as teacher certification, work experience, preparation programs and degrees, coursework, and teacher test scores. One key finding is contrary to a central theory behind No Child Left Behind, which emphasizes course content over teaching methods in teacher training. In fact, *Teacher*

Quality shows that training in both the subject area and education methods are essential to maximizing classroom success.

Rice's work calls attention to the complexity of teaching and emphasizes the need for teacher training practices and policies to be based on solid evidence of what really works in the classroom.

THE CONVERSATION

Anne Heald: Thank you for joining us today. Jennifer King Rice's report *Teacher Quality* is the first in a series of research projects that EPI is doing over the next three years in the area of teacher quality. This is an area of enormous import socially as well as in education policy. The largest single category of education spending is on teachers' pay and benefits. In 2000, about \$192 billion was spent on teacher pay. Overall in K-12 education that year, we spent about \$360 billion and employed about 2.9 million teachers. And in state benefits, K-12 is about a quarter of every state's budget.

So it's a huge area of public investment. And there's substantial agreement in both policy and research that teacher effectiveness is perhaps the single most important factor in school success. Jennifer King Rice has done this extremely valuable and refined assessment of the literature. I'm going to ask Jennifer to spend about ten minutes or so discussing the highlights of the report. Then we will follow up with comments by Dr. Jerry Weast, who is superintendent of Montgomery County Schools.

We invited Dr. Weast to join us on this call because as Jennifer and I are working on our next research project on teacher recruitment and retention, we noticed that Montgomery County was doing much of what the research evidence suggests is valuable to do. So we

thought it would be helpful to hear from a leading-edge superintendent in this area. The third person we've asked to comment on Jennifer's work is Michael Allen, Program Director with the Education Commission of the States. ECS has its own research program in this area and is at the heart of working with state education leaders. Jennifer, do you want to begin?

Jennifer King Rice: I'd be happy to. First I want to thank you all for your interest in this critical issue of teacher quality. As Anne said, this is an enormous public investment. Each year the public makes a very sizeable investment in public school teacher compensation, almost \$200 billion in 2002 alone, which amounts to just about half of all public school expenditures. In addition to this, there tends to be agreement among a lot of different groups, including researchers, policy makers, and the general public, that teachers are a critical, in fact I would say *the most* critical, factor in realizing student achievement.

Now despite this it turns out that there is remarkably little research that guides costly teacher policy decisions. Decisions like whom to hire, what factors to include in teacher salary schedule, and how to distribute teachers across schools and classrooms to achieve the kinds of equity and adequacy goals that we hold for public education. In other words, while it seems that we know that teachers matter, we have much less understanding about what specific attributes contribute to teachers' effectiveness. And that's what this book gets at. This book reviews the existing empirical evidence to draw conclusions about the specific characteristics that are linked to teacher performance. In other words, what does the research really tell us, not just what do we believe.

Greater clarity on the empirical evidence regarding teacher quality can inform the wisdom of current practice, can guide state efforts in their struggle with No Child Left Behind compliance (particularly with the requirement that they staff all schools and classrooms with highly qualified teachers), and can provide direction for future policy decisions around teachers. This analysis focuses specifically on five broad dimensions of teacher attributes that are generally assumed, both in policy and practice, to be associated with teacher quality. These include:

- teacher experience,
- teacher preparation programs and degrees,
- teacher certification,
- specific course work taken by teachers in preparation for the profession, and
- teachers' own test scores.

Before I get into the specific findings about those five categories, it's worth noting that perhaps the most significant finding here is that teaching is an extremely complex activity. While we're just beginning to really understand what matters with prospective teachers, it's very clear that no single teacher attribute fully accounts for effectiveness. I think a very striking example is the importance of preparation in both subject matter and in teaching methods. It's not one or the other. For instance, high school teachers need to not only know algebra, but also have the skills to teach algebra to their students.

So it's that interactive nature between the subject matter that they teach and the methods with which they teach that to students that is important. Now let me turn to some of the

specific findings from the analysis. One is that experience matters -- particularly during the first several years of teaching. Each additional year that teachers teach up to five to seven years has a positive impact on student achievement. Beyond that five- to seven-year threshold, more experience is not shown to lead to higher teacher effectiveness. We also found that selectivity or prestige of the institution a teacher attended has a positive effect on student achievement. This is particularly the case at the high school level.

Advanced degrees, master's degrees in particular, have a positive effect. But our evidence of this is limited to high school mathematics and science achievement, and only when those degrees were earned in those specific subjects. So subject-specific degrees in math and science appear to have a positive effect on student achievement in those same subjects at the high school level.

With respect to teacher certification, there are similar findings. Research has demonstrated a positive effect of certified teachers, again on high school math achievement when the certification is in math. But again there are gaps here. What we really need is more information on the specific requirements for certification to fully understand its impact on teacher performance and to really get at some of the important policy questions, like how regular versus alternative certification might affect teacher effectiveness.

Teacher coursework in both the subject area taught and in teaching methods contributes to positive outcomes. Coursework and teaching methods appear to contribute to teacher effectiveness across all grade levels, while the importance of content coursework is found

to be most pronounced at the high school level, not surprisingly. In fact, that's consistent with our findings on advanced degrees and certification and the importance of subject-specific credentials at the high school level.

Finally, teacher performance on tests that assess the literacy levels or verbal abilities and math performance of teachers have shown to be associated with higher levels of student achievement. So these are the specific findings that came from this broad review of the literature.

These specific findings give rise to several general observations about teacher quality and the research on this important issue. And I'd like to conclude with those. First, probably the major finding here is that teacher quality does matter. And there really are indicators of what makes a quality teacher. Further, some of the studies that we looked at suggest that teacher quality matters most for minority and disadvantaged students.

Second, despite the \$200 billion annual investment in teachers each year, we know surprisingly little about what qualities and qualifications make teachers effective. Particularly, there are serious gaps in our knowledge base with respect to elementary and middle grade levels. We know far more about high school than we know about elementary and middle school. There are gaps with respect to high school subjects other than math and science. And there are certainly gaps with respect to how different kinds of teacher attributes affect students from specific kinds of populations like minority, disadvantaged, ESL [English as a Second Language] students, and so forth.

Finally, this study suggests that research and policy need to attend to the complexity of teaching, a point that I started with. This study shows that more refined measures of what teachers know and can do -- measures like subject-specific credentials and specific coursework taken -- are clearly better predictors of teacher and student performance than are more crude measures like graduation from an education program or certification, which are more typical of hiring and compensation policy today.

Further, teacher qualities and qualifications appear to be very interactive. Take again, for example, the subject-matter knowledge of teachers. While the studies that I reviewed in this book show that content knowledge is critical, particularly for secondary school teachers, these findings generally link content knowledge with other qualifications like certification, degree, coursework, and teaching methods. In other words, having subject-matter expertise may be a *necessary* but not a *sufficient* condition for good teaching. So, in conclusion, education policy makers and administrators would be well served by recognizing the complexity of the issue and adopting multiple measures along many dimensions to support existing teachers and to attract hire new, highly qualified teachers.

The research suggests that investing in teachers can make a difference in student achievement. In order to implement needed policies associated with staffing every classroom, even the most challenging ones, with high-quality teachers, substantial and targeted investments must first be made in both teacher quality as well as in further education research.

Heald: Dr. Weast, would you like to make some observations on this research in your experience?

Jerry Weast: Yes. I'm in Montgomery County in Maryland and my experience is born out over 32 years now as a school administrator, as a principal, and as a superintendent. And I would agree with Jennifer. In fact, we've built our system approach around our professional and learning community. You really have to take a look at the tools that you have in a large school system to make a difference, whether you are trying to close the minority achievement gap, keep your system into high performance, or make sure your kids are prepared to go to college.

One tool you have is time. You have a curriculum, and even if you use these teacher-proof curriculums that you find in different places out there, it's only going to get you so far. It's only going to get you the basic level. You can add other tools like class size and diagnostic assessment. Then you've got your principal, who is your education leader. But by far the most comprehensive, systematic approach has got to come from your workforce, and that is your teachers. We have 11,000 of them.

We agree with Jennifer. We did a lot of reviews of the literature, and we came up with the same kinds of issues. We look for our teachers to have a blended experience when we hire them. A lot of the people that we hire are two to three years into their career. We hire some new teachers. Forty-eight percent of the people that we've hired in the last four years have master's degrees. We do interviews, we look at transcripts, and we look at where they went to school. We do targeted recruiting. We look at their content

coursework, if they're math teachers or science teachers, what kind of grades did they earn, and what kind of rigorous courses did they take.

And then once we get them, we do another thing, I think fairly well, and that is mentor them. We assign them a consulting teacher when they come into the district as well as a teacher mentor. We have their principal as a guide by their side. And we take a look at inducting them into the system. We have a course called Skillful Teacher that really sharpens up their pedagogical skills and helps give some common communications techniques. Because we're hiring from 50 states and overseas, we have to have a common way that we talk to each other because different schools have different languages almost, as far as the meaning behind the words.

We put staff developers, or coaches, in each of our buildings to work with the teachers and say it's okay to raise your hand if you don't know, either in a content area or a pedagogical area. We have councils of teachers now in every building that help us with the curriculum and infusing the curriculum and making sure that it's targeted and focused and our standards are clear. That has helped us cut our turnover rate to half the national average in a three-and-a-half-year period of time. And that's kind of important to us since we have a very large and growing school district.

We're the twelfth fastest growing school district and we're also trying to reduce class size and do some other programmatic things. We're finding ourselves hiring about 1,000 to 1,200 teachers a year. So we wanted to cut down on turnover and increase continuity. And we wanted to place highly qualified teachers in an area of the county where we have

about 60 elementary schools that have 80% of all of our poverty and 72% of all of our minorities. So I would agree with Jennifer.

And I think that you're right on target. I also think that there needs to be more research. We are continuing to look at your research and other research and we're conducting our own research. We are finding that you both have to have content and validity. Degrees do make a difference. But what type of degree and how you perform and what vigorous courses you took make even a bigger difference. And they're not complete upon delivery. You have to do a lot of induction work and mentoring work and support work if you're going to get teachers to their highest level and highest standards and make them feel not only supported, but make them more productive.

Heald: Dr. Weast, thank you for describing a very sophisticated and highly refined approach to teacher hiring and teacher policy. Michael Allen, Education Commission of the States, could you comment on this from your perspective looking at teacher policy at the state level?

Michael Allen: Sure. First I want to congratulate Jennifer on a very fine and important report.

Our constituents are largely state policy makers, and one of the challenges we face is that research, which contains critical information that they need, has often been inaccessible to our policy makers.

So Jennifer's effort to really look at the research, to distill it and to try to draw out the implications, is really critical for our policy makers. We recently did our own review of

the research on teacher preparation with the same end in mind. And many of our findings I think really corroborated Jennifer's findings. So it's great that we have this resource and we certainly would like to get it in the hands of our people and to try to cultivate a culture among policy makers that see the research as something important to take into consideration when making policy decisions.

That having been said, you know policy decisions have to be made with or without research. And what I was asked to do was to give people a little bit of an idea of some of the kinds of decisions and policies that people are enacting around the country related to teaching quality. There's no question that in our organization over the last five years, teaching quality has been a top-three issue. And repeatedly, it's one of the issues that our constituents are most interested in and ask us for help with.

A number of states during that time have even gone so far as to try to devise overall blueprints to improve the quality of teaching in their state. Some of the early efforts resulted from Title II grants that they received when the Higher Education Act was reauthorized, but others are independent efforts. And there are so many states that do this that I don't even mention them. But let me give you a sense of some of the things that states are trying to do in all the areas that Jennifer covered in her report and some of the areas that I know you're going to be covering in some of your work on down the line.

A lot of states are trying to improve teacher preparation. A few years ago, for example, Colorado passed a law that required teacher preparation programs in Colorado to be consistent with state standards and to require a certain number of hours of field

experience. There is an emerging role of community colleges in teacher preparation. You find that in Nevada and Arizona, and also really strongly in Maryland. And so that's another thing that states are doing to try to show their dedication to improving the quality of teaching. There's also, in almost every state, increasing support of alternative preparation routes.

And we see this a lot in urban areas. We've seen it in New York City recently. We see it in urban states like Massachusetts where they have a shortage of teachers and are particularly interested in trying to get teachers into districts that have a large degree of poverty. A lot of states are also trying to strengthen program entry requirements for teacher preparation or trying to strengthen licensure requirements. We've seen that in Pennsylvania where they raised the minimum grade point average for teacher candidates to enter teacher education programs. We've seen that in Virginia, which has raised their cut scores on their practice exam to the highest in the country.

Then, related to certification as well, we have a number of states that are moving toward a tiered licensure system. It's not just a matter of getting a single teacher license but it provides teachers an opportunity to get multiple licenses as they move through their career. The purpose is to both recognize and motivate advanced teaching skills, and to strategically target professional development. So teachers, instead of just getting any old coursework or any old degree, will get degrees or coursework that really helps them with their teaching aligned to state standards, both teaching standards and student content standards. We see that across the country and more recently in states like New Mexico,

Kansas, and Iowa. In fact, in Iowa they tie compensation structures to their licensure system.

We also see other efforts across the country to deal with compensation issues in order to address the teacher shortage. There are loan forgiveness programs to entice people into teaching again, particularly to teaching in the hard-to-staff schools. We see lots of salary incentives for teachers--whether it's bonuses or whether it's actually salary increases--to teach in hard-to-staff schools.

We see some states, like California, where housing costs are extremely high, even building low-cost housing for their teachers. We see a lot of states wrestling with the whole issue of how to adequately compensate teachers to attract more teachers into the profession and also to pay teachers based not just on their seniority but also on their performance. In an effort to increase teacher retention and to ensure that new teachers, in particular, have the skills they need to be successful, we see states committing to induction and mentoring programs. The one difficulty is that, often, the commitment isn't backed up by adequate financial resources.

I think that one of the most interesting and maybe most powerful developments is that we've now seen teacher quality become a concern of the courts. In state adequacy and equity lawsuits, probably most prominently in New York City, it's not just a matter of the kinds of facilities that schools have or even a matter necessarily of just the number of teachers that schools have been judged adequate or inadequate. It's really now become a

matter of how qualified the teachers are. Are the teachers getting adequate professional training?

We've seen that most prominently in New York City, but we also see related concerns and lawsuits in as disparate states as Wyoming, Alabama, Nebraska, and Montana. So it seems like this whole focus on teacher quality now is becoming an entrenched part of everyone's thinking about what needs to happen in order to improve education.

Heald: Thank you, Michael. In closing, just before we move to questions, I'd like to make a few observations. If you look at this research and then you look at the No Child Left Behind regulations that focus on teacher quality, you ask "where is the congruence and where is the gap?" I think the legislation has pointed out the importance of highly qualified teachers. But the way they try to determine if you have a highly qualified teacher is his or her certification. Well, I think Jennifer has laid out a body of research that shows that you need to take a much more refined approach as has been the case in Montgomery County.

The other really important distinction is that the regulations emphasize the importance of looking at content knowledge at the middle and high school levels and neglect the significance of teaching pedagogy or the teaching skills. How do you help a 13-year old understand algebra or biology? We think that this is a big gap in what's proposed to obtain a highly qualified teacher. So we would suggest that if you look at this legislation in the framework of this research, it's not the most powerful way to build a quality teaching force.

Hannah Rubin (*Education Daily*): Mainly my question was about No Child Left Behind. I was just wondering if someone could expand a bit on how you see the new law affecting teacher quality and whether it looks like it will improve teacher quality.

Heald: The No Child Left Behind Act emphasizes in two ways the simple certification, whereas I think Jennifer has laid out many different dimensions. If you listen to Montgomery County, they clearly have gone well beyond what is required in the law. If you relied simply on the law, you would be hiring math majors, science majors, English majors and it doesn't guide you in the direction of higher-level teaching skills.

Rice: It strikes me that that's a very difficult question to answer because it in some ways involves predicting the future and whether this policy will lead to more highly qualified teachers. It strikes me that there are really two issues embedded here. One is defining highly qualified and really trying to get a sense of whether the definition of "highly qualified" from a policy perspective is really the same as "high quality." And I think that Anne's points speak much to that; the kind of definition or characteristics of teachers that have been laid out to help us to define "highly qualified" are things like broad certification and content knowledge.

And clearly from the literature that I've looked at, those fall short of what we really need. We need a far more integrated set of dimensions of teacher quality if we really want to improve student achievement through these measures. So first is defining teacher quality. And I think that we've both talked about some of the concerns about how that's been defined in No Child Left Behind. But I think the second big issue is how we get from

here to there. And that is what states need to do in terms of policies that will staff schools with teachers that make a difference. Michael Allen just went through a wide variety of very impressive efforts that states are making to do that. Jerry Weast talked about what they're doing in Montgomery County. And those are exactly the kinds of things that we need to pay close attention to.

It's only through those sorts of effective policies and with adequate funding behind them that we're going to see a better set of highly qualified teachers distributed more equitably across schools in this country.

Allen: I agree with Jennifer that to answer the question involves predicting the future and we don't know what some of the unintended consequences of the legislation will be. But even though I agree that the letter of the law has some limitations, the reality is that it, in fact, has had some positive impact. For one thing, it motivated states like California to figure out ways to get rid of their emergency credential teachers and to stick those teachers into some kind of a teacher preparation program. Even if it's a minimal program, it's better than simply hiring a lot of non-credentialed teachers. So I don't think the law is all bad. It just has its limitations.

Heald: Jerry, do you have any thoughts on this subject?

Weast: I would agree. I enjoyed seeing people at the federal level talk about highly qualified teachers and how important that is. They might not have the right definition just yet and may have to tweak it. But at least it recognizes the significant impact that a teacher has.

Every parent does already. They want their teachers to be not only highly qualified, they want their teachers to be able to deliver the content in such a way as to motivate the student and engage the student in the full teaching/learning process. It's a little more complex than you can put in a federal or a state law.

Fredreka Schouten (*Gannett News Service*): Jennifer mentioned that teacher quality mattered more with minority and disadvantaged students. I'm wondering if you could talk about that a bit more and what sort of differences the research shows that you see in test scores and what are the characteristics of those teachers. Why, for a particular group, does it matter so much?

Rice: This comes from some of the studies that I looked at. It turns out that some specific qualifications seem to be more highly predictive of student achievement among minority and disadvantaged groups. Specifically those are the selectivity of the higher education institution the teachers attended. That's one of them. Like I said in my introduction, the evidence that we have is very limited. But these are the findings that I can cull from that evidence. A study or two suggests that selectivity of the higher education institution attended by the teacher is related to achievement among minority and disadvantaged students.

A second teacher qualification is related to the degree attained, for master's degrees in math at the high school level. And the third is test scores. So within all three of those categories there have been at least one and in some two studies that have linked those

teacher qualifications with achievement among minority and disadvantaged student groups.

Heald: And particularly with verbal test scores too.

Rice: Yes, verbal test scores, correct.

Schouten: How is selectively defined?

Rice: It's defined differently in different studies. I believe that three or four of those studies are included in this review. Gorman ratings is one. I don't have the name of that volume in front of me. But Barron's is the guide to colleges and universities across the country. And they include a selectivity index. So researchers drew on sort of external indices that have been used to categorize universities according to their selectivity in terms of student admissions. So these students are highly selected. These universities are highly selective. They only take the top x percent of SAT scores for instance.

Schouten: Thank you.

Mike Bowler (*Baltimore Sun*): There's a healthy debate as you know -- maybe it's not so healthy -- over how much certification really means. You are obviously lining up with those who say certification is useful. If you had to weigh it as one of the factors how much would it weigh in the formula that you mention?

Rice: I guess my initial response there is that certification is actually one the weaker predictors. Certifications is one of the indicators where there was mixed evidence. Some studies found that certification doesn't matter. Some studies found that certification does matter. And, in fact, there's a pretty rich tradition of this mixed evidence in education research. It's not until more recently that studies have tried to tease out the effective certification by looking at subject-specific certification. So I really want to underline that. What we know about certification is limited to high school mathematics achievement.

We don't have definitive findings about certification at the elementary school level, mostly because it hasn't been studied at that level. So as a broad measure I think I would put certification a little bit lower in terms of our level of confidence. I would strongly recommend that that's an area where we ought to invest in more research. We should understand the specific requirements of certification and licensure and really try to tease out what components of that matter the most and promote those sorts of qualities and qualifications in the teachers that we're hiring.

Heald: I'd just like to add to the remark that Jennifer is talking about how much evidence we have to weigh on all of this. We're talking about roughly an annual \$200 billion investment. And Jennifer has identified, at most, 80 studies of some level of quality to help us understand the effectiveness of the investment.

Rice: Certification is a very good example of the need for more sophisticated measures, more refined measures of what teachers know and can do. Certification is a very complex variable, because it involves a lot of different things. So the more that we can understand

about the components and requirements of certification the more we're going to understand what really matters.

Weast: Subject-matter preparation would be much more important than just the simple bureaucratic certificate. And we find probably equally important is teachers' ability to get their subject across, what they know about teaching and learning and interacting with students. And how that really helps minority students -- we have found that if teachers are well prepared in subject matter and know how to teach, they know how to adjust the strategies for different groups who may come in with different attitudes toward education or need different strategies. The strategies of just saying it slower and louder doesn't work and a poorly prepared teacher tends to do that more than a highly prepared teacher.

Allen: I think that Jerry's point emphasizes what Jennifer found in her report, which is that what's really critical is some adequate amount of subject-matter preparation and also a pedagogical skill. And the difficulty, which I think Jennifer also points out in her report, is that certification doesn't necessarily measure either subject matter or, especially, a teacher's ability to teach in the classroom. I think that's one of the reasons that research on certification is so mixed. It's just not a very good measure.

Bowler: Jennifer, did you get into the alternative certification routes such as Teach for America? I'm sitting here looking at the current *Time Magazine*, where there's an article by Joe Klein asking, "Who killed Teach for America?" And I'm wondering if you looked at that group of people who come into teaching by different routes -- career changes and those kinds of people.

Rice: I didn't look at specific alternative routes to certification, like Teach for America or the Pathways to Teacher Education. But I did look at some of the studies that include alternatives or emergency certification, and in general found that studies that include these variables found that certification matters but that's there's not a significant difference between regular certification versus alternative or emergency-route certification. Now that being said, I want to qualify that because I think that's pretty loaded. There are only a few studies that looked directly at certification in this way in terms of its impact on student achievement.

And again I think that there are so many different routes in alternative certification. One researcher has distinguished between alternative certification and alternative *routes* to certification. The distinction there being that alternative routes to certification include the same set of requirements that certified teachers would have; that is content knowledge, training in teaching methods, practice teaching, and so forth. Alternative certification, in contrast to that, involves far fewer requirements, far fewer qualifications required to get certification. So it's a quicker route in. It's hard to distinguish between those in the literature.

George Archibald (*Washington Times*): I'd like to direct this question probably primarily to Dr. Weast, but also to Jennifer. I'm sure your research has probably looked at this. From a consumer viewpoint, we've got all of these children coming up through the system from kindergarten on--or many pre-kindergarten, Head Start, and what have you--and obviously the first thing that teachers have tried to do, among many things, is to teach these children

to read. And you're testing the children at various levels at a very young age. With respect to teacher quality, what are the school systems doing?

If you've got large numbers of children who are moving up through the system who it is shown cannot read, they do not have phonemic awareness at, say, second or third grade, and you're finding that teachers in particular classrooms have large numbers of students who are moving up through the system who have not been taught to read adequately, how are these measures of student achievement or non-achievement used to validate teacher effectiveness? And, where you have teachers who are not teaching the children at the youngest of ages, how do you identify these teachers to either give them the proper training to get them to be more effective or to move them out?

Are the unions and your contracts preventing you from doing this? So it's a two-part question. Number one, how are you able to use these tests of children's reading ability at a very young age to identify teachers who are not effective and move them out of the system, so that you can have better teachers in the classroom?

Weast: I'm going to answer the second part first. We sat down and worked out an agreement with our unions about four years ago to address teacher quality. If teacher quality is important they have to work with us on teacher quality and we have to do both: Support teachers, but also weed out poor-performing teachers. And we put on a cadre of consulting teachers who are helping us as you might properly have heard, "weed and feed." Feed the good ones and strengthen them and help weed out the poor performers because, you're right, teacher quality is important. And you have to have some way, some

mechanism to achieve teacher quality and you have to work with your [teacher] unions to do that.

We've worked close together because we provide a lot of support. Most teachers get better, we found, when they're addressed with the data and given the support. So that's the second part of the question. The first part of your question then strikes the heart of our own program. We put highly qualified pre-K in our early childhood or early Head Start or Head Start. They're all fully certified and they're highly qualified. And we do work with phonemic awareness in preschool, not just wait until they get into kindergarten.

And so we have the phonics, the phonemic awareness, depending on the age level and grade level. We have that entire approach. And we use diagnostic measurements. Not these standardized group tests. But we use individual diagnostic measurements that we give the children when they first arrive to see where they are mid-term in their progress to see where they are so we can readjust and then at the end of the term, whether it's preschool, kindergarten, first grade, or second grade. And we found that to be very effective.

We found that even children in poverty, children affected by mobility, and children who come to us with special needs like special education or LEP [Limited English Proficiency] have greatly benefited by this approach. We try to string four good teachers in a row prior to hitting third grade. So, a pre-K teacher, a K teacher, a first-grade teacher, and a second-grade teacher. I'd be happy to send you the research on that. Yale researchers have reviewed it and we've had several sets of researchers review our research on

16,000 kids to make those points and back up what Jennifer is saying. It is a highly qualified teacher and it is their subject-matter knowledge, but also it is their teaching skills and strategies.

Archibald: I'd like to work with you on that because I think as a reporter that one of the things missing in our work -- and I'm not speaking about the people here on the phone, but I mean just generally in what I'm reading -- is enough stories that report what you've just said about how you use your diagnostic tests to identify teacher effectiveness and then what you do about it when you find that you've got a problem. From a reporter's viewpoint I'd like to do a story on that. And I'd like to see more stories about that because I think that it's going to help public confidence in everything that's being done by the policy makers and the school community if they see those kinds of stories.

Weast: We're doing our diagnostic test to find out how the student is doing. But we also then can see how groups of students are doing with regard to an individual teacher and that's why we have an individual coach right there looking at the data. We had a school that has about 600 in size and has only three children who are Caucasian in the school so you can call it pretty diverse. And it has 88% poverty and it hit all 37 of the targets that you had to hit in the No Child Left Behind. And basically we used Jennifer's research and other research to select the teachers and get them into long-term commitments in that school. We think that is the biggest help we can give those children. It actually works.

John Drake (*The State*): Hi. My question is about teacher pay. Have you looked at research as to what role teacher pay has on student achievement?

Rice: That's a very good question, and no. I think that's the next step in this work. Teacher pay and compensation is more, in my view, a policy response. So the characteristics and qualifications that were identified for study in this book were those that are typically the object of pay. In other words, we pay teachers for certain levels of experience. We hire them based on their preparation programs, degrees, and certification. We pay them more for higher levels of degrees and so forth. So including teacher pay in this study would be confounded by the other kinds of variables that I was looking at. I think that the findings here eventually will have implications for teacher pay and compensation structures.

Drake: The reason I ask is because so many of the rural districts here in South Carolina are complaining that if they would just simply pay their teachers more, the students would do better. So I was wondering if there was research to back that assertion up.

Rice: There is certainly a strong argument that differential pay across geographic areas can redistribute teachers in ways that could lead to higher equity and higher test scores in low performing schools. I think there's a real strong argument there. That needs to be played out. And I haven't seen the research on that. But I think simply paying the same person more regardless of their skills is not necessarily going to lead to higher levels of student performance. Pay needs to be used to attract higher quality.

Drake: And then a follow up is on professional development. Does the research suggest the effect of mid-career professional development the teacher has on student achievement?

Rice: And that's also a very good question. That's one that I'm going to turn to Jerry Weast and Michael Allen because I stopped at the five qualifications that I enumerated in my presentation. Professional development certainly has an important role in teacher quality but it's not something that I looked at the literature on just because it opened up a whole new realm. But both Dr. Weast and Michael Allen talked about that in their presentations.

Allen: I'll let Dr. Weast go last because he probably has the really valuable things to say. I can only say that part of a teacher's experience involves some kind of professional development. So I think while that's not an explicit finding of Jennifer's report, it's probably an implicit finding.

And I don't really have any more than I can explicitly say about the relationship between professional development and student achievement. But we do know that in certain cases, when teachers go back and get advanced degrees in their subject, that there are at least some studies that show a correlation with increased student achievement for those teachers. So I think that there is certainly some research there. But it needs to be all drawn together and probably be at some separate report.

Weast: I guess I'd have to say that's a fairly complex question. We obviously believe that professional development matters. But you're going to have to tailor that almost to the individual teacher and we have each of our teachers on an individual plan. Some teachers need strengthening in content and we try to help them there. Other teachers need strengthening in the pedagogy and we try to help them there. And you have to tailor the plan also with what the students that they're teaching need. Some teachers need to

expand and learn different strategies because the children are not being successful in their classrooms. So we try to find a new strategy that works in the approach. We don't lower the rigor at any given time.

But we do change the strategy in how we deliver it. So it's as complex as there are individuals. And just like all of us, each teacher has strengths and weaknesses and you need a professional development plan to capitalize and increase those strengths and eliminate those weaknesses. On the question that the gentleman before had on teacher pay, I can only tell you after hiring several thousand teachers in the last few years, one of the first things they say is pay matters. They look at pay and they look at cost of living; okay, what is the cost for an apartment, etc. They're very sophisticated because we're trying to hire some high-quality teachers. And they take a look at their working conditions, the type of building, the size of classrooms. The very good teachers that everybody's looking for shop districts.

We have them coming from all over the country and we always ask and do samplings: Why did you choose us? And I know why we chose you, but why did you choose us? And they start ticking off those kinds of things. What are the working conditions, what is the pay, what are the benefits, what are the kinds of things that they're looking for in their lives? What's the opportunity for mobility? If I'm going to be in a difficult building, what is the level of support that I will get? We do a lot of research on our teachers after their first, second, and third year, asking them questions. The reason they stay and the reason that they don't drop out or drop out at a lower level than the national average, in our case, is that they feel the support. They don't mind dealing with tough circumstances if they

have a reasonable span in class size, good compensation and benefits, and feel like you're supporting them and giving them the tools.

Amy Scribner (Thompson News Service): My question is for Michael Allen and it's about implementation. Michael, obviously as you know, No Child Left Behind includes really specific criteria for teachers to be deemed highly qualified. I wanted to know what you're hearing from the states. What sorts of tools do you think the U.S. Department of Education needs to offer to support states in achieving this? They recently introduced the idea of this teaching assistance to give states help. Is this going to be helpful? And what else are states asking for as the work to meet these standards?

Allen: Whether it's going to be helpful or not, I don't know. I hope it's going to be. In fact one of my colleagues here is going out to Washington, D.C., tomorrow to talk about the development of this course. So we're hopeful. I think everybody's hopeful that it's going to be helpful. So part of the tools that they need is certainly just getting more information out to people about what, in fact, is required, and what kinds of policies and practices will meet muster and what kinds of policies and practices won't meet muster. There's a lot of misunderstanding and misinformation and lack of information in that regard. So I think that's going to be pretty helpful.

The big concern that our organization probably has about implementation of No Child Left Behind is that states will game the system. Because if one of the requirements is that teachers be certified, the state could easily say we have all these uncertified teachers or all these teachers who don't meet our current standards and we're going to get caught by

the law if we don't do something. So what we'll do is we'll lower our certification standards so that we can say that they're all certified. That's our biggest concern. And so one of the things that would be very helpful would be helping states craft realistic deadlines for getting all teachers up to the minimal level of requirements, because without that states are going to game the systems and no one will gain from that.

Rice: Can I just make one comment? This connects Amy's question with one that was asked before on alternative certification and it builds on Michael's response, and that is in the spirit of this gaming the system. Not only is there a possibility for states to lower their certification standards, but I also think that we can expect to see a lot of new alternative certification programs rising up to help meet this need to certify "teachers" so that they can qualify as high-quality teachers, or at least fully qualified teachers, to meet the No Child Left Behind requirements for states.

So that sort of opens the door for almost a whole new market for alternative certification programs. And I think that we ought to pay real close attention as researchers to how effective these programs are and how closely they are aligned to standard certification requirements.

Bowler: I'd like to go back to the selectivity issue. Frankly, I don't know of too many major colleges of education that are really selective. In fact, one of the problems with the profession is that it's taken a black eye in terms of teacher education. Do you have some recommendation as to what to do about that?

Rice: I don't have a recommendation. But let me also qualify this. The studies that we look at in terms of selectivity, my sense is that the selectivity was on the college or university. That it was the ranking of the college or university, not of the program, not of the college of education but of, for instance, the University of Maryland. You know what I'm saying?

Bowler: Yes.

Rice: So the College of Education at the University of Maryland may not be very selective at all, but the University of Maryland may rank as highly selective.

Bowler: I see.

Rice: So there may be some misalignment there in that measure.

Allen: I have one response to that, which may get at your question. One of the questions that we asked in the report that we recently released, because it's a question that our policy makers are asking, is whether or not they should make entrance requirements into teacher preparation programs more stringent. So that would make them more selective. And we try to look at what the research said. And there's not a lot of research there, but the research that we could find indicated that, while that might in fact improve the quality of the teachers who were going through the programs, on the negative side it was also very likely to reduce the pool of teachers. And at a time when states are really worried about

having enough teachers, this is something that's probably not, from a policy standpoint, a very wise to do.

Heald: I'd like to thank Jerry Weast and Michael Allen for joining us on this call. And to also indicate that this is part of an ongoing research agenda. Some of the questions that you've asked about are up for future research in our education program.

[END OF TRANSCRIPT]