

EDUCATION RESEARCH: IDENTIFYING EFFECTIVE PROGRAMS TO SUPPORT STUDENTS AND TEACHERS

HEARING

BEFORE THE

SUBCOMMITTEE ON EARLY CHILDHOOD,
ELEMENTARY AND SECONDARY EDUCATION
COMMITTEE ON EDUCATION
AND THE WORKFORCE

U.S. HOUSE OF REPRESENTATIVES

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**Wednesday, November 16, 2011
U.S. House of Representatives
Subcommittee on Early Childhood,
Elementary and Secondary Education
Committee on Education and the Workforce
Washington, DC**

The subcommittee met, pursuant to call, at 10:01 a.m., in room 2175, Rayburn House Office Building, Hon. Duncan Hunter [chairman of the subcommittee] presiding.

Present: Representatives Hunter, Petri, Platts, Foxx, Hanna, Barletta, Roby, Kelly, Payne, Scott, McCarthy, Holt, Davis, and Woolsey.

Staff present: Jennifer Allen, Press Secretary; Katherine Bathgate, Press Assistant/New Media Coordinator; Heather Couri, Deputy Director of Education and Human Services Policy; Lindsay Fryer, Professional Staff Member; Krisann Pearce, General Counsel; Mandy Schaumburg, Education and Human Services Oversight Counsel; Dan Shorts, Legislative Assistant; Linda Stevens, Chief Clerk/Assistant to the General Counsel; Alissa Strawcutter, Deputy Clerk; Brad Thomas, Senior Education Policy Advisor; Kate Ahlgren, Investigative Counsel; Daniel Brown, Junior Legislative Assistant; John D'Elia, Staff Assistant; Jamie Fasteau, Deputy Director of Education Policy; Ruth Friedman, Director of Education Policy; Brian Levin, New Media Press Assistant; Kara Marchione, Senior Education Policy Advisor; Melissa Salmanowitz, Communications Director for Education; Laura Schifter, Senior Education and Disability Advisor; and Michael Zola, Senior Counsel.

Chairman HUNTER. Good morning. A quorum being present, the subcommittee will come to order.

Welcome to today's subcommittee hearing. I would like to thank our witnesses for joining us today. We look forward to hearing your testimony.

Providing more information about educational quality to families and communities is essential to improving K-12 schools in America. We are here today to discuss the value of education research, explore the appropriate level of federal involvement, and examine ways to improve current law to provide more immediate and relevant data to parents and educators.

Since the enactment of the Education Sciences Reform Act the federal government has played an important role in supporting research and program evaluations and gathering data about educational practice and the nation's schools. Today, federal expert panels and research centers offer support to state and local organizations that perform education research.

The responsibility for education research is shared by both federal and nonfederal organizations in an effort to examine the quality of existing programs, develop and test innovative practices, and ensure the effective use of taxpayer dollars.

The resultant data allows teachers, parents, and officials to gain a greater understanding of successful interventions, school performance, and student achievement. For example, the Institute of Education Sciences established the What Works Clearinghouse to provide educators, policymakers, and the public with a central and trusted source of scientific evidence of what works in education.

Information from the clearinghouse showed the "I CAN Learn" curriculum resulted in significant achievement gains for 8th grade and math students. However, the What Works Clearinghouse needs improvement, especially in providing clear direction on applying research to classroom practices.

Education research has also helped us identify programs that are not helping students succeed. Particularly in these times of trillion dollar deficits and record debt, congressional leaders must be careful stewards of taxpayer dollars.

We can all agree on the need to dedicate federal education funds to the most effective programs; if research and data show a program is not working we should get rid of it. That is why my colleagues and I introduced legislation to eliminate more than 40 ineffective or duplicative programs as part of our K-12 education reform package.

Through the Education Sciences Reform Act and related initiatives we have made great strides in assessing the quality of K-12 schools, protecting taxpayers' investment, and identifying successful education practices. However, as we look toward reauthorization of this law we must acknowledge the challenges facing education research and the Institute of Education Sciences.

For instance, we must find better ways to help states and school districts translate the best research principles into classroom practices. Existing research centers designed to provide technical assistance to states and districts need to do a better job sharing information to help local education officials identify and implement the practices and programs that are most likely to work for their students.

Another challenge exists in establishing a more collaborative relationship between the director of the Institution of Education Sciences and the secretary of education. Maintaining the autonomy and independence of the IES is extremely important; the director's role must stay nonpolitical. However, more communication and data sharing between the two entities could ultimately lead to better, more effective federal education programs and initiatives.

The witnesses here today have valuable insight into the ways we can ensure education research is beneficial to parents, teachers,

and students. I look forward to a productive and informative discussion this morning.

I will now recognize my distinguished colleague, Rush Holt, for his opening remarks.

[The statement of Mr. Hunter follows:]

Prepared Statement of Hon. Duncan Hunter, Chairman, Subcommittee on Early Childhood, Elementary, and Secondary Education

Providing more information about educational quality to families and communities is essential to improving K-12 schools in America. We are here today to discuss the value of education research, explore the appropriate level of federal involvement, and examine ways to improve current law to provide more immediate and relevant data to parents and educators.

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The resultant data allows teachers, parents, and officials to gain a greater understanding of successful interventions, school performance, and student achievement. For example, the Institute of Education Sciences established the What Works Clearinghouse to provide educators, policymakers, and the public with a central and trusted source of scientific evidence of what works in education. Information from the Clearinghouse showed the "I CAN Learn" curriculum resulted in significant achievement gains for 8th grade math students. However, the What Works Clearinghouse needs improvement, especially in providing clear direction on applying research to classroom practices.

Education research has also helped us identify programs that are not helping students succeed. Particularly in these times of trillion-dollar deficits and record debt, Congressional leaders must be careful stewards of taxpayer dollars. We can all agree on the need to dedicate federal education funds to the most effective programs; if research and data show a program is not working, we should get rid of it. That's why my colleagues and I introduced legislation to eliminate more than 40 ineffective or duplicative programs as part of our K-12 education reform package.

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Another challenge exists in establishing a more collaborative relationship between the Director of the Institute of Education Sciences and the Secretary of Education. Maintaining the autonomy and independence of the IES is extremely important; the Director's role must stay non-political. However, more communication and data sharing between the two entities could ultimately lead to better, more effective federal education programs and initiatives.

The witnesses here today have valuable insight into the ways we can ensure education research is beneficial to parents, teachers, and students. I look forward to a productive and informative discussion this morning.

Mr. HOLT. Thank you, Mr. Chairman, and thank you for the hearing.

And I am pleased to welcome the witnesses here today. I think we will learn a lot. I thank you for taking time to provide us with guidance on how to use data and research to improve educational practices at large and individual student performance.

A few years back I visited an elementary and middle school in Union City, New Jersey to learn more about innovations in a school district that had been troubled, and how they used data to improve student achievement. Union City is what we call in New Jersey an Abbott school district. It is a dense urban district with an overwhelming majority of English language learning students, and yet, to the surprise of many education experts, the district is meeting or exceeding state standards now.

They did a number of things to accomplish this, but one thing in particular they did was to provide frequent evaluation of all students and shared the test data immediately with teachers. Union City teachers were able, then, to tailor their instruction to meet each student's individual needs. Data showed that teachers and administrators could identify trends that could be addressed systematically and individually, and this approach of continually using data to inform instruction helped the students do far better than previous classes of students had done.

Now, each of us thinks we are an expert on education because we were students. We have to guard against that, and we have to remember that there are things that we can learn about how people learn. And we need data, we need evidence, we need research to help us understand how people learn and how we can improve instruction.

The Educational Sciences Reform Act was intended to provide for the improvement of federal education research, statistics, evaluation, and dissemination of data to inform education policy and education practice. It supports data-driven development and supports practitioners in understanding research and data from their schools.

I really believe that it helps educators make decisions about their students' learning experiences, and it helps states use research to identify successful instructional programs. It helps teachers and principals implement proven school improvement strategies, and it would help us if we would use those data and if we would use that research. The federal government plays an important role in supporting the research. Educators across the country need reliable research to enable them to make evidence-based decisions in the classroom, and they need data-driven systems that support instruction.

In reauthorizing the Elementary and Secondary Education Act, I hope we will maintain accountability for acceptable, adequate progress for all students. We can be more flexible with how students improve, how schools improve, and how we empower schools to use their data, if we make more use of evidence and drive evidence-based decisions. As the committee continues to work on the reauthorization of ESEA and ESRA I hope we will continue to pay attention to the role of research and data in improving student outcomes.

I am going to reintroduce soon the Metrics Act to help improve data sharing and instruction at the local level. I think improved use of data can help all students do better, and I hope we will be able to include my legislation in any reauthorization of ESEA.

Strongly held beliefs or ideological commitment should not trump data or evidence. If we want to make the best policy we need evi-

dence-based research. At the individual level, if we really want to hold schools accountable for adequate progress for each student they have to use data, and we have to see that it is used in the most illustrative way.

So continued federal investment in educational research will be necessary if we are to ensure that all students receive a quality education that prepares them for life and further study. I hope the testimony today will provide us with some recommendations on how we can strengthen the ESRA and the federal investment in education research.

Thank you, Mr. Chairman.

Chairman HUNTER. Thank the gentleman.

Pursuant to Committee Rule 7c, all subcommittee members will be permitted to submit written statements to be included in the permanent hearing record, and without objection, the hearing record will remain open for 14 days to allow statements, questions for the record, and other extraneous material referenced during the hearing to be submitted in the official hearing record.

It is now my distinguished pleasure to introduce our panel of witnesses. Dr. Grover J. "Russ" Whitehurst is the director of the Brown Center on Education Policy at the Brookings Institution. Previously, he was the first director of the Institute of Education Sciences.

Dr. Caroline Hoxby is the Scott and Donya Bommer Professor in Economics at Stanford University, the director of the Economics of Education program at the National Bureau of Economic Research, and a senior fellow of the Hoover Institution and the Stanford Institute for Economic Policy Research.

Mr. Steve Fleischman is the deputy executive officer of Education Northwest, formerly known as Northwest Regional Educational Laboratory, the organization that has managed the REL Northwest Laboratory since 1966. He has also served as director of REL Northwest.

Lastly, Dr. Eric Smith is the former commissioner of education for the state of Florida. Dr. Smith is currently a consultant to a number of state education chiefs and school districts on several education reform projects.

Before I recognize each of you to provide your testimony let me briefly explain our lighting system. When you start it will be green, you will have 5 minutes; when you have 1 minute left it will turn yellow; and when it turns red we would ask you to wrap up as best as you can. After everyone has testified, the members will have 5 minutes to ask a question of the panel.

I would now like to recognize Dr. Whitehurst for 5 minutes.

STATEMENT OF DR. GROVER J. "RUSS" WHITEHURST, SENIOR FELLOW AND DIRECTOR OF THE BROWN CENTER ON EDUCATION POLICY, BROOKINGS INSTITUTION

Mr. WHITEHURST. Thank you, Mr. Chairman and members of the committee. I really appreciate the invitation to testify, and I am pleased that you have such a keen interest in education research and reauthorizing ESRA.

Everyone in the room knows that education is important. It has been true in this country throughout its history. In fact, before we

were a country a first thing that a small, colonial village would do is set up a school once it had enough kids to require schooling.

But in an age of globalization and the advent of a knowledge-based economy, the imperative for us to educate well is stronger than it has ever been. High quality education research is critical to the nation's effort to deliver better education and a future of opportunities to our citizens. Without good evidence we are destined to embrace education policies that move us forward, backwards, and sideways, and we are not even going to know in which of those directions we are heading.

The Educational Sciences Reform Act, which originated in this subcommittee in 2001, made great strides towards improving quality and independence of federally sponsored education research. Prior to that legislation the federal stewardship of education research was widely viewed as a failure.

Since then, we have seen considerable progress in the quality and relevance of that research and evidence for that comes from a number of sources. Let me just give you a very short list of some things we know now that we did not know 10 years ago that are a product of the federal investment in education research.

On teachers, we know that teachers vary dramatically in their effectiveness. A very effective compared to a very ineffective teacher can create achievement gains for a child in 1 year that can wipe out a third of the achievement gap between white and black students, and you can see the effects of a very effective teacher in elementary school all the way into adulthood, in terms of college-going and job earnings.

On the organization of schools, we know now that no excuses charter schools in urban areas do a dramatically better job than traditional public schools in raising student achievement.

On standards, we have learned that the quality of state standards for what students should know, contrary to what seem to be reasonable assumptions, bear no relationship to student achievement. The states with the best standards can have low levels of achievement relative to states with weak standards, and vice-versa.

On the effectiveness of federally funded education programs, we now know that a significant number of those programs are not achieving their intended effects.

And finally, on basic learning and instructional processes we have a whole list of things we have learned, including the interesting fact that testing students on the content of the classroom assignments produces substantially more learning than the same amount of time spent restudying the material.

So I could provide you a much longer list. There are many things we know now that we did not know 10 years ago. If knowledge is power we are in a much better shape than we used to be, and that augurs well for the future.

ESRA is overdue for reauthorization. I will not take you through a to-do list for reauthorizing the law. Let me simply say it is a pretty good piece of legislation; I think it needs some fine-tuning, and that is about it.

Finally, I want to address the federal role in incorporating the findings from research into program mandates. No Child Left Behind uses the phrase "scientifically-based research" 111 times—I

counted—and it includes mandates for states and local education agencies to base their practices on research. The most extreme example is the now defunct program, Reading First, which dictated how early reading instruction was to be delivered at the classroom level at a very granular level.

It is a fundamental mistake, in my view, for Congress to dictate how states and LEAs should use findings from research. Research is seldom definitive. Its reflection in statute and on-the-ground implementation is typically flawed, and our knowledge advances at too fast a rate for legislation to keep up.

Instead of telling states and local education agencies what they should do and appealing to research as a justification, in my view, Congress should focus on creating incentives for practitioners and policymakers to incorporate research findings into their programs. Those incentives should be based around the performance of schools.

When my grandfather learned about research findings that would help him generate a higher yield from his farm he didn't need to be told by government that he had to utilize those findings; it was in his self-interest to do so and he did. Likewise, education providers will use research when it helps them do something for which they are accountable.

There are two ways to fashion an accountability system that will create a demand for research findings. One is top-down regulatory accountability, as we have seen in No Child Left Behind. Washington says, "Here are your targets for student achievement. If you don't meet them the following things will happen."

The other approach is bottom-up marketplace accountability. Parents are given choices of where to send their kids to school. They get good information on school performance. Funding follows kids. Schools that aren't performing well lose students and funding. The managers of those schools are motivated to improve their performance and seek solutions, including those from good research.

I am in favor of a market-based approach to creating demand for research and I urge you to consider it in the context of the reauthorization of the Elementary and Secondary Education Act.

In conclusion, as a result of rigorous and relevant education research we know much more than we did about what works and what doesn't in education than we did a few years ago. We have got a long way to go before we know enough to assure a good education to every student.

We have started. We are making progress. I appreciate this committee's understanding of the importance of the work and the critical role the federal government plays in advancing it.

Thank you, Mr. Chairman.

[The statement of Dr. Whitehurst follows:]

Prepared Statement of Dr. Grover J. "Russ" Whitehurst, Senior Fellow and Director of the Brown Center on Education Policy, Brookings Institution

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE: I am Russ Whitehurst. I direct the Brown Center on Education Policy at the Brookings Institution. Prior to holding my present position, I was the founding director of the Institute of Education Sciences within the U.S. Department of Education. Before entering government service I had a long career as a researcher and academic administrator.

Thank you for the invitation to testify. I am pleased that there is such interest and leadership in addressing the quality of education research in America.

Everyone in this room knows that education is important. I expect that all of us have had an experience with a teacher, a class, an educational institution, or through independent learning that has changed our lives. I certainly have. The American dream of opportunity and advancement and the educational system of the United States are inextricably connected. This has been true throughout our history. Indeed, well before the country was founded it was typical for colonial villages that had grown to more than a few hundred people to establish and fund a public school, with the first dating to 1639. Since that time, we have continued to value education and invest in it. But in an age of globalization and the advent of a knowledge based economy, the imperative to educate and educate well is stronger than it has ever been. The evidence that nations with a better educated populace experience higher growth rates is compelling, and during the current economic downturn the unemployment rate in the U.S. for young adults with just a high school diploma has been three times the rate for those with a college degree.

High quality education research is critical to the nation's effort to deliver better education and a future of opportunity to our citizens. Without good evidence on the condition of education, what works and what does not, fundamental processes of learning and instruction, and breakthrough instructional technologies we are destined to embrace education policies that move us forward, backward, and sideways without even knowing in which of those directions we're heading. Without good education research, our approaches to education reform are more akin to fashion and fancy—the width of a man's tie or the length of a woman's skirt—than to anything that is rational and benefits from a systematic examination of evidence.

Think of what federal investments in agricultural research have accomplished. My grandparents were farmers during the transition from the way things had always been to farming based on the knowledge produced by agricultural research. I remember well my grandfather coming back from a meeting with an agricultural extension agent excited about what new seeds and new approaches to crop rotation could do for the family farm. And because he was an early and eager adopter of research-based approaches to farming, he was always ahead of his neighbors in wringing a living from his land. These days America is the breadbasket for the world, largely because we invested in agricultural research and figured out how to disseminate the knowledge derived from that research to those who farm. We are on the cusp of a transformation of education to an evidence-based field that will have many similarities to the changes in agriculture that my grandparents experienced. The actions this Committee takes as it shapes the federal role in education research will have far reaching effects on the quality and productivity of our schools, and through that on our economy and future.

Mr. Chairman, the Education Sciences Reform Act, which originated in this subcommittee in 2001 and currently governs the education research enterprise at the Institute of Education Sciences within the U.S. Department of Education, made great strides towards improving the quality and independence of federally sponsored education research. Prior to that legislation, the federal stewardship of education research was widely viewed as a failure. To that point, in 1999 the National Academies of Science came to the conclusion that:

One striking fact is that the complex world of education—unlike defense, health care, or industrial production—does not rest on a strong research base. In no other field are personal experience and ideology so frequently relied on to make policy choices, and in no other field is the research base so inadequate and little used.

Since the National Academies report and as a direct result of Education Sciences Reform Act we have seen considerable progress in the quality and relevance of education research. Evidence for this comes from numerous sources, not the least of which is the Office of Management and Budget. OMB's most recent program assessment of the Institute of Education Sciences concluded that—

Since its creation by the Education Sciences Reform Act of 2002, IES has transformed the quality and rigor of education research within the Department of Education and increased the demand for scientifically based evidence of effectiveness in the education field as a whole.

Let me give you some examples of things we've learned from recent education research that are very important to improving America's schools and student achievement.

- *On teachers*

Teachers vary dramatically in effectiveness—a very effective compared to a very ineffective teacher can create achievement gains for a child in one year that can wipe out a third of the achievement gap between white and black students.

On-the-job performance is the single strong predictor of how good a teacher will be in the future—almost every other observable characteristic of teachers is at best

only weakly predictive of how they will perform in the classroom, e.g. whether they are regularly certified or not, were trained in a school of education or not, got a high or low score on a certification exam, received a lot of professional development or a little, and were mentored as novices or not tells us almost nothing about how effective they will be as teachers.

Most professional development programs for teachers are a waste of time and money.

- *On the organization of schools, choice, and competition*

No excuses charter schools in urban areas do a dramatically better job than traditional public schools in raising student achievement.

Armed with good information on school performance and the ability to choose schools, low-income parents choose better schools than the ones to which their school district would assign their children, and their children do better academically as a result.

Schools that are subject to competition from other schools for students improve more than schools not subject to competition.

- *On standards, accountability, and curriculum*

The quality of state standards for what students should know bears no relationship to student achievement—states with the best standards can have low levels of achievement relative to states with weak standards and vice-versa.

No Child Left Behind-type accountability for schools and districts raises student achievement modestly, with the effects focused in mathematics in the earlier grades.

Curriculum choices can make a sizable difference—for example the difference between using the most effective vs. the least effective elementary school mathematics curriculum, each costing about the same, is as much as a third of a year of learning over the course of one school year.

Presently available educational technology programs as used in schools do not raise student achievement.

- *On the effectiveness of federally funded education programs*

There is a long-list of federal education programs that have no measurable effect on student outcomes, including:

- The 21st Century Community Learning Centers Program (afterschool)
- Even Start
- Head Start (for outcomes at the end of first grade)
- Upward Bound
- Reading First
- On basic learning and instructional processes

Spacing the occasions when students are asked to study related content rather than massing the study of that content into a short time frame remarkably increases learning and retention.

Testing students on the content of their classroom assignments produces substantially more learning than the same amount of time spent restudying the material.

I could provide many more pages of example of things we know now about education that we did not know 15 years ago. If knowledge is power, we're in much better shape than we used to be and that augurs well for the future.

The Education Sciences Reform Act is overdue for reauthorization. I will not take you through a to-do list for reauthorizing the law, one reason being that the National Board for Education Sciences has already generated such a list and I'm supportive of the Board's recommendations. Let me simply suggest three principles that should underlie the reauthorization.

1. *If It Ain't Broke Don't Fix It*—There are various groups, with the American Educational Research Association being the most prominent, that would have you make fundamental changes in the law that appeal to their interests. They would, for example, have you change the definitions of what constitutes rigorous research and evaluation to lower the methodological bar their members confront when trying to obtain federal grant money, and they would have you separate the National Center for Education Statistics from the Institute of Education Sciences in order to create another federal entity that they can try to influence and with which they could curry favor. The key question you should ask of advocates of any significant changes in the language in the bill is, "What evidence do you have you that the current language has had bad effects?" ESRA a pretty good piece of legislation and most efforts to change it are going to come from organizations that want a return to the wonderful days of yesteryear when education research produced little of value except funding for education researchers.

2. *Independence Is Fundamental*—One of the most important advances in the Education Sciences Reform Act was to create a greater degree of independence be-

tween the Department's research arm and the political leadership of the Department. I led the Department's research office for 8 years under two secretaries and multiple lesser political appointees. I had good relationships with the political leadership of the Department and we worked well together, but I needed every bit of independence granted me by statute along with a fair amount of grit to keep my office and its functions from being politicized. I think this is in the nature of the beast rather than the personalities or political parties involved. Anything you can do to further arm future IES directors with independence from political direction will be positive. At the same time, the IES director needs to be inside the tent in order for the Department to benefit from education research and to have education research informed by insights on federal policies.

3. The Regional Educational Lab Program (the RELs) Is Broken and Should be Fixed—The REL program goes back to 1966 and the very first Elementary and Secondary Education Act. Since then, year in and year out, the RELs have pulled down a significant proportion of the total federal investment in education R&D with little to show of value from that investment and a lot to show that should be an embarrassment. I don't think any amount of tinkering with the legislative language that authorizes the RELs or aggressive intervention by the Institute of Education Sciences can fix what is wrong with the program. But there is a function the RELs are intended to serve that is desperately needed: helping states answer questions about the effectiveness and productivity of their own education programs using state administrative data. The goal of having statewide longitudinal education databases in every state was pursued vigorously in the George W. Bush administration. The Obama administration has added substantially to funding for this effort through the American Recovery and Reinvestment Act of 2009. In the near future all states will have data warehouses with longitudinal student achievement data linked to a variety of education input variables. However, having data available and being able to use it are two different things. Only a few states have the staff capacity within their state education office to conduct analyses of longitudinal data to address policy questions. This means that most policy initiatives fly blind, both in original design and subsequent appraisal. RELs might be assigned through legislation to carry out this task, but they have multiple masters (including the federal government, their own boards, the governors and state legislatures in their region), they vary substantially in their capabilities, and they have no easy way to prioritize among various claims on their resources. It would be much better in my view to eliminate the REL program and substitute for it a research voucher program for state education departments. The current REL budget would be split among states, taking some account of state population but making sure that smaller states receive a cut of the pie that is large enough to be useful. The states could spend their vouchers to contract for research on issues of high interest to them. The research plans and products would undergo methodological review at IES to assure quality, but would otherwise be independent of the Department. The current RELs could compete for this work. If they could do the work well they would prosper. If they could not they would have to go into another line of work. It is a marketplace solution to a problem that has proven intractable to previous legislative and administrative solutions.

4. You Get What You Pay For—Although federal budgetary support for education research has increased in the last decade, it remains a pittance when compared with levels of investment in research, evaluation, and statistics in other areas of the economy. For example, more than 40% of the discretionary budget of the U.S. Department of Health and Human Services is invested in knowledge production and dissemination through the National Institutes of Health, the Centers for Disease Control, the Food and Drug Administration, and many other operational components. In the U.S. Department of Education, the corresponding investment is less than 1%. In education research and development, no less than in R&D in health or transportation or communication or energy or agriculture, the public gets what it pays for.

Finally, I want to address the federal role in incorporating the findings from educational research into program mandates. NCLB uses the phrase "scientifically-based research" 111 times, and includes many mandates for states and local education agencies to base their practices on the findings from such research. The most extreme example is the now defunct program, Reading First, which dictated how early reading instruction was to be delivered at a very granular level based on research findings. There is no evidence that children are reading better as a result. It is a fundamental mistake, in my view, for Congress to dictate how states and LEAs should use findings from research. Even if the research were absolutely definitive, which it seldom is; and Congress could translate it into legislation without distortion, which it can't; and bureaucrats in the U.S. Department of Education could implement it unimpeachably, which is unlikely; science is dynamic. We shouldn't ac-

cept a process that requires Congress to rewrite legislation in order to bring education practice in line with evolving research findings.

Instead of telling states and local education agencies what they should do and appealing to research as the justification, Congress should focus on creating incentives for practitioners and policy makers to want to incorporate findings from the best research into their programs. Those incentives should be around the performance of schools. If those who are responsible for the management of schools are held accountable for schools' performance, and if research findings are both readily consumable and provide a obvious boost to school performance, then the research will be utilized. When my grandfather learned about research findings that would give him a leg up in the yield from his farm he didn't need to be told by big government that he had to base his practices on that research. It was in his self-interest to do so because he was accountable for earning a living from his farm. Likewise, education providers will use research when it helps them do something for which they're accountable.

There are two ways to fashion an accountability system that will create a demand for research findings. One is top-down regulatory accountability as we've seen in NCLB—Washington says, "Here are your targets for student achievement. If you don't meet them the following unpleasant things will happen." The other approach is bottom-up market place accountability—Parents are given choices of where to send their children to school and good information on school performance. Funding follows the child. Schools that aren't performing well lose students and funding. The managers of those schools are motivated to improve their performance and seek solutions, including those from good research.

I'm in favor of the market-based approach to creating demand for education research and I urge you to consider it in the context of the reauthorization of ESEA.

We know much more about what works and what doesn't in education than we did 15 years ago as a result of advances in research, but our level of ignorance dwarfs our understanding by orders of magnitude. It has been so in the early years of the transformation of other fields to evidence-based practice. Moving education to a point at which our research base is sufficient to assure a good education for every student is the work of a generation, not of a few years. We've started and we're moving in the right direction. I appreciate this Committee's understanding of the importance of the work and the critical role the federal government plays in advancing it.

Chairman HUNTER. Thank you, Doctor.
Dr. Hoxby is recognized for 5 minutes.

STATEMENT OF DR. CAROLINE HOXBY, SCOTT AND DONYA BOMMER PROFESSOR OF ECONOMICS, STANFORD UNIVERSITY

Ms. HOXBY. Mr. Chairman and members of the committee, thank you very much for inviting me to testify. It is an honor.

The United States faces a bleak future if we do not improve the education of our population. The American industries that are still growing quickly and exporting are those that are most dependent on having educated workers, and if our economy is to grow fast enough to solve our fiscal problems we really need to have a more productive education sector—in other words, achieve more with the same amount of spending.

As the Education Sciences Research—Reform Act greatly transformed education research and moved it much closer to the successful models that we associate with the National Science Foundation and the National Institutes for Health. Crucially, ESRA stated that education research should meet high scientific standards. Before ESRA, much of U.S. Department of Education-funded research was wasted on fairly unreliable studies that misinformed families and educators.

The most acute problem prior to ESRA was that Department of Education-funded studies often made bold causal claims when they

used unscientific methods that really could not support those claims. Claims of causation (such as stricter teacher licensure raising student achievement), were made when the study often showed nothing more than a correlation. And in that particular case, it turns out that the correlation is not particularly informative about the causal effect of teacher licensure on achievement.

I want to make three main points. The first is that although IES has greatly improved education research, vigilance and continued improvements are needed. We must continue to raise, not relax, scientific standards.

My second point is that the federal government, universities, and philanthropic organizations should share the responsibility for supporting education research. And my third point is that the research functions of the U.S. Department of Education should be the functions on which people can most easily agree, and this is because all markets work better when the people in them are informed, in this case parents, students, and educators.

I think scientific research is one of our best hopes for improving American education quickly without our having to spend more money.

So IES has greatly improved education, but now is the time to further raise standards, not relax them. I don't think high scientific standards are so ingrained in the education research community that IES can afford to take its foot off the gas.

Since its creation, IES has mainly promoted experimental and quasi-experimental methods. These methods tend to produce reliable results as long as they are used properly, and they are not terribly difficult to use properly.

Perhaps something like 10 percent of randomized base studies are unreliable, and that number might rise to about 25 percent with quasi-experimental studies. That the mistakes are not corrected by the authors themselves does demonstrate, however, that even experimental studies are not dummy-proof.

Moreover, there are many important questions that cannot be answered with experimental studies and the remaining evaluation methods require even more expertise to apply. This means that IES, if it is to be able to answer all the questions of interest to the American people, needs to develop greater expertise.

Expert review panels are the main means by which IES maintains high standards. While IES reviewing is not yet quite the equal of NSF reviewing, in my experience it has made remarkable progress, and I would say that the institute is now in a virtuous cycle whereby good standards attract good reviewers, and the good reviewers attract good proposals. It is a virtuous cycle, but vigilance is needed because that can easily break down into a vicious cycle where poor standards attract poor proposals for research.

Another thing that IES is doing well but that requires vigilance is data collection. IES has traditionally been very strong in collecting survey-based data, but now most top-notch education research is migrating away from survey data and towards administrative data sets based on schools' records. This is because most scientific methods now require the completeness and the large scale of administrative records.

Unfortunately, our country is not at the frontier in this. Most South American countries and most Northern European countries have better administrative data sets than we do.

This is a problem because researchers tend to migrate towards doing research on the things for which there is the best data. For instance, right now I could write a much better study of Dutch school choice reforms than I could of American school choice reforms. Their data are just better.

The final thing that IES has done well that Dr. Whitehurst also mentioned is really courageously contract for rigorous studies of high profile programs. And I would cite as examples the evaluation of the D.C. Opportunity Scholarship Program and the evaluation of the 21st Century Community Learning Centers. It is not acceptable for taxpayers to continue to pay for programs year after year after year without having any rigorous evidence on whether the programs actually work.

My second point is that responsibility for education research should be shared by the federal government, universities, and philanthropic organizations. Each one of these entities plays a distinct role.

I have already mentioned that the federal government should collect data, but it also needs to be a supporter of university-based scholars, and I will return to this point. Philanthropic organizations also play a key role, but unlike the federal government, they should be mainly interested in the evaluation of speculative, innovative programs, and that is because they are using donors' money to evaluate programs rather than using taxpayers' money.

Finally, universities: University-based researchers are primarily responsible for developing new scientific methods, validating them, and training people to use them. It is essential that these researchers interact with the federal government on a regular basis so that cutting edge methods are known by researchers at IES.

Another important role for university researchers is to work on topics that are currently politically unpopular. If they had not been doing research on school choice in the 1990s we wouldn't know very much about it today, and they didn't make very many friends doing that research.

Finally, I said that the research functions of the U.S. Department of Education should be the functions on which people can most easily agree. Americans really do disagree on the extent to which the federal government should mandate education standards and policies, and many Americans believe that it should be families who make most of the choices.

But really no one argues that anyone—the families, educators, or policymakers—would be better off if they had less access to reliable information, and that means that it is one of our best hopes to improve education if we use scientific information to spend smarter rather than just spending more. Thank you.

[The statement of Dr. Hoxby follows:]

**Prepared Statement of Dr. Caroline Hoxby, Scott and Donya Bommer
Professor of Economics, Stanford University**

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE: My name is Caroline Hoxby. I am the Scott and Donya Bommer Professor of Economics at Stanford University and the Director of Economics of Education at the National Bureau of Economic Re-

search, the nation's leading nonprofit economic research organization. I served for several years as a presidential appointee to the National Board for Education Sciences. Over my career, first at Harvard and recently at Stanford, I have conducted research on a wide array of topics in elementary, secondary, and higher education including class size, charter schools, college tuition, school finance, and bilingual education. There is a common theme in my research and the research of the many Ph.D.s I have trained: we attempt to answer questions in education by applying the most reliable, most advanced, most scientific methods to the best available data.

Thank you for the invitation to testify. It is an honor to address you, and I believe that today's topics are absolutely key to improving education in the United States.

The United States faces a very bleak future if we do not figure out how to quickly and continuously improve the education of our population. The American industries that are still growing, thriving, and exporting are the industries that are most dependent on educated workers. If our economy is to grow fast enough to help solve our fiscal crisis, we must have a smarter, more productive education sector, not one that is simply more costly.

If this sounds like an insurmountable challenge, it is only because Americans can point to so little educational improvement over the past four decades that we, as a nation, have begun to believe that very little improvement is possible. Contrast this with medicine or almost any other field of applied knowledge. If we were offered the choice between a medical procedure that relied on today's knowledge versus the knowledge of 1970, we would—all of us—choose today's. We would probably be ambivalent about today's schools versus the schools of 1970.

The difference between education and medicine is not that improvement is impossible in education but possible in medicine. It is not that all children are difficult to manage and all patients are easy to manage. The difference is that education has not, until recently, benefitted from rigorous, scientific research.

The Education Sciences Reform Act (ESRA) of 2002 greatly transformed education research, moving it much closer to the successful models used by the National Science Foundation and the National Institutes of Health. ESRA stated unequivocally that the Institute for Education Sciences (IES) should facilitate research that met high, scientific standards in order that it produce reliable results. This was the crucial statement. Until ESRA, much of the U.S. Department of Education's budget for research was wasted on studies that were widely recognized to be unreliable. Not only was taxpayer money wasted, but the Department unintentionally endorsed and promoted poor research methods by funding low-standard studies.

Prior to ESRA, there were two particularly acute problems with Department of Education-funded studies. The first was that they often employed subjective measures of what schools did and what students achieved. If a study relies on subjective measures, a researcher's ideology often dictates what the data says. The second and more pervasive problem was that Department-funded studies often made bold causal claims despite the fact that they used methods that could not possibly support such claims. Claims of causation—such as “stricter teacher licensure rules raise student achievement”—were made when the study showed nothing more than a correlation. For instance, in my example, schools with a higher percentage of teachers who are licensed are schools that serve students who come from more advantaged backgrounds. These students tend to have higher achievement regardless of how their teachers are licensed. It turns out that the correlation between teacher licensure and achievement tells us literally nothing about the causal effect of teacher licensure on achievement. In short, prior to ESRA, Department of Education-funded research routinely provided misinformation to American families and schools.

I support the recommendations that the National Board for Education Sciences has already made regarding the reauthorization of ESRA. Those recommendations, however, are necessarily detail-oriented. In my remaining time, I wish to provide a “big picture” perspective on ESRA, IES, and—more broadly—the role of the federal government in education research.

I have three main points.

1. IES has greatly improved education research since the enactment of ESRA, but vigilance and continued improvements are needed. We cannot afford to relax standards now. Rather, even higher scientific standards should be the goal.

2. The federal government, universities, and philanthropic organizations should share the responsibility for supporting education research. This mixed model, somewhat peculiar to the U.S., is essentially the right model. Each entity plays an important and distinct role.

3. The data collection and research support functions of the U.S. Department of Education should be the functions on which people with diverse political views can agree. This is because no market functions better in the absence of information on

which parents, students, and schools can make choices. Also, truly scientific research in education is probably our best hope for improving the skills of Americans quickly, with the expenditures we are already making.

Again, my first point is that IES has greatly improved education but that now is the time to further raise, not relax, the scientific standards that are the crucial contribution of ESRA. We are not yet in the situation where high, scientific standards are so ingrained in the education research community that IES can take its “foot off the gas.” Since its creation, IES has consistently promoted scientific methods by favoring studies that employ experimental and quasi-experimental methods such as randomized controlled trials, randomization built into pilot programs, and regression discontinuity. These methods produce reliable results when used properly. That is why they are also used in fields such as medicine and social program evaluation. Vigilance is needed, however, because even the best experiment is not “dummy proof.” IES should continue to raise the bar, insisting on even better training in issues like attrition and measurement that arise in experiments. Also, not all important questions can be answered with experimental or quasi-experimental methods, and IES therefore needs to develop greater expertise in other evaluation methods, methods that produce reliable results only when they are applied by researchers who are very highly trained.

Expert review panels are the key means by which IES gains access to expert opinion, maintains high research standards, and improves its own staff’s knowledge of the latest methods and research. The Department of Education’s expert panels have improved greatly since the enactment of ESRA. They now contain a sufficient percentage of well-trained experts that the panel process can be said to, very often but not always, fund research that produces reliable results. While IES reviewing is not yet equal in quality to the NSF reviewing I have experienced, IES has made remarkable progress. The Institute is only able to convene top experts and attract high quality proposals because researchers believe that the Department turned the corner with ESRA and now promotes scientifically-grounded research. Top experts only participate in review processes in which they believe. Top researchers, who can devote themselves to issues other than education, only submit proposals to reviewers who are expert enough to judge proposals well. In other words, IES is currently in a virtuous cycle: higher scientific standards induce participation by more expert reviewers. This leads better researchers to submit higher quality proposals, and the cycle continues. Vigilance is necessary, however: the virtuous cycle can easily break down and become a vicious cycle in which poor standards lead to poor participation, at which point the review process attracts only poor proposals.

Another thing that IES is doing well but that requires vigilance is data collection. IES, through its National Center for Education Statistics, has been collecting survey data on students and schools for decades. These data tend to be well-respected—this is one function of the Department’s research arm that was high quality prior to ESRA. However, top-notch education research has migrated away from survey data and towards detailed administrative data. About 75 percent of studies published by top applied journals now rely on administrative data—datasets based on schools recording what a student does, what teachers and policies and classrooms he encounters, and what outcomes he attains, both in the short-term (test scores) and long-term (college graduation, earnings, and so on). The reason that research is migrating from survey to administrative data is that modern scientific methods that produce reliable estimates often require the large scale and completeness of administrative data. While the U.S. continues to have some of the world’s best survey data on education, our country has fallen far behind the frontier in administrative data on education. Currently, most northern European countries and some South American countries have substantially better administrative data than the U.S. This matters because top researchers are motivated just as much by the availability of data that allow them to write excellent studies as they are motivated by funding. Thus, researchers are increasingly drifting away from the analysis of U.S. education policies and toward the analysis of other countries’ education policies. To be concrete, I could now write a study of English, Dutch, or Swedish school choice reforms using better data than are available to me in the U.S. IES is making valiant efforts, which I praise, to create and sponsor stronger administrative databases, but this is another area in which continued exertion is needed. Integrating states’ data and data from its own agencies (like the National Student Loan system) is probably the cheapest and quickest way for IES to improve education research.

A final thing that IES has done well under ESRA is courageously contract for rigorous studies of high profile programs and programs on which the federal government already spends substantial money. I would cite, as examples, the evaluation of the D.C. Opportunity Scholarship Program, the evaluation of the 21st Century Community Learning Centers, and the evaluations of Professional Development pro-

grams in mathematics and reading. It simply does not make sense for U.S. taxpayers to fund programs year after year in the absence of scientific evidence of their effects, and findings from such rigorous studies should play an important role in any debate about their future. You may have observed that I said these contracts were courageous. They were. When one conducts a study using strong, scientific methods, one cannot know how it will turn out. It is always possible that some constituency will be angered by the results, but—then—that is the entire point of doing research. If we could accurately choose education programs simply by knowing “in our hearts” that they were right, we would already have very successful schools.

There are a few areas in which IES has great intentions but is not having the effect for which it hopes. The Regional Education Laboratories and the What Works Clearinghouse are examples.

My second point is that support and responsibility for education research should be shared by the federal government, universities, and philanthropic organizations. In the U.S., we have a successful model in which each of these entities plays an important and distinct role. While I would never argue that our model is perfect, I am routinely struck by how well it functions when I am abroad and experience other countries’ education research. A similar mixed model of support is used for medical research.

The federal government should play a few roles in education research. First, and most obviously, it should collect and make available accurate data on all aspects of education that can be measured: expenditures, revenues, achievement, personnel, curriculum, school policy, and so on. Because there are enormous economies of scale and scope in data collection and because cross-state comparisons are so important to research, it is important that the federal government and not just state governments collect data and make it available in a timely way.

Second, the federal government should publish descriptive reports on American education. The word descriptive is important because such reports are part of the government’s duty to disseminate data, rather than a duty to do causal research. A report that describes where English Learners enroll is descriptive. This must be distinguished from research that attempts to test a causal hypothesis such as whether bilingual education raises English Learners’ achievement. The federal government is not in a good position to conduct causal research itself. This is because such research requires methods that need expert review, and the government cannot both convene the reviewers and be the entity that is reviewed. In the same way, we would not want an accused person to convene his own jury. A good review process requires independence.

Third, the federal government should contract for highly reliable evaluations of the education programs it supports. These evaluations cost only a small fraction of what is spent on the programs themselves. For this small expenditure, a good evaluation can save taxpayers vast amounts of money, either by providing the evidence that improves a partially-successful program or by providing the evidence that gives Congress the grounds for abolishing an unsuccessful program. The federal government should be prepared to fund evaluations of its programs with little financial help from universities or philanthropies. This is because the goal of such evaluations is not to be innovative or to explore new questions. The goal is to produce clear answers to well-specified questions regarding established programs. The ideal evaluation should employ methods that are well-validated that the evaluation is boring in every way except for the results. Fortunately, in the U.S., we have active competition for such contracts among a good number of organizations: Mathematica, Abt, Rand, Westat, AIR, MDRC, and so on.

Fourth, the federal government should share in the support of (but not be the exclusive supporter of) research by university-based and similar scholars. These are the people who develop new methods, who ask questions that are still somewhat speculative, and who conduct “basic research” in education. I will return to this point.

Philanthropic institutions also play a vital role in education research. In some ways, their role parallels the federal role except that philanthropies should focus more on trial programs that are innovative and less on established programs funded by the government. This is because the government uses money that taxpayers are obliged to pay while philanthropic organizations use money that their donors freely give. If a philanthropy spends money on a speculative educational program that does not succeed, the consequences fall on its donors—people who are affluent enough to accept this risk in return for the prospect of developing exciting new programs that benefit society. Philanthropies can obtain reliable evaluations by contracting with the same organizations that contract with the federal government. And, like the government, philanthropies should share in supporting research by university-based and similar scholars.

Let me now turn to the role of university-based researchers. As I mentioned, university-based researchers are primarily responsible not only for developing new and more scientific methods of evaluation, but also testing them, validating them in an array of applications, and training people to use them. For instance, university researchers developed the cutting-edge methods to deal with attrition and non-compliance in randomized controlled trials. They also developed the quasi-experimental methods that are currently the workhorses of evaluation. In addition, university-based researchers are almost entirely responsible for conducting basic research—research that has no immediate policy relevance but that provides fundamental information on which policies should be ultimately based. For example, I study peer effects—how students’ achievement is affected by the other students who share the classroom with them. This basic research is a fundamental that we need to evaluate policies like school choice that affect which students are in each school. Another good example of basic research is the recent spate of studies that show (a) that different teachers have very different effects on achievement and (b) that a teacher’s effect is not related to her credentials. This basic research is a fundamental we need for thinking about teacher pay incentives, teacher training, teacher tenure, and policies that affect which teachers end up in which schools. Finally, university researchers should be primarily responsible for investigating educational programs that are speculative, still under development, or implemented on a purely trial basis. University researchers must also do the uncomfortable work of analyzing programs that are currently unpopular with the administration and/or philanthropies. As an example of a purely trial program designed and investigated by university researchers, I would point to the recent study that shows that students are more likely to enroll in college if their family can automatically file the Free Application for Federal Student Aid when it files its taxes. As an example of unpopular research, I would point to studies of school choice from the 1990s. Researchers who worked on such topics did not win many friends in the education establishment, but we are now glad that the studies exist because they inform us about how to structure choice policies.

I have said that the federal government and philanthropies should share in the support of university-based education research. Why? If the government and philanthropies do not have “skin in the game”, they will not attract university researchers to study the policies or develop the methods that are important to them (the government and philanthropies). They will not attract top experts to review the contract-based studies they support. They will not learn about cutting-edge research and cutting-edge methods in real time. It is the nature of cutting-edge work that you cannot learn about it just by reading an article after the fact. You need to interact with researchers—ask them questions, pose alternatives.

Universities themselves should also share in supporting education research. Why? If we want university-based researchers to invent better methods and conduct basic research, they need to be rewarded for these activities. No one is better at generating these rewards than universities themselves. This is because universities’ constituents give them incentives to create knowledge that is original and a public good, as all basic research is.

By sharing in the support for educational research, the federal government, universities, and philanthropists also share in setting the research agenda. This is a good thing. Innovation never benefits from one entity having a monopoly on what questions are interesting.

My third and final point is brief. The data collection and research support functions of the U.S. Department of Education should be the functions on which people can most easily agree. Americans tend to disagree on the degree to which the federal government should mandate educational standards and impose policies on schools. Many Americans believe that families and local communities should make education choices for themselves. But, it is hard to argue that anyone—families, communities, schools, or federal policy makers—will make better choices if they have less access to reliable information. As I stated at the outset, Americans badly need to be better educated—and soon—because our economic growth and well-being depend on this. I truly believe that our best hope is to improve education by spending smarter—using scientific methods to identify which programs and policies are effective and which are counterproductive or just a waste of money.

Chairman HUNTER. Thanks. I think we can all agree, too, that 5 minutes really is not that long to talk, is it? Not very long.
Mr. Fleischman?

STATEMENT OF MR. STEVE FLEISCHMAN, DEPUTY EXECUTIVE OFFICER, EDUCATION NORTHWEST

Mr. FLEISCHMAN. Chairman Hunter, Mr. Holt, members of the subcommittee, thank you for this opportunity to offer testimony. I think that what I say will continue in the theme of trying to provide better evidence for better decisions.

I am Steve Fleischman. I am the deputy executive officer of Education Northwest. I have been involved in the promotion of evidence-based education for more than 15 years.

I believe, however, that my most important qualification for offering testimony today is that I am a former middle and high school teacher. When I entered teaching as a second profession in the mid-1980s there was almost no evidence that I could find to help me manage my class better, teach my history lessons more effectively, improve the writing skills of my students, on and on. We have come a long way since then, but not far enough.

Before becoming a teacher I was a business person, and I often think in market terms. To me, the challenge in building an effective education research enterprise is to create a market that has mechanisms to supply high quality research, create demand for it, and ease its use.

Peter Drucker often observed that there is no business without a customer. Simply put, I believe that we will not have an education system in which reliable evidence is widely used to drive decision making unless and until we provide educators the research they want and need.

Recent studies on research use by educators, including one conducted by my own organization, document this research-to-use gap. Three findings from our study, however, suggest important principles to narrow this gap.

One: Research should be contextualized. The observation that all politics is local has its equivalent in the observation that all research is local. That is, participants in our study expressed a strong preference for research evidence that is linked to local contacts.

Two: Research should be easy to read, absorb, and apply. Participants expressed preferences in how studies should be presented, including the report should be brief and written in nontechnical language.

Three: Research often requires translation and transmission by intermediaries. Intermediaries were identified by the participants as unbiased organizations and individuals that can help locate, sort, and prioritize the available evidence.

IES has taken significant strides in promoting an increase in the amount of rigorous evidence available to educators. As well, regional educational labs and the What Works Clearinghouse have begun to move forward the relevance and usefulness agenda.

Some of the promising practices and developments initiated by IES working with other program offices of the Department of Education include the production of so-called practice guides; the holding of REL bridge events; the Ask A REL information services; coordination across the Department of Education in fields such as research, development, and technical assistance projects; and an increased focus in meeting the real-world improvement needs of edu-

cation stakeholders that I think is exemplified in the new REL competition statement of work.

My suggestions regarding how ESRA can be improved in the next reauthorization result from many conversations, including those held by members of Knowledge Alliance, a trade association of leading education R&D organizations. These recommendations are: One, engage consumers. The most powerful way to increase research use is to engage the prospective consumers of evidence in defining the practical problems that should be analyzed, designing the modes in which findings will be presented, and supporting ways for the evidence to be applied effectively in the field.

Two: Pay attention to implementation. Research consistently demonstrates that even the best programs fail to provide their intended benefits if poorly implemented. Therefore, greater focus should be devoted to learning more about how strong programs and practices can be implemented well.

Three: Support intermediaries. As noted above, research consumers often turn to intermediaries who serve as trusted sources that help sort through the evidence. Many of these trusted sources represent projects and individuals either directly support through current federal research, development, and technical assistance infrastructure or interact with this infrastructure.

Fourth and finally: Promote the coordination of U.S. Department of Education program offices. Taking the point of view of consumers of evidence, education stakeholders should have a much clearer idea of who to contact and what services are available to meet their evidence needs.

I believe that when Congress passed ESRA and created IES it had a vision that science, properly conducted and effectively applied, could be a significant engine in improving education in this country. As Mr. Holt has written and argued, recent history demonstrates that investments in R&D can drive the economy forward. Yet, the Department of Education spends less than 1 percent of its budget on R&D, one of the smallest investments of any federal agency.

Ongoing federal investment in education research enterprise will be required if we are to achieve the promise that all students will receive a quality education that prepares them for fulfilling lives as contributing citizens in our society.

Thank you.

[The statement of Dr. Fleischman follows:]

Prepared Statement of Steve Fleischman, Deputy Executive Officer, Education Northwest; Director, Regional Educational Laboratory Northwest

CHAIRMAN HUNTER, RANKING MEMBER KILDEE, AND MEMBERS OF THE SUBCOMMITTEE: Thank you for this opportunity to offer testimony as you consider how education research can help to promote the identification and use of effective programs to support students and teachers.

I am Steve Fleischman, the deputy executive officer of Education Northwest. We are a nonprofit organization created in Oregon more than 45 years ago to apply research to improve education in the Northwest, and across the country. Some of the projects that we conduct on behalf of the U.S. Department of Education, and which provide part of the experience base for my testimony include the Regional Educational Laboratory (REL) Northwest, Northwest Regional Comprehensive Center, and the Region X Equity Assistance Center.

I have been involved in the promotion of evidence-based education for more than 15 years. In the last decade, with different organizations, I have participated in a

variety of U.S. Department of Education projects to provide educators better evidence, including serving as the first communications director of the What Works Clearinghouse, director of a project to provide education decisionmakers with consumer reporting on the quality and effectiveness of school reform models, and senior leader of the Doing What Works project. Currently, I serve as director of REL Northwest. These and other projects in which I have been engaged have given me insight into the need for better evidence in education that helps identify and implement effective programs and practices. This need led to the passage of the Education Sciences Reform Act (ESRA) in 2002, and the creation of the Institute of Education Sciences (IES).

I believe, however, that my most important qualification for offering testimony is that I am a former middle and high school teacher. When I entered teaching as a second profession in the mid-1980s I did what most other new teachers do: scramble desperately for any support to help do my job. One of the places I turned to was research literature on best practices. There was almost no evidence I could find to help me manage my class better, teach my history lessons more effectively, improve the writing skills of my students, or do any of the other things I needed to do to be a good teacher. This experience has been the single most important one in helping to guide my actions for the past 15 years, as I've been increasingly involved in the education research enterprise. Although the situation is much better today than a quarter of a century ago, we have a long way to go before education research fulfills its promise as an engine of educational improvement.

Before going further in my testimony on the topic, I would like to clarify how I will use the term "education research." My experience is that when making decisions, educators in the field are focused on "evidence use" which can include formal research, program evaluations, reviews of bodies of research, and various data. That is, educators turn to many sources of "evidence" when searching for guidance on policy and practice, formal research being only one of them. In this testimony, I will use this more expansive conception of "education research" that encompasses the sources just mentioned.

Start with the consumer

Before becoming a teacher, I was a business person, and I often think in market terms. To me, the challenge in building an effective education research enterprise is to create a market that has mechanisms to supply high quality research, create demand for it, and ease its use. Peter Drucker, the revered management thinker, often observed that there is no business without a customer. Simply put, I believe that we will not have an education system in which reliable evidence is widely used to drive decision making unless and until we provide educators the research that they want and need.

The past decade has seen advances in increasing the supply of rigorous education research as well as some closing of the "research-to-use" gap. In my testimony I will suggest ways that federal investments and action can help to further close this gap.

Recent studies on research use by educators point to this ongoing challenge. For example, in a 2009 study that my organization and others conducted for the William T. Grant Foundation, a wide ranging group of education practitioners and policymakers observed that:

- There is a gulf between research design and real-world practice, which often results in findings that have limited applicability.
- They are challenged to apply research because of their own lack of knowledge and skills in acquiring and interpreting research.
- Numerous obstacles exist to research use, including "time constraints, the volume of research evidence available, the format in which it is presented, and the difficulty in applying research to their own situations."
- They are often skeptical about research and concerned that it is conducted and reported for ulterior motives or can be shaped to "say anything."
- Research is often not timely.

Most troubling is the fact that none of the study participants could identify any "breakthrough" research or "cite any findings that they feel had a dramatic effect on practice or policy."

Principles for increased research use

Our study cited above and others point to current gaps, but also to ways to improve the connection between research and practice. Three findings from our study suggest important principles to narrow the "research-to-use" gap:

1. Research should be contextualized. The observation that "all politics is local," has its education research equivalent, in which "all research is local." Participants in our study expressed a strong preference for research evidence that is linked to

local contexts. Thus, for research to be seen as useful and to be used, it must be contextualized. One way to accomplish this is to involve education research consumers in studies from the very beginning: in setting the questions, designing the studies, and writing reports that answer questions of local interest.

2. Research should be easy to read, absorb, and apply. Participants expressed preferences in how studies should be presented, including that reports should be brief and written in non-technical language. This principle suggests that much more attention needs to be paid to communicating research effectively. Otherwise, potentially important research findings might not be read at all.

3. Research often requires “translation” and “transmission” by intermediaries. Intermediaries were identified by the participants as “unbiased organizations and individuals that can help locate, sort, and prioritize the available research.” Among examples identified by participants were “research institutions, professional associations, partners, coalitions, peers, networks, and constituents.” A key implication is that it is important to find ways to strengthen the role of intermediaries by making sure they have the knowledge, skills, and resources to play this important role.

The IES track record on promoting research use

Since the passage of ESRA nearly a decade ago, IES has taken significant strides in promoting an increase in the amount of rigorous evidence available to education decision makers. It has improved the quality of quantitative research and data through various mechanisms including grant competitions, sponsored research, and the operation of the National Center for Education Statistics, Regional Educational Laboratory (REL) system, and the What Works Clearinghouse (WWC). While some of these mechanisms have focused largely on increasing research and data rigor others, particularly the RELs and the WWC, have begun to move forward the relevance and usefulness agenda necessary to meet consumer needs and desires for evidence.

Some of the promising practices and developments initiated by IES, working with other program offices of the Department of Education, include:

- The production of Practice Guides. These guides, currently numbering 14 and largely produced by the WWC, offer practical recommendations based on the best available evidence. Developed by panels of nationally recognized researchers and practitioners, they offer actionable recommendations, strategies for overcoming potential practice roadblocks, and an indication of the strength of evidence supporting each recommendation. Topics range from turning around low-performing schools and reducing high school dropouts, to using data to support instructional decision making and structuring out-of-school time to improve academic achievement.

- The holding of REL Bridge Events. These are in-person or webinar events held for education stakeholders across the nation by the 10 RELs to share and discuss the recommendations of the Practice Guides and other rigorous and relevant evidence. The events have proven to be highly popular and represent a key mechanism to link educators to the “best available” research-based guidance on critical topics of regional or local interest.

- Ask A REL information services. Every REL offers this free service that allows education stakeholders to call or e-mail with their questions of practice. These questions are posed by state officials, school board members, superintendents, principals, teachers, parents, and others seeking to find out “what the research says” on particular topics. The requests, which are turned around quickly, often result in research literature reviews that are then shared with other stakeholders.

- Coordination across the U.S. Department of Education research, development, and technical assistance infrastructure. Centers and projects sponsored by various Department program offices have come together more regularly than in the past to hold joint activities that provide stakeholders needed information. One example was a series of regional events on School Improvement Grants (SIG) jointly sponsored by the RELs and Comprehensive Centers this past year. In another recent example, REL Northwest worked together recently with two regional comprehensive centers and the Center on Innovation and Improvement to bring together state officials and leaders from rural SIG schools in five states to learn about effective practices to turn around their schools.

- An increased focus of the REL system on meeting the improvement needs of education stakeholders. In a highly encouraging development, the current IES competition for new REL contractors that will launch a new five-year cycle of REL activity beginning in January 2012 is focused on the creation of research and data-use partnerships with educators and policymakers in the field. These so-called “research alliances” will be long-lasting, help to set the research agendas for the RELs so that they concentrate on real world “problems of practice,” and provide capacity building so that alliance partners are increasingly able to conduct their own research and

data-analysis projects. Without sacrificing rigor, these alliances will go a long way in deeply engaging consumers of research in its production and use.

Considerations for ESRA reauthorization

Discussions in the education research community regarding how ESRA can be improved in its next reauthorization have been ongoing in the field for several years. For example, Knowledge Alliance, a trade association of leading education research and development (R&D) organizations that I currently chair, has engaged its members and experts in the field in this discussion. As well, my own organization's Board of Directors composed of nearly 30 education stakeholders across the states of Alaska, Idaho, Montana, Oregon, and Washington, has been discussing this issue over the past two years. The considerations below are suggestions that have arisen from these conversations. As Congress considers reauthorization of ESRA, I recommend that you keep in mind the following goals which might result in new mechanisms and practices or the strengthening of current ones to better connect evidence and practice:

- Engage consumers. The most powerful way to increase research use is to engage the prospective consumers of evidence in defining the practical problems that should be analyzed, designing the modes in which findings will be presented, and supporting ways for the evidence to be applied effectively in the field. This should include building consumer capacity to find, judge, and apply evidence that is provided at the federal level and beyond. Key consumers on which to focus capacity building efforts might be state education agency and local district staff who lead research and data analysis tasks. Finally, this effort might include studies and other efforts to determine how to better serve education consumers' evidence needs.

- Pay attention to implementation. The identification and sharing of effective programs and practices represents only part of an effort to promote an evidence-based education system. Research consistently demonstrates that even the best programs fail to provide their intended benefits if poorly implemented. Therefore, greater focus should be devoted to learning more about how strong programs and practices can be implemented well.

- Support intermediaries. As noted above, research consumers often turn to intermediaries who serve as trusted sources that help sort through the evidence to find that which is most relevant for consumer decision making needs. Many of these trusted sources represent projects and individuals either directly supported through the current federal research, development, and technical assistance infrastructure or that interact with this infrastructure. Examples of the latter are associations of state education officials, school boards, administrators, principals, teachers, and education journalists. These intermediary organizations must be engaged and supported systematically if we are to improve the connection between research and practice.

- Promote the coordination of U.S. Department of Education program offices. There are notable examples of how program offices such as IES, the Offices of Elementary and Secondary Education, Innovation and Improvement, Special Education Programs, and others work together to promote evidence use. However, there is much more that can be done to promote this coordination. Taking the point of view of consumers, education stakeholders should have a much clearer idea of who to contact and what services are available to meet their evidence needs. Applying this customer-based approach would require the U.S. Department of Education to structure its information and support activities in a more coordinated way to promote an evidence-based system.

Federal investments in education research can pay dividends

This testimony has focused largely on the supply side of the research use equation, in the hopes that if research can be made more timely, relevant, and useful, it will more likely factor into decision making. However, there other aspects of "market building" that I have only mentioned briefly in this testimony that require a federal role. For example, ongoing federal communication regarding the importance of evidence use sends a powerful signal in the system to promote its use. Emphasis in federal education technical assistance that increases the capacity and support provided for evidence use increases the likelihood that research and data will be used effectively.

In the early 1950s, parents in this country had to worry about their child contracting Polio, the dreaded disease of the day. In 1952, the year before I was born more than 3,000 children, a record number, died from the disease. Today, thanks to significant investments in scientific research and effective public health campaigns, Polio no longer exists in this country. However, what does still exist in America are far too many crippling conditions such as students who cannot read by

grade three, drop out before completing high school, or reach college unprepared for success. Like Polio, these conditions demand a substantial investment in research and then translation of that research into practical action.

I believe that when Congress passed ESRA and created the Institute of Education Sciences, it had a vision that science, properly conducted and effectively applied, could be a significant engine in improving education in this country. Further, as Mr. Holt, a member of this subcommittee, has argued, recent history “demonstrates that investments in R&D can drive the economy forward.” Yet, the Department of Education spends less than 1 percent of its budget on R&D, one of the smallest investments of any federal agency.

Ongoing federal investment in the education research enterprise will be required if we are to achieve the promise that all students will receive a quality education that prepares them for fulfilling lives as contributing citizens in our society.

In closing, thank you for this opportunity to offer testimony today.

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Chairman HUNTER. Thank you.

I would now like to recognize Dr. Smith for 5 minutes.

STATEMENT OF DR. ERIC SMITH, FORMER FLORIDA COMMISSIONER OF EDUCATION, FLORIDA DEPARTMENT OF EDUCATION

Mr. SMITH. Thank you very much. Mr. Chairman, I’m honored to be before all of you this morning on what I consider to be an extraordinarily important issue. I will first state that I am not a researcher, but I am a consumer of research.

I have been a classroom teacher, school administrator, district administrator, and B.S. in Newport News, Virginia, and a state commissioner, and have had a strong belief in the work of people like Ron Edmonds, and others, that give this notion that when leadership chooses to make a difference with the outcome of children, when they are committed to making that difference they will do so wherever it is important to them to do so.

It is the fabric of the basis of accountability. That accountability hinges on the ability to make smart decisions about what you do in schools and classrooms and districts and states. To call yourself a reformer requires that you have the ability to move systems in a way that brings with it progress and improves student achievement and student outcomes.

Over the years I have had the opportunity to not only work as a consumer, but also been asked to serve as the chairman of the

Title 1 Review Committee. For a good number of years, I worked with Russ Whitehurst and others, and that was an exciting time for me.

That was a time when I did see, in my view, dramatic improvement in the way we approach the question of research, what is important for a high school principal to do in their schools? What is important for a district superintendent that is under pressure on outcome and achievement to modify and change the way they deliver reading and mathematics?

One of my questions that I had of Russ one day late in the afternoon was, in this great nation, can't we tell our educators what the most effective method of teaching mathematics is? Should it still be a question out there for those that have to and are expected to deliver every day?

So it has been excited to serve in those capacities. Brilliant people and great passion around trying to find the right answers.

For the consumer there are two big questions, though, that get divided—it is kind of inside baseball to me—divided between how research is conducted and the quality of the research, and then how that research is disseminated. To the superintendent, to the building principal, the classroom teacher, those lines are blurred, and it is kind of an inside discussion about how that works. All they know is they want an answer and they can't find it.

We have seen dramatic, dramatic improvement, and I would, part of my recommendation is to continue to fund the kind of research that has been done. But often it comes out rigid, it comes out, in order to get it right, to have all the controls in place, it becomes so different from the real world it becomes hard for a practitioner to put it into place.

What do I do with this? Those aren't my classrooms. That is not my district.

And so that translation, whether it be fault of the research and the way it is conducted or it is a failure of the translation and the dissemination of the research, there is still—we are better; we have farther to go. There is more work to be done, and those lines are blurred.

So I would move, in my remaining 1 minute and 27 seconds, to talk specifically about some recommendations. One is that—I will start with my second recommendation in my written remarks first—is that I do think we need to be very thoughtful, very wise about broadening our scope on how we might gain information; I wouldn't say even conduct research, but gain information about effective practices. I think we can make them more relevant, more timely, and more cost effective by broadening our views.

There are places and things that need to be under a rigorous scientific model and approach, but as I stated in my comments about the application of PSAT, it came from a relational table on the back of a document produced by—that I get annually. It was translating that that makes a difference, so, and as a result we translated data, information about a product, and we made lives different for tens of thousands of children across America—dare I say, hundreds of thousands of children across America. So there are other ways of knowing what is important.

On that note, on the research side it is important that practitioners, the consumers, help to drive the problems that they have today and the conditions that exist today, and that researchers help inform the best way to get at that answer but look at it from a broad view.

Second, on dissemination, it is hard to get a superintendent or a principal's time, or a commissioner's time. They are swamped. And so the ability to go through existing channels where practitioners will be there and show up, if it is not important to be on the keynote panel it probably isn't important to those out in the field. So the dissemination process, how that is done, is critically important.

And I would just finally say is that what this committee, the question this committee is asking, is everything. It is about reauthorization. It is about accountability. It is about school reform. It is about our nation's future.

Our ability to know what works and how to get it in the classrooms is of critical importance today for children sitting in classrooms at this moment. Thank you very much.

[The statement of Dr. Smith follows:]

Prepared Statement of Dr. Eric J. Smith, Former Florida Commissioner of Education, Florida Department of Education

I appreciate the opportunity to address this committee about a topic I find to be extraordinarily important to our nation's academic progress; research on the tools and strategies that we give our teachers to use in the classroom. I am speaking to you not as a researcher but as a consumer of research on educational strategies, tools and practices. In my career I have had the honor of serving 7 years as a classroom teacher, 8 years as a high school administrator, 17 years as a superintendent and 4 years as a state commissioner of education. Throughout my career, in each of these positions, I have been constantly searching for tools, strategies and practices that had some independent evidence that if properly used would result in positive outcomes for children. Said another way, I have always been searching for those tools and techniques that are unique, that can be used in a single classroom or used on a large scale and will generally result in positive achievement gains for children. To be blunt it has been a frustrating search. There are numerous approaches to choose from and as a consumer you will always be told that educational practices and tools are aligned to your standards, are research based and you will always be shown data that is intended to demonstrate that an instructional approach is extremely successful in raising achievement levels. Unfortunately there is still far too little independent research or information on the impact of various approaches to student learning.

My interest is in trying to find better information on the effectiveness of educational tools and approaches to help teachers, administrators and governing bodies to make more informed strategic decisions on how to improve student achievement. The question of effectiveness and impact is central to discussions of accountability, and should be part of the foundation in the development of reform strategies. School reform and accountability have as a premise that leadership can shape and control for academic outcomes by thoughtful strategic planning and execution. There is also an implicit assumption that the needs of individual children can be addressed through the careful planning of practices and strategies as well. Common variables include conditions of time, resources and quality instruction using high quality materials. The primary classroom materials chosen and given to the teacher to deliver the level of instruction required is an essential component. An example of connecting instructional strategy to the needs of individual students is found in the emerging development of adaptive testing. Adaptive testing is showing great promise in helping educators to be much more student centric in the delivery of instruction and in meeting the individual needs of students. Reform strategies such as these should be built around the type of work that is to be done in the classroom. Such strategies should be framed by the selection of classroom practices and selection of primary and supporting classroom materials. Those that make the decisions about classroom instructional practices and materials should be held accountable for

their decisions. I have been in classrooms where a school or district has selected an instructional strategy with supportive tools and you will see teachers who have so little confidence in the approach, that they secretly have hoards of other materials to do the job. The quality of instructional tools and approaches matters to teachers and matters to students. Some help, some don't offer much and it can be assumed that some may do harm.

So my interest in the question of what classroom practices and tools are effective resulted in me being selected to chair the Title 1 Independent Review Panel. It was an extraordinary experience. My colleagues on the panel were both brilliant and passionate about the issue of instructional improvement. I credit the work of Russ Whitehurst and others for pioneering a new way to look at the process of educational research. It was bold and aggressive and had the intent to base findings on a scientifically rigorous research methodology. As superintendent in Charlotte, our children benefited from much of these early efforts to redefine the research. In Charlotte we had no district wide strategy for reading instruction. You could go into an elementary school and reading would be taught differently at the opposite ends of a hallway. Strategically we needed to go to a district adoption so all teachers could be supported through professional development and adequate materials. But the question was: what approach would be most helpful for students? National research helped us make that decision and it was the right decision, reading achievement went up dramatically. Down the road in Florida, at about the same time, the entire state was making decisions about reading. Those decisions were also being informed by quality research and the results over the last decade have also been extraordinary.

But often a strict application of scientific research has significant challenges; the selection of the control group can be difficult if you are fairly certain that the intervention will be beneficial. There is also difficulty in maintaining the fidelity of the experimental group in a real situation and the process is slow and expensive. The instructional strategies will ultimately be used in states, schools and districts that don't have strict and rigid structures, kids come and go in classrooms as do teachers, schedules get interrupted, materials sometimes are in short supply and professional development can be delivered with varying quality. As a result, the nature of the research often fails to mirror reality. The research methodology has the tendency to be cumbersome in its implementation and lead to findings that are rigid and artificial. As a result, the research has limited relevance to the real conditions found in schools and classrooms.

Research that is available is also proving difficult to disseminate and get in to the hands of those who have the responsibility for making educational decisions. The regional labs are of widely different quality and unfortunately are not the "go to" place for information on meaningful research. Some of the labs do very good work but the quality and reputation varies, and as a result, they don't form a network of dissemination that provides national coverage. The What Works Clearinghouse is making good strides in dissemination, but is limited on bridging the research to application challenge, research findings are slow to become available and because of the nature of the research often lacks application in real situations.

My recommendations going forward are three fold; 1. continue to support independent research on the quality of educational strategies, tools, and practices, 2. develop new methods to gain insight into the effectiveness of educational strategies, tools, and practices and 3. expand and create new channels for the dissemination of educational research.

My first point; the need for continued support for education research is critical because it is so central to all discussions of accountability and reform. I often say that schools don't fail, districts fail. The reason for that belief is that most of the important decisions relating to how a school operates are made at the district level; leadership, hours of instruction, calendar, staffing restraints and yes, selection of instructional tools and practices. The ability of a district to make sound strategic decisions about their selection of tools and practices is dependent on quality and timely information regarding the impact of the tools and practices. That should not be done district by district. States and the Federal Government have a responsibility to support independent research on the educational effectiveness of tools and practices. The research should be led in large part by practitioners, answering questions that are timely and relevant to their work with children.

Regarding my second point, in my testimony I have cited two examples where children benefited by making strategic decisions that were informed by quality research. I would also share that I have used other methods of gaining insight into the quality and effectiveness of educational practice that weren't based on rigorous scientific methods and proved to be very timely, cost effective and also resulted in significant benefit for students. I would give you one example. In Charlotte, one of

my staff noted that the correlation between a student's PSAT scores and AP performance could be built into a program, and rosters of students that had good potential for success in AP could be generated. These simple correlation tables provided valuable insight into the use of the PSAT. The impact of knowing the correlation information and being able to apply it resulted in significant increases in college level high school work that was being offered to students and resulted in a significant increase in overall college readiness for the students in Charlotte. A second example is from my work as Commissioner in Florida. As Commissioner, I was able to develop plans that will expand our statewide data base to include the primary instructional practices and tools used in each classroom. The intent was that we could develop relational information between instructional practices and tools and student achievement in a variety of different school settings. These findings would be made available to districts for use in their strategic planning process.

Finally, there needs to be a stronger link between educational research and real world application. If there is a judgment about strictly designed research versus real world conditions of application, the call should favor the real world conditions in every instance. Information that is disseminated needs to be timely, addressing challenges the field has today not yesterday. It needs to address broadly defined challenges, the big questions, not narrowly defined questions that have little relevance. And dissemination needs to utilize existing organizations to communicate findings such as The Council of Great City Schools, CCSSO, Chiefs For Change, AASA and ASCD to name a few. If the research findings are not of interest to these organizations, they won't be of interest to their members either and dissemination will fail, fail because the research is not important.

This committee is addressing an issue of great national importance, important to our country and also important for our children. I commend you for your work.

Chairman HUNTER. Thank you.

I thank the panel, once again, for your testimony.

I would like to start out by saying that it is interesting—I spent some time in the Marine Corps, so if you noticed, in the U.S. military there are four different uniforms, and when you go to combat there are four different uniforms—two or three, because the Navy wears the Marine Corps uniform now. But the problem is, if you look at it scientifically—and you should be able to using different light spectrums and so forth, and matching up the uniform with the surroundings and the environment in which you are fighting—there has got to be one good uniform.

There is obviously, if you test these uniforms using different spectrums of light and so forth, there is one uniform that protects the wearer better than any of the other uniforms do. But if that was true then we would all just have one uniform. We wouldn't have a Marine uniform, and an Army uniform, and an Air Force uniform, but that is what we have. And you would think—it is kind of sad, if we can't do it at that level what makes us think we can take best practices and scientific research and datum and use it at this level.

And secondly, there seems to be some disparity between the ability to get the best practices and things that work and the best curriculums for teaching teachers that then transfer to teaching students, and then the implementation—there seems to be a disconnect. I don't necessarily think we are talking about that disconnect today or the implementation of research and your findings, but that has got to be, that is, that gap has to be bridged at some point, and that is going to be fairly difficult to do, I think.

First, Dr. Whitehurst, you say it is a mistake for Congress to dictate how schools—how states and school districts should use findings from research. Can you provide some examples of this?

Mr. WHITEHURST. Yes, Mr. Chairman. I mentioned Reading First as an example of the federal government specifying at a fine level of detail how reading should be taught. There is no evidence indicating that kids are reading better as a result.

We have in current federal policies and Race to the Top specifications an indication that there are four ways that a failing school should be turned around. How do we know that there aren't nine ways, or seven ways, or six ways?

So to try to get down to the operational level, in terms of how a teacher should do his job, or how a district superintendent should do his job, through legislation seems to me to be a mistake. And if you go through the current version of the Elementary and Secondary Education Act you will find almost every section of the bill dictates that practice be based on research findings.

Often, the research findings aren't there. I remember when Dr. Smith pulled me aside and said, "Well, what math curriculum should I be using?" And I said, "I don't know." And he said, "How could you be requiring me to meet the mandates of No Child Left Behind to use the scientifically-based research and there is no research to tell me how to do that?"

So, you know, it is easy to overreach at the federal level. Again, my point is if the research is done, if it is relevant, if we have good ways of transmitting, and if educators are held responsible for the results they will use it. You don't have to force them to do it.

Chairman HUNTER. Answer this, too: How do you make sure, then, if you have the data, and you have the best practices, and you have the research that shows what should be taught, how do you—if you don't want to get down in the weeds on implementation, because you don't want to because every—there is no silver bullet for—you could have two schools side by side on two different blocks and they would require different implementation. How do you guarantee, then, that the research is taken to bear in that school, or do you? Do you just let—kind of let the—if they want to use it then they can use; if they don't want to use it then they don't have to use it?

Mr. WHITEHURST. Well, you certainly raise a very great challenge. But there is research relevant to that challenge, and it is research on implementation. So we are developing a knowledge base about the ways you need to transmit knowledge, the ways you need to provide professional development around that knowledge, the way you need to monitor implementation to make sure that a program is being carried out well.

So I think, you know, on the forefront of education programs that are being shown to be effective is a very strong component having to do with implementation. So you are not asking school personnel, you know, to take something off the shelf and figure out how to implement it. The implementation is built into the program—to the program itself.

Chairman HUNTER. Thank you very much.

And as my time is expired, I would like to recognize Mr. Holt for 5 minutes.

Mr. HOLT. Thank you.

Actually, we have a very broad topic today, or a collection of many topics. Of course, we must not forget that what underlies all

this is that research communicated well and made relevant is our best protection here, and also the teachers' best protection, against allowing one's deeply held beliefs and ideologies from blinding them, us, to reality and best practice.—And we need to make that research practical.

We are talking today about national research. We are talking about the National Center for Educational Statistics. We are talking about comprehensive centers. We are talking about the regional labs that are—I like to think of as akin to the Agricultural Extension Service that maybe your father the farmer actually used, because there are best practices that come from the federal level that a farmer would depart from only at his own peril.

But we are also talking today about local data. I mentioned in my opening remarks that I will be reintroducing the Metrics Act to provide federal assistance to local agencies to apply data and use it locally. Let me start with Mr. Fleischman and then Mr. Smith to ask, what do you think is a useful federal role in supporting local data system development, and can you give me examples of how that has or how it could be used well? And then as time allows we will go to other questions and other witnesses.

Mr. FLEISCHMAN. Yes. Thank you for that question.

And first of all, I would say there are a couple of very good recent reports out of the Data Quality Campaign that I think are worth looking at. One came out last month and one just came out this month, and it looks at the connection between state data systems and how districts use that. I think they have a number of recommendations in there that are valuable to keep in mind, because in the end, the state data systems have to be used at the district level, the school level, and the classroom level. So the question is how to better connect all of those pieces of the system.

Going back to this notion of focus on the consumer or the user of the data, I think it is really important—and the Data Quality Campaign cite some examples of how states have worked really well with their end users—to create the support mechanisms necessary so that data is not used for compliance purposes but for continuous improvement purposes. I will cite one specific example at the local level—for me a local level is both the state and the district—through our Regional Educational Laboratory work right now. We are using some of the framework that is provided by a number of practice guides. These are kind of taking best available evidence and then helping educators by providing them practical recommendations.

We are working with several of those practice guides, including one on turnaround and one on data-driven decision making, with a set of local schools and local school districts in the Columbia Gorge area of Oregon to help them use in a rapid increase cycle where they look at their data continuously for the purpose of improvement. So they take the action, they look at the data, they focus, and they—

Mr. HOLT. To give Mr. Smith some time to answer that—

Mr. FLEISCHMAN. Sure.

Mr. HOLT [continuing]. Let me turn to him.

Mr. SMITH. Thank you very much. I think, you know, the driver—why do people in the field want to do anything? Why do they want to look at data? What data do they need, and so forth?

And it has been my experience as commissioner and superintendent that the school leadership and district leadership is driven by data because of the issues around accountability and trying to find out if they are being effective or not, how do they benchmark their work over the course of the year, if they need to make corrective action. And so I think there is a—based on the structure we have in our nation, there is inherent desire on the part of districts and schools—

Mr. HOLT. My specific question is, can we help local educational agencies use data better, and do you have examples of that?

Mr. SMITH. I think—I don't know if that is—the federal government needs to be involved with that or that is more of a state and district issue. I think that in terms of—

Mr. HOLT. But it is not happening.

Mr. SMITH. I would share that there is a great deal of data analysis going on in schools every day trying to determine the effectiveness of instruction that takes place. Connecting that between what is effective—what do I do when I find that the work that is going on in the classroom or schools isn't working isn't effective? What is the solution? Where do I go?

That is where the breakdown is. It is not so much that I don't know that School X, as a commissioner, is failing and has failed. What do I do? What solution set do I bring to it and apply to it?

Mr. HOLT. Thank you.

Chairman HUNTER. Thank you, Mr. Holt.

I would now like to recognize Mrs. Roby, from the great state of Alabama.

Mrs. ROBY. Thank you, Mr. Chairman. And I, too, know how quickly 5 minutes goes by, so we will just jump right in.

Dr. Whitehurst, you talked with the chairman a little bit about implementation. I just want to expand on the fact that in your testimony you said that Congress should focus on creating incentives for practitioners to want to incorporate findings from the best research into their programs centered around the performance of schools.

And we hear that word a lot in here—incentives—and rarely are we given the opportunity to hear specifics as to what those incentives might be and how the federal government actually offers those incentives. So could you expand on that a little bit?

Mr. WHITEHURST. Yes, I can. I think there are two categories of incentives. The one is top-down regulatory incentives, where, as has been the case in No Child Left Behind, states have to define targets for performance of schools. Schools that are not meeting those targets face various consequences. You have similar sort of mechanisms structured around positive incentives in Race to the Top.

But somebody at either the state or the federal level is saying, "This is what you need to do, and here are the things that are going to happen if you don't do those things well." There is decent evidence that that kind of top-down accountability has effects, and you will hear practitioners like Dr. Smith say, "Well, we are con-

cerned with accountability. We wanted to do something about the schools that were failing, as defined by the accountability system.”

The other form of accountability is market-based accountability. Your school is failing not because you are not reaching some target set by the state; your school is failing because parents don’t want to send their kids there and they have other places to send their kids—

Mrs. ROBY. And I guess that is the—and sorry for interrupting—

Mr. WHITEHURST. Yes.

Mrs. ROBY [continuing]. That is the problem, because not in every school district do you have that opportunity to make that choice. And that is the real rub is that if my school is failing and I don’t have a choice to go anywhere but that school then that incentive doesn’t exist.

Mr. WHITEHURST. Well, I think that it is possible for the federal government to do more to incentivize states to incentivize districts to allow at least public school choice. Now, if you live in a community in which there is only one elementary school obviously you are not going to have choice. But if you live in a community like Washington, D.C., in which there are hundreds of elementary schools, if you can choose among them based on good information on how you are performing, that sends a very strong accountability message.

And again, I think that is a different form of accountability. It is not fundamentally incompatible with top-down accountability, but I believe we need more of it. And the best evidence is that when that accountability is in place the schools that are subject to the loss of students improve, and that parents—low-income parents—given good information, will choose a better school than the school that the district assigns their child to, and their kids will do better as a result.

So incorporating that kind of market-based approach in the accountability system, I think, is a way to go, and we could do more of that at the federal level.

Mrs. ROBY. And certainly we know that part of that challenge, too, is how to get that information into the hands of the parent, and that is a whole ’nother topic of conversation. But thank you for your answer.

Dr. Hoxby, how can IES effectively partner with the private sector to conduct quality research and make it accessible to teachers in the classroom?

Ms. HOXBY. Well, I think in many ways the best way to answer that question is to explain what happens abroad in other countries, because there is no partnership between the private sector and the government in most other countries, and as a result, their education research is very narrow. The government really has a monopoly on what are the interesting questions and what are the right ways to answer those questions. And also, they don’t tend to have very much advancement in terms of their scientific methods for answering those questions.

In the U.S. we do have a pretty effective partnership already between the government and philanthropic organizations and universities. And I think if we look at what something like the Gates Foundation does, it starts interesting, innovative programs, some of

which are never brought to scale; it has those programs evaluation, sometimes by university researchers, sometimes by other private sector researchers, like Mathematica, a contracting organization, and then it makes decisions about which of these programs to continue and which of these programs should be discontinued.

I think that is a fantastic role for philanthropic organizations because it is their money and they want the, if they want the credit for being innovative they should take the risks of being innovative.

I think universities play a much bigger role in the United States, as well. I don't know whether we consider that the private or the public sector. I suppose it depends on the university.

But I think the key thing that the universities do is that they will do basic research, and basic research is important not because it is basic research is research that doesn't apply immediately to policy, but it usually applies to policy just one step down the road. So as an example, all of the research that has come out recently on teachers—the effects that teachers have on students—some teachers have much more positive effects, some teachers have much worse effects on students.

That is all basic research because all it tells us is that we know that teachers differ a great deal. It doesn't tell us how we ought to pay teachers, but we need to know that if we are going to then consider teacher pay policies.

Mrs. ROBY. Thank you so much. My time is expired.

Chairman HUNTER. Thank you.

Mr. Scott is recognized for 5 minutes.

Mr. SCOTT. Thank you, Mr. Chairman.

And I want to welcome Dr. Smith. You just breezed by, Mr. Chairman—breezed by the highlight of his career, and that is superintendent of the Newport News, Virginia public schools.

Dr. Smith, it is good to see you again. When you were superintendent I think that they had the research—federal research was under—I forget what it stands for, but it is OERI. Did you ever use any of that research in Newport News?

Mr. SMITH. No.

Mr. SCOTT. In your other capacities have you used federal research in your—you asked Dr. Whitehurst for research on things you needed. Was the research there?

Mr. SMITH. No. We have. We got it and we have used it a lot, and—from a variety of sources, but research from the federal government, where available and applicable, I would—we have a—in Florida we have a very well developed reading office and we constantly stay up with the most current research on reading, and so forth.

And I would say that, you know, in the field—and again, it varies a bit from state to district to school; perhaps it goes back to the question asked earlier about data. A lot of research can inform the work in general and overall. Day to day, a lot of schools—most schools I run into—do have good data, or they have data; they don't have good data, and they actually are doing research on their own.

Mr. SCOTT. But that data and research are two different things. If you have done some research and found out what works, do you report back to whoever did the research to see if it worked in your

locality? Because I suspect that some very successful programs would work in one setting and not in another.

Mr. SMITH. We do find that the application of what is learned can vary from setting to setting. And again, you know, sometimes information we will gain helps us with that; what practices work best with students that have limited experiences when they come to the classroom, or the converse.

Adaptive testing is helping us now, because we have some work with adaptive testing that allows us to measure up and measure down, and so we can be more student-centric in our review and trying to find the right kind of solutions to, you know, based on the research, on what needs to be done.

Mr. SCOTT. Thank you.

Dr. Hoxby, you indicated the importance of making sure you get the best proposals. Does the Institute of Educational Research wait for proposals or do they put out RFPs of subjects that need to be studied?

Ms. HOXBY. Both, and I think both are important. By putting out priorities IES does get researchers engaged in questions that are important for policy, especially federal policy makers, and certainly some of the priorities come right out of federal programs that are funded. I think those are very important priorities.

But I don't think we want IES to be establishing all of the priorities simply because sometimes the most important innovative programs really come out of nowhere, or out of some educator's idea, out of a particular school, out of a particular school district that is doing something innovative, and then often those proposals flow into IES. So I think we have a pretty good balance at this point of establishing priorities and attracting researchers to them, but also allowing researchers to notice what is going on out there in the field and then bringing that into IES and saying, "I can evaluate this."

Mr. SCOTT. And with that process do we have information—I mean, if we want to reduce the achievement gap and the school board gets together and says, that is our priority; we want to—is there somewhere you can go to get research on what they need to do?

Ms. HOXBY. Well, I think that is a tricky question. Ideally they could go to the What Works Clearinghouse, which is part of IES, and look up something like, "How do I close the achievement gap," but it is really not that straightforward. What the What Works Clearinghouse would tell you is maybe what reading curriculum works best, or what math curriculum works best, or it might give you a good sense of whether charter schools are doing better than public schools in a particular domain.

So we still have a problem in that the school superintendent really has to put all of these pieces together, and I do think that is the gap everyone is identifying.

Mr. SCOTT. So we have 15,000 superintendents home making their own process and no central research to help them out. Is that what we have, Dr. Whitehurst?

Mr. WHITEHURST. Not exactly. We certainly have research to help them out. I agree with Dr. Hoxby that often a practitioner will come at the problem with different slices than the research commu-

nity has, and so there is a challenge in putting it together and answering the practitioner's immediate problem.

Part of this is simply a lack of knowledge. We have not been at this game seriously for very long, and one of the frustrations I had when I was the director of IES is people would ask me what to do and they would want an answer, and I could not give them an answer based on the knowledge base that we had created.

So some of it is a problem of translating what we know more effectively. Some of it is a problem of our just not knowing yet the best way to go about doing what needs to be done.

Chairman HUNTER. Thank you.

Mrs. FOXX is recognized for 5 minutes.

Mrs. FOXX. Thank you, Mr. Chairman.

And I want to say that this has been a very enlightening panel. I want to thank all of you for coming today. I have had a little experience in this area, and am very fascinated by the subject of research.

Serendipitously, over the weekend I read an article from National Review Online—and I am sorry Mr. Scott left—it is called “Closing the Achievement Gap.” I don't know the people who wrote it; Reihan Salam and Tino Sanandaji are their names. But it is a fascinating article that brings up the issue of research and how different people can look at the same research in different ways. And I think that is an underlying issue that is pretty important.

I want to make a couple of comments and then ask some questions. As I said, I have been in this field for a long time, and as you all were talking and as I have read your statements, I kept coming back to that statement, “Everything I need to know I learned in kindergarten.”

Dr. Whitehurst, while you said we are in this field only a short time, the comment you made about what we have learned from research, teachers vary dramatically in effectiveness. A very effective teacher compared to a very ineffective teacher can create achievement gains for a child in 1 year that can wipe out a third of the—haven't we always known that? I mean, did we need to do research to figure out that there are some good teachers and some not-so-good teachers? I mean, why did we have to have research to teach us that?

And I guess the question that I would like to ask and quickly get a quick answer, if I could, from all of you—very quick answer: Is there research that has not been done that needs to be done? Just give me two or three words, each one of you, if you would. What don't we know that we should know?

Dr. Whitehurst?

Mr. WHITEHURST. Well, there is a lot we don't know about effective curriculum, particularly how to deliver it digitally. We are moving into a digital age, and being able to use that medium would be extraordinarily important.

Mrs. FOXX. Okay.

Dr. Hoxby?

Ms. HOXBY. I think the most obvious gap is that we don't know how well teacher incentives work for improving teaching in the classroom. Most of our studies are now from other countries, not from this country.

Mrs. FOXX. Mr. Fleischman?

Mr. FLEISCHMAN. I think we need more research on data use, how to use it effectively, and also, across the board, implementation—how to implement more effectively.

Mrs. FOXX. Mr. Smith?

Mr. SMITH. Yes. I would say how to help classrooms to better adapt to the variability that comes to the teacher every day—the high flyer, the high performer—and still be able to adapt to the need of the child that is struggling on a given topic.

Mrs. FOXX. I have one child. She is an average kid, and I always felt sorry for every teacher she had because she was always in a class—we were in a small community—where they had very, very bright kids and kids with major challenges, and a whole lot of kids right in the middle. And I felt sorry every year for those teachers because they had that range to deal with, and I think you have identified a very important point.

The other thing I would like—Dr. Hoxby, you brought this up so let me direct the question first to you, and then if others want to respond I would be happy for you to do that. You mentioned the Gates Foundation and what they have been doing. Has the Gates Foundation been more effective in its implementation of what they have learned than the federal government has been, or other places like the Gates Foundation?

Ms. HOXBY. I wouldn't say that they have been more effective. I would say they have looked more at speculative programs as opposed to established programs. I think that is a difference between the role of the philanthropic organization and the government.

I would say they are also faster at shutting down unsuccessful programs. That is the other thing: When they figure out that something is unsuccessful it doesn't take them a couple of years to shut down; it takes them a couple of months.

Mrs. FOXX. Thank you very much, Mr. Chairman.

Chairman HUNTER. Thank you.

I would like to recognize Mrs. McCarthy for 5 minutes.

Mrs. MCCARTHY. Thank you. Actually, I am finding this quite fascinating, and I have got 2 million questions in my head as we go through all this.

One of the things that I have always been kind of looking at—you know, we have great people that want to be teachers. Yet we find when they get into a school to be teachers most of them are put into lower grades. I am just wondering if the research has been out there on what our teaching colleges are doing to make sure that teachers are well prepared to go into the lower grades. Because what I have found in talking to an awful lot of young teachers when they first start, they felt totally unprepared to be teachers. A lot of them have left within 5 years because they felt that they had the biggest responsibility to take the youngest and to give them the best, and yet they felt they were not capable of doing that.

I would just be interested because I think when you talk about the digital age that is coming in—our younger people that are graduating, hopefully they are going to be more focused, because that is the way kids want to learn today. I think that is one of the problems that we are seeing in our schools, also.

I guess the other question that I would have would be that when the data come in and if you have someone that is a superintendent or a principal that is not interested in data or doesn't even have time to look at data, is the state prepared to be able to get that information down when they see those schools are failing? I will throw that open to everybody.

Oh, and before I forget, I have an article from the RAND Education on some research that I would like to submit to the committee, because I am a supporter of charter schools. I also believe it is not the silver bullet that everybody is looking for. With that, Mr. Chairman—

[The policy brief, "Increasing Participation in No Child Left Behind School Choice," may be accessed at the following Internet address:]

http://www.rand.org/pubs/research_briefs/RB9424/index1.html

Chairman HUNTER. Without objection.

Mrs. MCCARTHY. Thank you.

Mr. WHITEHURST. I will go first, since I am on the right here. There are good survey data indicating that teachers in general have the reactions that you have just described. They feel badly underprepared for the jobs that they have to do. It does result in a lot of loss from the profession.

Innovations around that are several. Some districts are setting up their own teacher preparation programs so that the practical experience is directly related to what the district wants to provide. We have programs like Teach for America that are providing alternative pathways in teaching that bypass the traditional school of education preparation routes.

But clearly, we need to do a better job in preparing teachers for the jobs that they have to do, that we are, for the first time, to Mrs. Foxx's issue, actually able to measure teacher effectiveness rather than just having the intuition that there are good and bad teachers. It allows us to tie the performance of classroom teachers to their preparation institutions, so for the first time the colleges of education can be held responsible for the quality of instruction that the teachers provide. So I will handle that question, and I will let my colleagues take on that or other ones, if they wish.

Ms. HOXBY. Let me just follow up on that, and I won't repeat what Dr. Whitehurst said. But we do know that if you look now at data it does not appear to be the case that teachers who are educated in different channels are systematically better or worse than one another. Teachers who are educated through alternative teacher channels often look about the same, in terms of their performance, as teachers who go all the way through a traditional ed school and it takes them 6 years to get their degree.

And that is somewhat disturbing because it means that whatever it is that we are doing in the training, it does not systematically work. I think these days we have to look backwards, the other way. Because we can identify teachers who are effective, we can look at the schools that are producing effective—the education schools that are producing effective teachers systematically.

Another thing that we have learned is that effective teachers are good at spreading effective teaching around them. If you drop one effective teacher into an elementary school it turns out that the teachers who interact with her will also become more effective.

So we are getting a better understanding of how teachers can learn, but it appears, to a large extent, that they learn from one another and that they learn from classroom practice, not so much just from getting a credential.

Mr. FLEISCHMAN. I think we still have a ways to go in terms of what was just said, in terms of having teacher preparation institutions and other vehicles to prepare teachers to be ready to do the job. In part, having been a teacher, there is a lot of on-the-job training, and mentoring, and support you need once you get there, but there is no question that there could be better preparation.

In fact, I mentioned before the Data Quality Campaign report, just out this month, and they looked at 10 state actions to support effective data use. Only one of them was implementing policies to ensure educators know how to use data appropriately once they have that in place. So there is a lot of work that needs to be done in the system to get to the issue that you just raised.

Mr. SMITH. I would just add that, very quickly, one, on teacher quality issues, a lot of states aren't out pursuing the link between student achievement and the institution that prepared the teacher to enter the profession. There is some work done by some organizations to gather more national information on teacher preparation and they are having an extraordinarily difficult time getting state institutions to give that data up, so having to actually go to a Freedom of Information Request to get that information, so it is a very slow process, but very important one.

On the data side, there—you know, data management systems—again, a lot of schools have data; it is not the data that they need to focus their attention on the things that are important, and an area that I think we need to continue to do research on is what are the most effective data management systems out there and the most informative for school administrators and superintendents to use to, you know, to help drive improvement.

Mrs. MCCARTHY. Thank you.

My time is up.

Chairman HUNTER. Thank you.

Mr. HANNA is recognized for 5 minutes.

Mr. HANNA. I would like to use the balance of my time and give it to Mrs. Foxx. Thank you, Chairman.

Mrs. FOXX. I want to thank the gentleman from New York for yielding me his time.

I could not let this panel get away without mentioning something that is a particular bone of contention with me, and so far three of you have sort of violated my norm on this. You used the term "training" in association with human beings. It is a shame to admit this, but I remember one thing from my doctoral program, and one of my professors said, "You train animals and you educate people," and that has really stuck with me.

And so especially when I am in education settings I try to point that out to people because I want you to think about the fact that

we are educating people. Dr. Whitehurst, it is in your material that you put out.

And, Dr. Hoxby, you and Mr. Fleischman both just said it.

So I would like you to think about whether you want to use that term in conjunction with human beings, because I think that has something to do with our mindset in education. I really believe language is important, and I am sure you all would probably agree with that.

There are a couple of things that came up. Dr. Whitehurst, in a time—we always have limited resources, and I know, as you say, in research this has been an area where we have used a very small amount of resources, and in some ways have come to it very lately, so I agree with you on that aspect of it.

I would like to start with you again, particularly. Again, I asked this question a slightly different way; where could we best use our dollars? And something none of you have mentioned, which I would like you to think about as you answer that question, we are always focused on the teacher, and obviously that is important. The teacher is the person interacting most with the student.

But I have felt in all my life of being involved in education is we never look enough at the structure of education. I believe that most of what we do in education is designed for the adults and not the children.

For example, we have known for a long time that adolescents do a very poor job early in the morning, and yet, high schools begin at 8 a.m. We have ignored that research for the convenience of the adults.

So would you make any recommendations in terms of research on structure of education, and would you make some comments about that; and again, very quickly so each person has a chance to make some comments about that?

Mr. WHITEHURST. Well, if you mean by structure the arrangement of the school day and the circumstances in which instruction is delivered, yes, I think we need policymakers and practitioners to pay attention first to the research that we already have. We know, for example, that investments in pre-K programs pay a large dividend, and yet they are typically underfunded.

We have very strong research demonstrating that high school kids' learning is negatively affected by starting them before they are awake in the morning. We have a variety of research that rates the organization of the school day.

And so, you know, I am in favor of—certainly we ought to use what we know when we can do that.

Ms. HOXBY. I think that you are making a very important point. I often say to people that the problem in some areas of education is not that we don't know the answer but simply that the stakeholders will not listen to the answer or will not use the answer.

An example of that, for instance, is the longer school year and the longer school day. These are just not popular with stakeholders, but it—the evidence suggests that they are very good for students. So that is a perfect example of where the structure gets in the way of improvement.

Mrs. FOXX. Mr. Fleischman?

Mr. FLEISCHMAN. Yes. Mrs. Foxx, first of all, thank you for that reminder about training. It was made to me by my colleagues last week. I didn't remember. Thank you.

The one place, I think, where we need to do a lot more research—it is also on structure—is the connection between secondary school and college-going—college readiness, college attendance, college success. That is one of those places where there are two different structures coming together and we need to better understand how the secondary school can do a better job and how the institutions of higher education can do a better job to ensure the students' success.

Mr. SMITH. I would just agree with you that a longstanding belief of mine that schools don't fail; districts fail—that when you find—that districts are the ones responsible for setting the policies that drive much of what goes on in schools. And to fix schools school-by-school is extraordinarily challenging because the envelope that it operates within is usually broken also.

Mrs. FOXX. Again, Mr. Chairman, I want to thank you very much for your tolerance, and I want to thank the panel.

You have been a—

Chairman HUNTER. I thank the gentlelady.

I would now like to recognize my neighbor in San Diego, Mrs. Davis, for 5 minutes.

Mrs. DAVIS. Thank you, Mr. Chairman.

Thank you to all of you for being here. You have all had a great deal of experience in this area, and I am wondering what you see has been the best way that research has been disseminated to teachers.

I think, Dr. Hoxby, you mentioned that we do know—and I have heard Bill Gates say—that putting new teachers or teachers who, perhaps, aren't doing as well in front of teachers who are doing very well and seeing how they engage with students, and how they get so much from students is beneficial. We don't see that enough.

It seems to me we fail to do that. We fail to provide the resources so that we can have those really great teachers in front of new and unsuccessful teachers.

Is that one way that we could do that? Have you seen that? How do we do that?

Because going to a practicum 1 day is not going to do it. We know that. How do you think it works?

Ms. HOXBY. Well, let me first say that one of the things we know because of IES is that a lot of the professional development programs that are highly regarded in the United States don't appear to have the effects that we—that they are intended to have. So simply putting teachers into a professional development program does not necessarily have big effects.

I think that we—one thing that we lack in the United States that other countries have, and particularly England has, is a system of school inspectors, and these inspectors it sounds like someone is just coming down to inspect your school like inspect your house, but that is not really what they do. They come into your classroom, they observe you for several days. They are experts; they have all of the data on what is happening in your classroom

and the achievement of your students; they have the diagnostic data.

And they sit down with the teacher at the end of the inspection and try to relay best practices to the person. And they have an intense experience that we simply do not have paralleled in the United States where a principal would often spend as little as maybe an hour in a teacher's classroom each year.

Mrs. DAVIS. Right. Yes.

Mr. SMITH. I would just share a couple thoughts. One is that you have to get the information out to where people go, where they attend, whether it be through national conferences, or whatever, but there has to be a strong push to disseminate good quality research through the normal channels.

The second, what I have learned from my experience in Florida's commissioner is that there is, I think, a great deal of dissemination that could be done—I don't think it is being done yet in—at least consistently across the nation—by working with a combination of state departments of education and legislative committee staff in state government, where there is a keen interest in taking research findings, be it school day, or connecting teacher quality with teacher preparation, and trying to drive that into state policy and state statute.

Mrs. DAVIS. So where—is that a federal role? Should there be some way—we are all familiar with the military and defense research, and others in environmental and energy areas.

Mr. SMITH. I think the dissemination—and again, I think—you know, the dissemination is, you know, if, I would say that if some sources of information, be it regional labs or whatever, my friend here, but if they had to depend on checks coming in for how much service was provided they might go broke within a month. And so I think that, again, there needs to be that consumer-driven process. This research is critically important to us.

Mrs. DAVIS. Mr. Fleischman?

Mr. FLEISCHMAN. What I would add is not to forget the human factor. Just in the same way that we are having a dialogue right now and we are learning about something, I think that a lot of the learning that takes place takes place in context with people doing their jobs and then having better data and better research to inform that.

A good example of that through the Regional Educational Laboratory system are the so-called bridge events, where we take things like the practice guides, which are based on the best available research, and give practical recommendations, and then work with folks out in the field. We just recently held one on rural school turnaround where we were looking at the recommendations of rural school turnaround, looking at the school improvement grant models, working with rural school educators and state departments of education, and working through the process of learning how to apply that in real time for real problems.

Mrs. DAVIS. If I might, but really—oh, looks like my time is up. I can't do that.

Thank you, Mr. Chairman.

Chairman HUNTER. I thank the gentlelady.

Mr. Barletta is recognized for 5 minutes.

Mr. BARLETTA. Thank you, Mr. Chairman.

Dr. Whitehurst, current law requires that education programs be supported by scientifically-based research. Based on your past experiences in the field of education policy and your current work at the Brookings Institution, how do you define scientifically-based research?

Mr. WHITEHURST. Research in education that draws on the methods that are the canon for the social and behavioral sciences is scientifically-based research. People are trained to do it. People who are trained to do it recognize it when they see it and recognize it when it is not happening.

It is a moving game in that the methods improve and our ability to focus those methods on questions that are important changes over time. And I think there is, you know, a congressional role in mandating that federally funded research meets high standards for its scientific base. And it is also ultimately the role of the science community, the research community, to define specifically what that means, because again, it will change and advance over time.

Mr. BARLETTA. And upon the reauthorization of ESEA, how do you think this definition needs to be revised?

Mr. WHITEHURST. The current definition, I think, is a pretty good one. I think you have a choice either to leave it out and leave the definition up to the research community or to take what is there and fine-tune it where necessary.

I think it would be a mistake to take the current definition and water it down because that is a signal that we will be moving back to where we were 15 years ago, where what passed for education research was frequently a subject of derision in any department and any university except the education school.

Mr. BARLETTA. Dr. Hoxby, same question: How do you define scientifically-based research, and do you think the definition needs to be redefined?

Ms. HOXBY. I really define scientifically-based research in the way I would define it in medicine, or physics, or anything else. It is the use of the scientific method.

And one of the ways that we know we are doing scientific research is that we should be able to come to conclusions that are based on the data and the logic as opposed to based on our presuppositions. Sometimes you should realize that the data overturns your presuppositions. That is the scientific method.

I don't think that we need to take science out of ESRA reauthorization. I completely agree with Dr. Whitehurst that the situation we were in 15 years ago is so much worse than the situation we are in right now that we need to keep that scientific standard in the legislation.

At the same time, it is almost impossible to define what scientific method is because it is a moving target, and that is a good thing, right? We wouldn't want it to be true in medicine that the science of today was the same as the science of 10 years ago.

And similarly in education, one of the great points of using the scientific method and requiring that it is used is that the methods actually improve because we realize we can't answer this sort of question so we need to have a new method to answer that sort of question, or this question has been answered very imperfectly so

we need to develop a new method. We want to actually keep the development of methods so that 20 years from today we are not just in a different place in terms of what we know on education but we are in a different place in terms of what we can know because we have better methods.

Mr. BARLETTA. And, Dr. Smith, as a past classroom teacher and school principal, how do you define scientifically-based research?

Mr. SMITH. You know, I have worked with this a lot and I don't know—I don't think that the definition needs to be changed a lot. Because, again, I came out of the world when we didn't really have any research. Whatever felt good and seemed right and the adults were comfortable with seemed to be okay.

And so I think we have made huge strides forward. I think the question is what drives the application of the definition, and is it being driven by—strictly by researchers that don't understand the connection and application in the real world or is it—is working within that definition in a way that gives you real-world, timely answers?

And I think, as in medicine, you can deal with an epidemic in a lot of ways—you can define it very narrowly, very rigorously, with controls, and by the time the epidemic has already taken its toll. Or you can find other ways of working on very scientific, highly respected results that give you more practical—mirroring the conditions that exist at the moment in a timely fashion.

So I think how that gets gauged and who helps guide the structure of the research I think is the key.

Mr. BARLETTA. Thank you.

Thank you, Mr. Chairman.

Chairman HUNTER. I thank the gentleman.

I think that is all the questions we have.

I would like to thank the witnesses and finish by just saying this: I am optimistic because—not necessarily because I think we are all smart people and we can all handle this, but because technology, and especially adaptive learning technology, you know, it is going to be working and it is going to be implemented at some point, I would say, over the next decade or two, and—I mean, if they already have adaptive video games, things that work that way where the smartest kids get to learn as the smartest kids do and excel and the average kids get to have the education curriculum matched to them, and so forth for every learning possibility.

So I am optimistic, one, and I do think that sunshine and data can create accountability. I think just the fact that if it is easy to consume and it is easy for all the players to be able to read it, and understand it, and see who is winning and who is not, and where they should send their kids to school and where the educators want to go to work at, I think that is a big motivator for everybody at every level for all the different stakeholders.

So thank you, again, to our witnesses.

And there being no further business, this subcommittee stands adjourned.

[Additional submissions of Mr. Holt follow:]

**Prepared Statement of the Learning and Education
Academic Research Network**

As the panel considers reauthorization of the Education Sciences Reform Act of 2002 (ESRA), the Learning and Education Academic Research Network (LEARN Coalition) is pleased to submit this statement in support of this process and, in particular, to highlight the role of research-intensive colleges of education in fulfilling the potential of this landmark legislation.

The LEARN Coalition was formed nearly seven years ago to advocate for quality education research at the federal level. Our institutions are dedicated to the most rigorous standards for designing and executing the critical research needed to inform better teaching, stronger schools, and, most importantly, higher performing students. The Department of Education, the National Science Foundation, and the National Institutes of Health are our primary agency partners in this endeavor. As a result of the investments that have been made in education research, new tools have been developed to inform teacher practice and impact student performance. Investments in research across the education spectrum are required to translate what we have learned through basic research on the brain, cognition, and learning into effective teacher preparation and practice, standards for learning, assessment, and inform curriculum development. Investments in educational research and rigorous evaluation systems lead to better educational programs, schools, effective teaching, and higher student achievement. It is a direct investment in our nation's economic competitiveness.

Since LEARN's launch, we have witnessed significant expansion in the federal resources invested in education research. Moreover, there has been an ongoing and collaborative effort between institutions of higher education and government leaders to ensure that taxpayer resources are used to address the most important challenges for our schools and students. ESRA, and the Department of Education's Institute for Education Sciences (IES), are critical building blocks in an increasingly robust education research system. In particular, IES facilitates the kind of research that enables the translation of theory into practice using systematic study of phenomena from small scale to large. LEARN member institutions contribute to the mission of IES by conducting research and setting the knowledge base in a variety of different areas including: Teacher Performance Systems; Assessment Standards; Educational Interventions for Special Education Students; STEM Education; and English Language Learners.

As the Committee moves forward with ESRA reauthorization, we encourage careful consideration of how IES and its programs can fully utilize peer-reviewed, high quality research capabilities, such as those found in the nation's higher education community, to drive student achievement. The benefits of this approach include:

1. Innovation—higher education faculty are at the center of critical, creative thinking about the learning and teaching processes, including with interdisciplinary teams that combine insights across biologic, environmental, and social factors;
2. Evaluation—universities frequently work with state and local education agencies, as well as other stakeholders, to conduct field-based research and evaluation that promotes timely understanding of what works; and
3. Dissemination—through a variety of education, publication, and engagement tactics, higher education participants are a critical link for translating new knowledge into practice, on both a focused and larger scale.

The LEARN members are prepared to provide the Committee with a comprehensive perspective on how research-intensive higher education institutions contribute to better student outcomes. The ESRA reauthorization process clearly is an opportunity to accelerate and expand the nation's efforts here through sound evidence development and use. Our institutions are committed to being at the forefront of producing these student performance solutions and to working with federal policymakers to improve student outcomes.

LEARN MEMBER INSTITUTIONS

Indiana University, W.W. Wright School of Education
Iowa State University, College of Human Sciences
New York University, Steinhardt School of Culture, Education, and Human Development
Purdue University, College of Education
Rutgers University, Graduate School of Education
State University of New York at Buffalo, Graduate School of Education
Syracuse University, School of Education
Texas A&M University, College of Education and Human Development
The Ohio State University, College of Education and Human Ecology

University of California—Irvine, Department of Education
 University of California—Santa Barbara, Gevirtz Graduate School of Education
 University of Florida, College of Education
 University of Illinois Urbana-Champaign, College of Education
 University of Iowa, College of Education
 University of Maryland College Park, College of Education
 University of Minnesota Twin Cities, College of Education and Human Development
 University of Pittsburgh, School of Education
 University of Southern California, Rossier School of Education
 University of Virginia, Curry School of Education
 University of Washington, College of Education
 Vanderbilt University, Peabody College of Education and Human Development

[The report, “From Compliance to Service: Evolving the State Role to Support District Data Efforts to Improve Student Achievement,” may be accessed at the following Internet address:]

<http://dataqualitycampaign.org/files/From%20Compliance%20to%20Service.pdf>

[Questions submitted for the record and their responses follow:]

U.S. CONGRESS,
 Washington, DC, December 5, 2011.

Dr. CAROLINE HOXBY,
Department of Economics, Stanford University, 579 Serra Mall, Stanford, CA 94305.

DEAR DR. HOXBY: Thank you for testifying before the Subcommittee on Early Childhood, Elementary and Secondary Education at the hearing entitled, “Education Research: Identifying Effective Programs to Support Students and Teachers” on Wednesday, November 16, 2011. I appreciate your participation.

Enclosed are additional questions submitted by members of the Committee after the hearing. Please provide written responses no later than December 19, 2011 for inclusion in the final hearing record. Responses should be sent to Dan Shorts of the Committee staff who can be contacted at (202) 225-6558.

Thank you again for your important contribution to the work of the Committee.
 Sincerely,

DUNCAN D. HUNTER, *Chairman,*
Subcommittee on Early Childhood, Elementary and Secondary Education.

REPRESENTATIVE DUNCAN HUNTER (R-CA)

1. Given that the focus of this hearing is to examine the most effective ways of utilizing student research to help teachers better understand students’ instructional needs, it would be helpful to hear your thoughts on computer adaptive assessments. These assessments adjust automatically to each student’s ability level, generating more difficult questions if the student is answering correctly and easier ones if the student is answering incorrectly. In doing so, these assessments enable teachers to pinpoint the proficiency level of each student across a range of subjects that correspond with the standards set by a state’s curriculum.

There are a few states who have already implemented computer adaptive assessments as a tool of measuring student achievement and growth—including Oregon—and a number of others who are interested in following suit, given that computer adaptive assessments provide essential and timely data that can more accurately illustrate student placement, student growth, and instructional needs.

Can you provide the Committee with your views on computer adaptive assessments and whether they can be of benefit to teachers, administrators, parents, and ultimately students?

2. How does education research play a role in providing reliable information to parents? How can the federal government aid states and school districts in improving these efforts?

3. With such high standards for scientific evaluation, how can the federal government ensure that the research methodology is not overly cumbersome, leading to artificial results that are not relevant in a dynamic and fast-changing classroom?

REPRESENTATIVE VIRGINIA FOXX (R-NC)

4. During the hearing you mentioned that other countries (specifically in Europe and Latin America) have better administrative data sets than the United States, and you could therefore do better research in other countries. I think a specific example you cited was the Dutch school reform and choice movement. Why do other countries have better data sets? Is there something in the US prohibiting them from collecting the same data sets (i.e. student privacy concerns)? Please expand more on why other countries do a better job with administrative data sets.

Dr. Hoxby's Response to Questions Submitted for the Record

CHAIRMAN HUNTER

1. Given that the focus of this hearing is to examine the most effective ways of utilizing student research to help teachers better understand students' instructional needs, it would be helpful to hear your thoughts on computer adaptive assessments. These assessments adjust automatically to each student's ability level, generating more difficult questions if the student is answering correctly and easier ones if the student is answering incorrectly.

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Can you provide the Committee with your views on computer adaptive assessments and whether they can be of benefit to teachers, administrators, parents, and ultimately students?

Computer adaptive assessments are evaluation tools that are extremely helpful because they promote good decision-making at all levels: the classroom level, the school level, the district level, the state level, and the federal level. They prevent most cheating and crude "teaching to the test." Because adaptive assessments put neither floors nor ceilings on the achievement of students, they allow students who are behind or ahead of their grade to be evaluated well. Every student can be appropriately challenged, and no student ever need face a "dumbed down" test. Computer adaptive assessments also allow tests from different states to be equated fairly easily so that states' performance can be compared well.

Let me expand just slightly on some of these points.

When taking a computer adaptive assessment, a student's answers to the initial questions affect whether he or she offered more or less challenging questions from then on. This is the way in which the assessment adapts to the student's level of knowledge and skill. Because students spend their time answering questions that efficiently diagnose what they know and do not know, a computer adaptive assessment delivers a very accurate evaluate of a student's learning. In contrast, a student who is taking a pencil-and-paper test may find that most of the questions are very hard or very easy for him or her. For such students, even the best pencil-and-paper test delivers only a crude or imprecise evaluation. The results of computer adaptive assessments are available immediately, not months after the test is taken. This allows teachers to use the test results to modify their teaching immediately, in order to provide extra instruction in the areas in which the student was weak. Also computer adaptive assessments provide not only an overall score, which can be used for little else but overall evaluation. They provide diagnostic information on exactly what knowledge and skills the student lacks. For instance, a teacher might learn that a student can add, subtract, and multiply fractions but does not know how to divide one fraction into another. Many assessments give teachers lesson plan suggestions as well as results. Thus, the teacher might receive suggested lessons, examples, and practice problems for helping students learn how to divide fractions.

In short, computer adaptive assessments have at least five properties that make them very useful to policy makers at all levels: (i) they can be much more accurate than a pencil-and-paper test that occupies the same time, (ii) their results are available immediately; (iii) their results are useful for diagnosis, not merely for rewarding someone who does well overall or punishing someone who does poorly overall; (iv) they generate lesson plans to improve a student's learning, quickly.

Computer adaptive assessments prevent outright cheating as well as "teaching to the test." It is easy to make a computer adaptive assessment far more secure than

pencil-and-paper tests are at present. The main way in which people cheat on pencil-and-paper test is inputting or changing answers during the period before the legal testing time or in the period after the legal testing time. This method of cheating requires no sophistication or cleverness, which is probably why it is the only common method. While such behavior is easily curbed by having proctors deliver the tests, remain during testing, and remove the tests, states have so far refused to use proctors, citing cost concerns. (Whether such cost concerns are legitimate is not at all clear, but the point remains that pencil-and-paper tests are not proctored and therefore not secure.) In contrast, computer adaptive assessments can easily be designed to be electronically available only during the legal testing period. While a very sophisticated hacker might possibly hack into a computerized assessment and enable people to cheat, we have little or evidence that school staff are willing to try complex or difficult methods of cheating.

Because computer adaptive assessments draw upon a very large bank of questions and no two students can be expected to take exactly the same test, these assessments strongly deter “teaching to the test” in its crude form where teachers literally train students to answer particular questions. Of course, computer adaptive assessments do not and should not prevent teachers from helping their students excel by having them learn the knowledge and skills likely to be tested by the assessment.

2. How does education research play a role in providing reliable information to parents? How can the federal government aid states and school districts in improving these efforts?

Education research can be a much more reliable source of information to parents than are schools themselves. This is mainly because researchers do not feel a strong need to defend existing policies or support proposed policies. They can afford to be objective. In addition, researchers often bring modern scientific methods to bear, and these methods are sometimes less familiar to school and district staff. However, in order to help parents, it is essential that research (i) be held to a high scientific standard, (ii) be as timely as possible, (iii) be made available to parents in an easily interpretable form. The federal government can be helpful on all these dimensions. By setting high scientific standards for its grantees and contractors, the Institute for Education Sciences can strongly encourage the use of the most scientific methods. By encouraging schools, districts, and states to build databases that take fairly standard forms, the federal government can ensure that research is timely. This is because delays in getting data are the main cause of slow research. Most schools, districts, and states will build accurate, fairly standardized databases given sufficiently strong incentives: they are collecting the information anyway. Finally, the federal government can encourage federally funded researchers to publish a version of their research that is intended for parents and other non-researchers. Non-profit organizations often play this “translation” role as well, and it is very important.

3. With such high standards for scientific evaluation, how can the federal government ensure that the research methodology is not overly cumbersome, leading to artificial results that are not relevant in a dynamic and fast-changing classroom?

High research standards really have no effect on how quickly we produce research. It takes no longer to evaluate a rigorously conducted randomized controlled trial than it takes to evaluate the same policy in a less scientific manner. In fact, many researchers would say that evaluating a randomized controlled trial is faster because it is easier. There are three things that do slow education research down, and the federal government can improve two of the three. The first thing that makes education research rather slow is simply that students change slowly. Even the best curriculum in the world does not immediately raise students’ learning. Depending on the intervention, we may have to follow students for a year or several years, and there is nothing that we can do about the pace at which students change. The second thing that slows down education research is data collection. While evaluation itself is quite fast, data collection is slow. Researchers still obtain data through painfully slow processes, in which it is quite normal for researchers to spend months if not years soliciting (even begging) for data, making their way through layers of administrators, and getting approved in long-drawn-out processes. This process need not be slow at all. If schools, districts, and states keep their data in a standardized form, in central repositories, researchers would not be forced to go through this process. Researchers with strong track records could be given a blanket approval so that their data requests were fast-tracked. The third thing that slows down education is the reluctance of many educators to provide data or allow randomized trials on the policies in which they believe most strongly. Their reluctance is based on the fear that the research will not validate their strong prior beliefs. Although this problem is not wholly solvable, any intervention that receives federal funding could be required to provide data to researchers. This would not

only help to ensure that federally funded projects get evaluated well and quickly, it would also create a “culture” of evaluation that is still absent in education.

REPRESENTATIVE VIRGINIA FOXX (R-NC)

4. *During the hearing you mentioned that other countries (specifically in Europe and Latin America) have better administrative data sets than the United States, and you could therefore do better research in other countries. I think a specific example you cited was the Dutch school reform and choice movement. Why do other countries have better data sets?*

Is there something in the US prohibiting them from collecting the same data sets (i.e. student privacy concerns)? Please expand more on why other countries do a better job with administrative data sets.

Most European countries and several Central and South American countries have much better administrative data sets than the United States. This is largely because these countries have more centralized systems of education, and the central education ministry requires schools and districts to upload their data in a standardized format. In the U.S., in contrast, each district has enormous control over its own data and reports only a tiny share to its state government: the data elements required under its state’s accountability program and under No Child Left Behind. While American data bases are improving as states develop longitudinal databases, many states have dragged their feet or succumbed to political pressure so that they are still far from having good data bases, let alone the comprehensive data bases of the aforementioned countries. The resistance to data bases comes from interest groups who are afraid that information will expose their lack of contribution to student learning.

The evidence suggests that the independence of U.S. school districts is a good thing for their productivity and their management. If they were centrally managed and did not have to compete at all with one another, American school districts would likely produce substantially less learning than they do now. However, it does not promote efficiency to give each district the right to keep its data in its own way, measure things according to its own lights, and create its own idiosyncratic data access procedures. Such lack of standardization greatly inhibits competition and productivity because it makes comparing schools and evaluating policies very difficult. We have an analogous situation for firms. Although having firms that are independently managed improves competition and productivity, giving each firm the right to report data in a completely idiosyncratic way would not make the market better. It is important for investors that measures of income, for instance, are fairly standardized across firms. Since schools actually engage in a far less diverse range of activities than firms, there is no reason—except for fear of exposure—why they should resist standardized reporting much more than firms do.

U.S. CONGRESS,
Washington, DC, December 5, 2011.

Dr. ERIC SMITH,
20 Eastern Avenue, Annapolis, MD 21403.

DEAR DR. SMITH: Thank you for testifying before the Subcommittee on Early Childhood, Elementary and Secondary Education at the hearing entitled, “Education Research: Identifying Effective Programs to Support Students and Teachers” on Wednesday, November 16, 2011. I appreciate your participation.

Enclosed are additional questions submitted by members of the Committee after the hearing. Please provide written responses no later than December 19, 2011 for inclusion in the final hearing record. Responses should be sent to Dan Shorts of the Committee staff who can be contacted at (202) 225-6558.

Thank you again for your important contribution to the work of the Committee.

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Can you provide the Committee with your views on computer adaptive assessments and whether they can be of benefit to teachers, administrators, parents, and ultimately students?

2. In your testimony, you talk about the fact that strict application of scientific research is often difficult for classroom teachers because of the dynamic nature of the classroom. Can you provide some examples of other types of research that are beneficial to districts and schools?

Dr. Smith's Response to Questions Submitted for the Record

1. Computer adaptive assessments (CAA) have great potential and we should encourage the thoughtful expansion of its use. CAA can provide the opportunity to help teachers more accurately tailor instruction to individual students' needs for both remediation and acceleration. If designed correctly, an adaptive test can also be somewhat diagnostic; helping the teacher or a computer program to identify a student's skill deficiencies. Adaptive tests are best used as formative assessments that help in guiding instruction and support. The data from adaptive assessments should lead to a flexing of the instruction provided a student so that student will be able to pass summative standards based exam by the end of the year.

2. I believe there is a need to research practices that are proving successful in the "real world" over time. For example, as a superintendent in Charlotte I learned a great deal by sharing strategies and performance data with other superintendents that had similar student populations. I learned from them what strategies were making a difference in learning outcomes and what strategies were not successful. Another example was in Florida where I served as Commissioner. During that time we prepared to build a data base that would correlate school performance data and teaching strategies. Again, our intent was to learn what conditions led to success and what conditions led to failure. This is not to discount more rigorous scientific research but I believe we can have a fuller picture by expanding our research strategies in the "real world".

U.S. CONGRESS,
Washington, DC, December 5, 2011.

Dr. GROVER J. "RUSS" WHITEHURST,
775 Massachusetts Ave. NW, Washington, DC 20036-2013.

DEAR DR. WHITEHURST: Thank you for testifying before the Subcommittee on Early Childhood, Elementary and Secondary Education at the hearing entitled, "Education Research: Identifying Effective Programs to Support Students and Teachers" on Wednesday, November 16, 2011. I appreciate your participation.

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There are a few states who have already implemented computer adaptive assessments as a tool of measuring student achievement and growth—including Oregon—and a number of others who are interested in following suit, given that computer adaptive assessments provide essential and timely data that can more accurately illustrate student placement, student growth, and instructional needs.

Can you provide the Committee with your views on computer adaptive assessments and whether they can be of benefit to teachers, administrators, parents, and ultimately students?

2. How can the purpose and operation of the national research and development centers, the RELs, and comprehensive centers be improved upon? Are these entities actually serving regional and local needs and assisting states, school districts, schools, and teachers to improve student achievement?

3. The Institution of Education Sciences is responsible for evaluating federal programs for their impact on improving student achievement. However, the Office of Management and Budget (OMB), the Department's Office of Planning, Evaluation, and Policy, the Government Accountability Office (GAO), and private entities also evaluate federal programs for their effectiveness. Is the current system working? Are each of these agencies using the same metrics in evaluating programs? Which agency is in the best position to evaluate federal programs?

Dr. Whitehurst's Response to Questions Submitted for the Record

CHAIRMAN HUNTER

Computer adaptive assessment has already been incorporated into psychometrically advanced assessment programs, including those carried out by the U.S. Department of Education's National Center for Education Statistics. For example, the Early Childhood Longitudinal Studies, which follow a large sample of children through school, carry out all of their student achievement assessments using adaptive technologies. Adaptive testing shortens test times, allows children to get more questions that probe their understanding (rather than a lot of questions that are too easy or too hard), and requires the development of assessment scales that are more likely than traditional assessments to be aligned from grade to grade. The timeline for feedback to educators from computer adaptive testing is orders of magnitude shorter than the timeline for obtaining results from paper and pencil tests. Finally, the costs of computer adaptive testing when spread over a few years to amortize start-up investments in technology are lower than the costs of traditional testing. The federal government, in my view, should not stand in the way of the use of computer adaptive testing as it has done through the Department's interpretations of NCLB assessment requirements. And to the extent that discretionary funds are available, Congress should consider providing money to states to advance the use of this technology.

As I indicated in my testimony, the RELs are not working well in that much of the work they produce is of little relevance to the needs of those responsible for schools in their regions. This has been the case for 40 years. My recommendation is that in lieu of authorizing RELs Congress should provide a voucher to state departments of education that could be used specifically to purchase data analytic services that use statewide longitudinal databases to address questions of immediate importance to decisions about education policy at the state level or among numerous school districts within the state. These analytic services could be obtained from any of a number of entities, including the existing RELs, that pass muster with the Institute of Education Sciences in terms of the quality of their research services. IES should retain a review function with respect to the analyses that are commissioned with the research vouchers to make sure that the conclusions reached are justified by the methods deployed.

The national research and development centers serve an important function in providing for concentrated team-based research on education topics of national interest. However, it is a mistake, in my view, for Congress to dictate the topics on which the R&D centers should focus through authorization language per the current version of ESRA or the amounts that should be carved out for R&D centers vs. regular competitive grants per appropriations language. The director and professional staff of the Institute of Education Sciences with the advice and consent of the National Board for Education Sciences is in the best position to know when there is both need and capacity in the field for an R&D center on a particular topic. In its efforts to comply with Congressional intent, IES frequently has held competitions for R&D centers on particular topics that generated only a few applications and

none of quality. This would not have happened if the hands of IES had not been tied on R&D centers through authorizing or appropriation language.

Comprehensive centers are not part of ESRA and are not administered by IES, although frequently the contractor for a regional comprehensive center is the same as the contractor for the regional REL. The comprehensive centers are part of a patchwork of technical assistance providers that various offices of the Department contract with through a variety of program accounts. In my view the technical assistance entities that are funded through ED, including the comp centers, provide services of uncertain quality that are rarely driven by customer demand. Similar to my recommendation with regard to the RELs, I suggest that Congress consider shifting to a mechanism in which some portion of program funds that are appropriated pursuant to ESEA, IDEA, Perkins, and other big budget programs is reserved for use by state departments of education to purchase technical assistance for implementation of the federal education programs. The Department could be authorized to create a list of contractors who have demonstrated the capability of carrying out technical assistance on particular topics.

There are two important distinctions that are relevant to answering this question. The first is between evaluations of impact vs. implementation. Impact evaluations address the question of whether a program has a causal effect on the outcomes it is intended to influence. For example, an impact evaluation of Reading First would ask whether the reading achievement of participants in the program is accelerated compared to similar students who are not participants. An implementation evaluation, in contrast, would ask whether the funds for the program were expended as dictated by legislation and regulation. For example, were Reading First funds deployed to provide professional development for teachers as required in NCLB?

The second distinction is between primary evaluations that are carried out by through the collection and analysis of original data, e.g., assessments of students carried out by the evaluation contractor vs. secondary evaluations that are based on summarizing and providing recommendations and conclusions based on a synthesis of results from previously published studies and other data sources.

OMB and GAO do not carry out impact evaluations and rarely engage in primary evaluations. Rather they summarize what is known from primary data collections and from simple investigatory techniques such as engaging in interrogatories of program participants or program implementers.

The Department's Office of Planning, Evaluation, and Policy Development (OPEPD) has limited itself in recent years to implementation evaluations that are based on primary data collection and quick turn-around secondary evaluations that are of high relevance to the Secretary. OPEPD does not presently carry out impact evaluations, although it used to and nothing in statute prevents it from doing so.

Private entities sometimes carry out impact evaluations of federal programs but these are typically conducted years after the program has been implemented and are based on available administrative data, e.g., existing school records, rather than primary data collection that is designed ahead of time to answer a range of planned questions. Thus the type of impact evaluation of a federal program that might be carried out, for example, by a university-based economist would only very rarely have the timeliness or the depth and breadth to answer questions that are important to Congress and the administration in decisions about program authorization and funding.

Presently, only the Institute of Education Sciences carries out large scale impact evaluations of federal programs. None of the other entities listed in the question overlaps with IES in this function. This is a critical function that is being carried out well by IES.

Presently, only IES and OPEPD carry out large scale primary implementation evaluations. OPEPD has generally carried out its implementation studies well, but that are significant inefficiencies in having two separate divisions of the Department involved in evaluating a single program. For example, program implementers may be required to answer a similar set of questions and respond to duplicative data requests from IES and OPEPD. Some of these problems of overlap cannot be solved by better coordination between IES and OPEPD because the activities are funded by different contracts that are awarded on different timetables to different contractors. Further, there is always a legitimate concern about whether an office, OPEPD, that develops policy for and with the Secretary and that has no independence from the Secretary should be charged with evaluating whether programs the Secretary is charged with implementing are being carried out as intended in statute. For these reasons, it is my recommendation that IES be given the sole authority by Congress to carry out impact and implementation evaluations that are either required or permitted in program legislation. This has been the historical drift both within legislation and in the division of responsibilities between IES and OPEPD as administra-

tively determined by the Department. It would be wise to cement this division of labor legislatively, in my view. In doing so Congress should designate funds specifically for evaluation purposes rather than setting aside a percentage of funds in program authorizations to be used for "national activities, including evaluation." The latter language is problematic in that it creates a competition between IES and the Department's program offices for funds from the same pot, and it empowers the Secretary to throttle funds for evaluation activities that might expose performance issues with programs with which the administration is identified politically. In my view, all education programs with an annual price tag above a threshold of \$20 million should be subject to an implementation and impact evaluation before they are reauthorized. These evaluations should be carried out by IES with funds specifically targeted to that purpose by Congress.

[Whereupon, at 11:27 a.m., the subcommittee was adjourned.]

