

ALBERT SHANKER INSTITUTE

**"FROM BEST RESEARCH TO WHAT WORKS: EARLY
LANGUAGE & LITERACY DEVELOPMENT"**

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MS. EUGENIA KEMBLE: Good morning. I'm Eugenia Kemble, Executive Director of the Albert Shanker Institute. I want to welcome you all here this morning. We anticipate that some others will be coming in as they drift through the tornadoes and various other weather conditions out there.

I would like to open this up by talking a little bit about the first part of the title of this event because this event is not only the substance of what we're discussing here, but how we're discussing it and how the people who are here have chosen to be here. So it's a little bit of why are we here and what are we doing. That's my role here this morning because the meeting has more than one purpose. So I want to say a word about this in terms of Al Shanker, who many of you knew. He was a master at taking the best of what is known and what is often hidden in the research world and making it a matter of public discourse. I think he was uniquely talented in this respect and I think many of you who knew him think so as well. He could do this because he was serious about ideas and evidence; because he was a great teacher, really, an expert in what you might call the pedagogy of teaching the public and teaching school people, and because he spoke as a representative of the people who do the work, who really have to take the best of what is known into the schools and making something happen.

His first among students, Sandy Feldman, who is present of the AFT, as you know, and who was supposed to be here today, is very committed to this issue and to the series that we are running. She was supposed to be on a plane to Germany late this afternoon, and much to her instinctive credit, got some misgivings about being able to make it and she decided about a week ago that she really was too nervous that she would get in trouble, and I think the weather today is a testament to the wisdom of her decision. But she is deeply committed to this issue, and of course very much someone who understands Al and his legacy.

I want to talk a little bit about Al's example in terms of how we in the institute see the current picture with respect to this whole question of research and practice. First of all, I think that there has, as we all know, been a historic disconnect between good researchers and what educators and others know about it and can really use. Standards-based reform movement is pushing for this gap to be closed. There is a transparency and a richness of data, and I'm sure we could talk a long time about how good the data is and what ways it could be better, but there is a wealth of data, either out there already or coming because of standards-based reform, and I think it is pressing for this gap to be closed.

I would also say, at the risk of not everyone agreeing with me, that the research community has not really policed itself and monitored itself with respect to its own standards of quality, leaving it to those who have to deliver in the schools to figure it all out and since I come from that end, I understand very well what a tough job that can be.

And so what we're left with is a situation where people who have their ideas already formed are grasping for the research to shore them up, rather than letting what we know lead the policy in the ways that it should move.

Now, this is changing, I believe. We have a new NRC committee on scientific principles for education research. Lisa Towne was going to be here. I'm not sure -- she may come soon. And this report represents the beginning, I think, of standard setting and benchmarks for the judgment of good research. And in a sense, and here I am coming from an organization that was created by the organization previously led by somebody who was regarded as a political leader, but who I believe really wanted to de-politicize the kind of information that was going into the schools about what people needed to do because he saw a membership that was suffering from this situation.

And I think that the report puts this very well. So I just want to read one paragraph out of this new report because I think it captures better than I can put it how this problem works. "Although difficult to measure precisely, it seems clear that by and large the public trusts scientists to develop useful knowledge about foundations of disease and their prevention and treatment. In contrast, in education research, technical achievements are often ignored and research findings tend to be dismissed as irrelevant, or sometimes vehemently discredited through public advocacy campaigns when they do not comport with the conventional wisdom or ideological views. Further, with dispute about scientific quality, findings from poorly conducted studies are often used to contradict the conclusions of higher quality studies. In the social realm, people and policymakers do not tend to distinguish between scientific and political debate as they do in medical and other hard sciences, seriously weakening the case for such research and evidence-based decision making."

The Shanker Institute comes to this problem from the practical side, given its origins, and we have selected not only this issue but others because of our sense of a gap not only between the research community and the practitioner community, but between where public policy now stands on a given issue and what the research tells us. Our first issue is the question of early childhood language learning and literacy, is one where there seems to be a huge recognition that the evidence is profound for what we should be doing, and yet while policy is moving, it's moving much too slowly to deal with the kids that we know need new serious forms of attention.

So what do we do? We wanted to make a quality statement about who was going to be featured in these forums. Al would have wanted us to do that. We're not researchers. What we know best are the ramifications of what happens when good research doesn't reach the field. And in this case we have a pretty good sense of what happens to poor kids when they reach first grade with poor language and pre-literacy skills. We also don't like it that practitioners are out there floundering when researchers don't take a stand for quality.

Way back in 1983, and I'm speaking from my previous AFT hat, which should come as no surprise, AERA, American Education Research Association, gave AFT an

award for the best program translating research into practice. It's called the Education Research and Dissemination Program, and some of those who work on it are here today. Those who do work on it know that it had been left to them all these years, some almost 20 years, to figure out what to feature in that program, even though they got the award for doing that kind of translation.

So after looking at methodology ourselves -- and I mean Anne Heald (ph), who most of you know, who's right over here, who really put this together in conjunction with us, and sorting out the differences between experimental and quasi-experimental and quantitative and qualitative and doing the best job we could as logical lay thinkers to figure out what this was all about, we decided, and she did this work to call the people that we deemed were the most recognized, prestigious, respected people in the research field. Now you could quibble about how did we pick those people, but I think it's pretty clear that we talked to those that are issuing the reports and getting the attention, and whose methodologies have been pored over in all kinds of peer reviews.

And the names that came to the top over and over again are the people at this table. They're not the only names who came to the top, but these names are clearly the people who are here, some of the most highly respected people in the field of early language, pre-reading skills and literacy in the country.

I might also mention, in your packet is a chapter by two authors, Hardt and Risley, which we also found to be terribly important and profound work. They're not here today because we were looking for people who could cover the spectrum of the learning research and the implementation research, what was going to make for a successful taking of all of this into the schools.

As Milt Goldberg, who's from our board, would testify, and I think Bill Brock knows too, this is an issue that's been on the top priority list for the Albert Shanker Institute. Our board, which is made up of educators and businessmen and labor people and researchers and academics, have sensed that this is something we should give a lot of attention to, and that is why we have featured it as our first issue here.

We could not have done it without Anne, who did all this work that I just told you about, and without the back-up from the Education Quality Institute, and Steve Fleischman, who supported her and allowed us to use her. She is a senior consultant with them, and if any of you know about Steve Fleischman's history, he is a fellow mentee of Albert Shanker. It should come as no surprise that his organization and ours work in tandem.

I might also say that we have designed this to be a discussion session, so after each of these presentations we will have a period of time when we fully expect the experts around the table, and many, most of you are indeed experts, to get into this discussion.

Ginny Edwards is going to moderate this session for us. We're grateful that she could come. She is the editor of *Education Week*, a publication that I believe Al actually helped get started when it first came into being, however many long years ago that was. And she's been a good friend to the Shanker Institute. She has a wealth of background in reporting, coming out of Louisville, Kentucky originally as a reporter and working for the Carnegie Teacher Foundation. She's done a lot of work in sorting out what good teachers need to do, and also additional research work. She's going to lead the discussion here today.

I just want to wave one thing at you that Ginny is responsible for because she's actually the publisher of *Education Week*. I might have said editor before. This, as you may know, is their most recent report, which features early childhood education. It gives us a start at looking at what the states are doing. That creates its own political pressure, so we're very grateful that they spent time on that.

The way we're going to do this is that she's going to talk a little bit about substance and context of the issue. Then we're going to break. Everybody's going to get their lunch and eat for a little while, and then we're going to go to the heart of the matter.

Welcome.

MS. VIRGINIA EDWARDS: Good morning. I'm delighted to be here and to be serving as the moderator of this important session. Genie actually said almost everything that I could think. In terms of setting the context I think that we're very much on the same wavelength.

I've got two jobs today. My first is to set some context for our discussion, and the second will be to introduce the panelists. I guess I have more than two jobs, given that I'm going to keep order as the discussion starts, but at least I'm going to take the first task I've got and get that out of the way before lunch.

One other thing that's going to happen is we're going to take, and I'm going to really hold you to this, just a bit of time to go around the table, and you're going to say basically name, rank and serial number, so that we all know who's here after I talk. You have to listen to me first.

The timeliness of this session is undeniable. Early childhood education, including this whole issue of early literacy, has risen to the top tier of the education policy agenda and obviously you guys now know, if you didn't already, that we took on the early childhood issue in this past year's Quality Counts. Here's my little sound bite line. Based on the premise that quality counts in early learning too, we decided to take on early childhood education.

We wanted to take a step back and really look at the state policies that shape the experiences of kids before they enter formal schooling. Among other reasons, we decided to tackle the topic because of the intense interest among policymakers and

practitioners in this whole area of early reading. At the state level, governors, lawmakers and education leaders are stepping up their efforts to ensure that youngsters are ready for school, and we all know, of course, that the federal administration has stepped up on the reading front as well. So very briefly, let me just remind everybody that the newly re-authorized Elementary and Secondary Education Act includes two reading programs aimed at young children. The smaller of the two is the Early Reading First program. It's a competitive grant program. It's authorized at \$75 million this year, and it seeks to enhance reading readiness for children in high poverty areas and areas where high numbers of kids are not reading at grade level. It's aimed at 3- to 5-year-olds, and it really is to help them prepare to read, and therefore for school.

The second program is Reading First. It's authorized at a bigger sum of money, \$900 million this calendar year, and provides help to states and districts in setting up scientific, research-based reading programs for children in grades K-3. So there, too, is this connection with this session today of talking about what the research can tell us about which direction to go.

States may use up to 20 percent of the money to provide professional development for teachers of grades K-3, among other options for their use of that money, and states must distribute at least 80 percent of the money to districts through a competitive grant process and they have to give priority to high risk, high poverty areas.

But we also know that the public cares a lot about the importance of early childhood education. Here too I can toot my own horn a little bit. Last week *Education Week* and the Public Education Network came out with a poll that examined what Americans and their elected officials can do to ensure quality education. Throughout the poll, one of the major themes was that the public emphatically defended education budgets against possible cuts. But then we asked them, when faced with the hard realities that you might have to cut, what would your priorities be for protecting?

Twenty-four percent of the respondents said early childhood education was their first priority to be protected. That's more than the next most often cited priority. There's a whole clump that falls under early childhood that basically looks at teacher kinds of issues, but any one of the teacher issues didn't even get as many as the 24 percent. In fact, a total of 62 percent of the respondents made early childhood education either their first or second priority to protect from budget cuts.

Okay, a little bit about early literacy. We all know that kids learn from the moment they're born. The quality of early care and the education that young children receive lays the building block for their future success in school. It's generally acknowledged that you can't begin preparing children too early to begin to read. Numerous studies have found that reading aloud to even the youngest children holds substantial benefits for them. I feel sort of silly talking about these things, given that this panel is quite a luminary on these issues.

Exposing babies and youngsters to books and other reading materials in the home and at day care centers, child care centers, helps initiate them into the literate world, and seeing others read can stoke their interest in reading as well. Experts say that our world is becoming steadily more literacy-based. For instance, communications that might have taken place by telephone and by just talking -- how about that -- not so long ago are now being conducted by e-mail and fax. So preparing children to read takes on a new degree of urgency in the 21st century.

It's been well established that reading readiness, arriving in school ready to learn to read has a high correlation with reading ability. A child's ability to identify letters of the alphabet is thought to be the strongest, I think, if not the strongest, predictor of his readiness to read. Research also points to the critical importance of phonemic awareness in learning to read. As I'm sure you know, phonemic awareness is the ability to hear, identify, and manipulate the individual sounds or phonemes in spoken words. It is thought that phonological awareness develops by about age three, and gradually improves over time.

So with so much agreed upon in the research field, the question becomes where do we go from here? How do we encourage good reading preparation, both at home and in preschools and in childcare centers? Are there established programs to which caregivers and parents can turn to show them the way to move children onto the reading readiness path?

I'm going to take one minute here just to note something Genie said, or echoes what Genie said. For the past few years I've spent a good deal of time trying to figure out how better to connect research to policymakers and practitioners. We all know that the education research arena suffers for a variety of reasons from a profound disconnect. This is what Genie was talking about. And in fact, the personal thing I can add to this is that we did an environmental scan last year, my organization, to really look at why there were these disconnects.

Basically what we found it boiled down to is that there's so much noise in the system from advocates and others that there's basically information overload. In addition, the system is generally not very receptive to research and to new information, and teachers and other practitioners have frankly little incentive and little time to keep up to date on research findings. For policymakers' part, they too often find it easier to make decisions based on anecdotal evidence, individual experience or ideology.

Finally, the dissemination of research findings and information about research is not very effective. Unlike research in the sciences, education research is really at this point not systematically evaluated, sorted by significance, or made available to potential users on a regular basis in readable and understandable language that's accessible.

So now I'm going to turn to this other mini-task. We're going to go around the room, and here's how I want you to do it. I'm going to model it. I'm Ginny Edwards, editor and publisher of Education Week.

MS. KEMBLE: Eugenia Kemble, Executive Director, Albert Shanker Institute.

MR. BILL BROCK: Bill Brock, Chairman of Bridges Learning Systems.

MS. JENNIFER ALEXANDER: Jennifer Alexander, Senior Program Officer, Education Quality Institute.

MS. DANNA BAILECK: Danna Baileck, Consultant, Education Quality Institute.

MR. BUZZ BARTLETT: Buzz Bartlett, President, Council for Basic Education.

MS. THERESA CLARK: Theresa Clark, Senior Policy Analyst at the National Governors Association.

MS. SHANNON PIEDRO: Shannon Piedro, Director of Education Programs at the French-American Foundation.

MS. EMILY PENDER: Emily Pender, Research Assistant, Senate Health, Education, Labor and Pensions Committee.

MR. JOHN BARRON: John Barron, with the Coalition for Evidence-Based Policy at the Council for Excellence in Government.

MS. KATE WALSH: Kate Walsh, recently hired by the Coran Ellis Foundation to direct a new English arts curriculum.

MS. PEG GRIFFIN: I'm Peg Griffin, working on a sequel to preventing reading difficulty, preparing our teachers, and the Shanker's preschool curriculum group.

MS. NAOMI CARP: I'm Naomi Carp, and I work for Dr. Whitehurst in the Department of Education.

MS. MARCIE YOUNG: I'm Marcie Young. I'm the Executive Director at the Center for the Childcare Workforce.

MS. GAIL McCALLY: I'm Gail McCally, and I work at the Congressional Research Service.

MS. GEE DALKIN: I'm Gee Dalkin, and I am an early childhood specialist for the National Head Start Association.

MS. MELISSA McCABE: I'm Melissa McCabe. I'm research associate at Education Week.

MS. YOAN MARTINEZ: Hi. My name Yoan Martinez and I'm from the National Council of La Raza for the director of early child education.

MS. DARIAN GRIFFIN: Darian Griffin, Associate Director of Educational Issues at the AFT.

MS. EVELYN MOORE: Evelyn Moore, President, National Black Child Development Institute.

MS. GABRIELLA GOMEZ: Gabriella Gomez, Senior Associate, American Federation of Teachers.

MS. SHUELLA YUBANKS: Shuella Yubanks, early childhood professional associate of the National Education Association.

MR. JACK JENNINGS: Jack Jennings, with the Center on Education Policy.

MR. JERRY SCHROEF: I'm Jerry Schroef. I'm Executive Director of the American Educational Research Association. I mention my title only because I have it only for another two days. (Laughter). We have a new director, Felice Levine, who's from the American Sociological Association starting on Monday.

MR. TIM GRIFFIN: Tim Griffin, White House Office of Science and Technology Policy.

MR. RICHARD COLLENBURG: Richard Collenburg, Senior Fellow at the Century Foundation.

MS. RUTH WATTENBERG: Ruth Wattenberg, editor of *American Educator*, the professional publication of the American Federation of Teachers.

MR. MILT GOLDBERG: I'm Milt Goldberg. I'm a distinguished senior fellow at the Education Commission of the States, and an adviser to the National Alliance of Business.

MS. BETHANN BRYAN: Bethann Bryan, and I'm senior adviser to Secretary of Education Ron Paige.

MS. CHARLOTTE FRASS: I'm Charlotte Frass. I'm the legislative director for the American Federation of Teachers.

GENTLEMAN: (off mike), senior vice president, NDRC.

MS. ANN FIELDS: Ann Fields, consultant, Education Quality Institute.

MR. DAVID JACOBSON: David Jacobson, senior research scientist, education development Center.

MR. RUSS WHITEHURST: I'm Russ Whitehurst, Assistant Secretary for Research and Improvement at the US Department of Education.

MS. SUSAN LANDRY: Susan Landry, Chief of Developmental Pediatrics division at the University of Texas, Houston Health Science Center.

MR. MATT LaCOUE: I'm Matt LaCoue, Executive Vice President, American Federation of Teachers.

MS. EDWARDS: We did great. My understanding is that we're going to break, then we're going to go through a lunch line and bring our lunches back to the table and then we'll keep the conversation going.

(Brief recess)

MS. EDWARDS: (In progress) vice president of the American Federation of Teachers. That's already been said. He was elected in 1998 and he really oversees the day-to-day functions of the union. He also spent 27 years in New Orleans, and at that I'll keep it short. The rest of his bio is in our packets.

Nat?

MR. LaCOUR: Thank you. I think I'll just clear off the remainder of my meal. I'm very pleased to have this opportunity to participate in this forum, both in my role as a member of the Albert Shanker Institute board, and as an officer of the American Federation of Teachers. Those of us that are involved in K-12 education are very concerned that too many children begin their schooling lacking the requisite skills for success. As a consequence, much of the student failure that is occurring in grades K-3 can be traced back to learning deficits that were acquired in early childhood, and this is obviously true for poor and minority children.

Our late president, Albert Shanker, wrote columns on the importance of learning in the preschool years, dating back to the 1970s, and many of you may be aware that AFT's last quest, or educational conference, which is held biannually, our current president, Sandra Feldman, called for early childhood education beginning at age 3, but she stressed that it should be of high quality and that it should be universally available. But we were not suggesting or urging that it be compulsory. If for some reason we couldn't provide it for all children, those of us in the AFT believe that poor children should be given the highest priority.

We also believe that given sufficient time, effort and resources, many of the learning deficits of young children can be corrected and thereby greatly increasing the chance for them to experience success in school. The standards-based reform movement

has created a deep interest among K-12 educators in calling for high quality early childhood education. We all know that an increasing number of states have imposed high stakes testing and the new leave-no-child-behind act also is mandating stiff testing requirements.

We believe that the testing programs will obviously make the public more aware of student achievement, bringing about more transparency. We also believe that schools are being held accountable and they should be held accountable for helping students to reach the required standards and that is to reach them no matter how far behind they are at the beginning of a given grade or subject.

In order for students and schools to be more successful, government and school officials must enact and adopt sound public policies that support the implementation of education programs directed at preventing learning deficits from becoming deep-rooted and then negatively impacting student learning. The need to level the playing field for all students is a matter of educational equity and both the government and school community have a moral and an ethical obligations to make certain all students have a reasonable chance for success.

I'd like at this point to say that there is certainly a need to have teachers to become more aware of what educational research is discovering, but there is very little time inside of the regular educational setting for this to take place. That is, we believe that there's little time. I kind of think differently. Certainly given the fact that teachers must, in addition to teach students, provide custodial care so students cannot be left alone without teachers, I think that we can look to the summer months when actually our schools shut down, and see that as an opportunity to help acquaint teachers with what's going on in research.

I think that there is some evidence that this will work. I recall when I was a young science teacher the Russians put up Sputnik and this government responded by believing that in order for the United States to compete with other nations in the space effort that we needed to do a better job of making sure that we had in our classrooms excellent math and science teachers. So what happened? Well, during the summer months in the '60s the government provided funds for thousands of math and science teachers to go back to schools, and the teachers responded. They were able to go back because there was no tuition, you didn't have to pay for your texts, and you were paid a salary of somewhere between \$75 per week and \$120, depending on whether or not you were married with kids and the teachers responded to that.

I believe in the area of reading instruction, I believe in the area of early childhood education there needs to be the same type of commitment from the government that we ought to provide opportunities for all elementary teachers to go back to school to become acquainted with the strategies for teaching reading. We need to provide an opportunity for teachers in early childhood education during the summer to become acquainted with what is being discovered through research as to what is the best way to help young children overcome their educational deficits.

I just recently completed reading a book called *Meaningful Differences in the Everyday Experiences of Young American Children*," by Betty Hart and Todd Risley and what these authors did was to conduct a study in which they selected across economic strata 42 students. Then they basically got individuals to visit the homes of these students once a month for three years, beginning at age one, when the kids were just beginning to develop a vocabulary and these individuals went in and recorded for a period of one hour per month the utterances and the interactions between the family members and these young children.

And what they discovered was that at the end of this study the students from the higher economic strata had developed a much richer vocabulary that ultimately led these kids to do substantially better than poor kids. And so again, here is where in my opinion research should be driving what we're doing in the classroom because this is an opportunity to find out how we can help our teachers in the pre-K through the third grade to do things that will help the students that come to them behind when they walk in the door, to overcome those problems that impact negatively learning and so to that extent I think that those of us in K-12 education would welcome the opportunity for becoming more aware of how research and the classroom can be connected.

Therefore, I'm pretty pleased with the fact that the Shanker Institute has put together this particular forum. I trust that in the deliberations of this particular group that we will find ways to impact what's going on in the classroom.

Thank you.

(Applause.)

MS. EDWARDS: We're going to move on. Next to speak will be Grover J. "Russ" Whitehurst. Dr. Whitehurst is the Assistant Secretary for Research and Improvement. We know this in the US Department of Ed. Previously he was the leading professor of psychology and pediatrics, and chairman of the Department of Psychology at SUNY at Stony Brook. Dr. Whitehurst has published more than 100 scholarly papers on language and pre-reading development in preschool children. He's truly one of the luminaries in this field.

One of the goals of his work has been to develop techniques and materials that can be used by parents and teachers to enhance kids' readiness for school. Shortly after the Senate confirmed Dr. Whitehurst, Debbie D'Adero, one of our reporters, asked him why he wanted to come to Washington to head up OERI, and he responded it had something to do with putting his money where his mouth is. "As a researcher, I've often talked about how the federal government is not doing a good job, as good a job as it should be, marshaling researchers to respond to the practical needs of the field. Somebody called me on that."

Dr. Whitehurst.

DR. WHITEHURST: Thank you very much. I'm extremely pleased to be here today. The AFT is my landlord, so that when they ask, I try to say yes.

As a preamble let me stick in a commercial announcement, if I may, that's related to some of the themes that have been raised previously. OERI is engaged in several efforts that relate to the general topic that we're considering here today. One of the things I believe we will come to understand before we're finished at 2 o'clock is that though we know a lot about what predicts reading outcomes in children from the preschool period, and what we should be doing to enhance those outcomes, schools, states, localities, people who are having to melt preschool programs have very little to go on in terms of packaged materials or approaches that can be adopted to achieve those outcomes.

So what do you do when the local Head Start director calls and says, what should I use? We can say what you might be doing or should be doing, but it's difficult to point to a particular package of materials and say, if you pick this, you'll at least be starting on the right path.

So OERI launched a competition that we've recently completed to evaluate existing preschool curricula to determine what the effects of those curricula are, both when preschoolers are experiencing them, and then following through to outcomes in first or second grade. An award should be made shortly, and we hope roughly a year or a year and a half from now to have some preliminary information that would advise decision makers on which of these curricula in fact produce the sorts of outcomes that people are desirous of achieving in kids.

Our other effort is a What Works Clearinghouse that speaks to the issue that Eugenia raised about sort of competing research, and how are decision makers to know which research to use. One of my colleagues was testifying on the Hill last week and one of the senators raised a question about a particular reading program and why it seemed that the administration might not be interested in this program for Reading First. My colleague said, well, the research on that really doesn't demonstrate that it's very effective. The senator said, well, you've got your research and I've got my research, and what difference does it make? There is a sort of sense out there in the education field that education research is nothing more than advocacy wrapped around numbers.

The What Works Clearinghouse will be an attempt to establish a clear, consistent set of standards for what represents high quality outcome research. The products approaches curricula can be submitted to the clearinghouse for vetting, and users through a Web-based interface will be able to determine what is the quality of evidence with respect to particular claims for particular products. We think that will be quite helpful.

With respect to the topic of today, I believe my charge was to talk a little bit about why this is a significant topic and what we know about the development of preschoolers in terms of its prediction of later student achievement. Let me give you a little background here why reading is important. Those of you who attended the First Lady's

White House summit last July will have heard some of this before, but I promise you that not all of my presentation is simply a repeat of what I did there.

There is some debate about standards for adult literacy. However, one chooses to define it, there really are millions of adults in the US who are substantially illiterate in a functional sense. That is, they can't pick up a newspaper and read it and understand what's there. And lacking those skills, they are clearly at a very, very serious disadvantage in an economy that's increasingly knowledge-based.

From the National Assessment of Educational Progress, we know that 38 percent of fourth graders nationally cannot read at the basic level. The basic level is the ability to read a paragraph from an age-appropriate or grade-appropriate book and answer simple questions about it. In some localities, Washington, D.C. being one -- we happen to know about D.C. because it's the only school system that is also a state, so we have evidence on it -- 70 percent of the fourth graders in the D.C. schools cannot read at the basic level.

We know that children who have serious reading problems have substantially higher dropout rates, very unlikely to finish four-year college programs, are highly over-represented in a variety of populations of kids with problems such as substance abusers or kids who go to jail, or have status offenses with law enforcement. And further, everyone at the table reads for pleasure and you know the sort of pleasure that comes out of that, the ability to better understand yourself and other people and everything that comes from being truly literate. Kids who don't develop those abilities miss out on that very rich part of human experience.

So what's so hard about reading? Why is it that we have so many children who are not learning to read well, with the disastrous consequences that I've just mentioned? Reading is a code. It's an alphabetic code in which minimal units of written language, letters, are related to minimal units of spoken language, phonemes. The code is easy on half of the equation. A letter is a thing. It can exist in a plastic form, you can touch it, you can make a letter out of play dough, so children have very little trouble understanding what letters are and learning to name them.

What's difficult about the code is that they're linked to these phonemes, and phonemes are very abstract. What is a phoneme? What word would you have if you took the "b" sound away from "bat"? "At." So everybody here is phonemically aware. But that awareness is difficult to come by and is very abstract.

This is an ancient written language called "Odom," so imagine you're a four-year-old and your mom sits down with you with a book and this is on the page, and you hear your mom say something like "ah-um-galum-ah-wong." And now your job is to figure out how these marks on the page relate to that stream of sound. That's hard to do and so the point here is to sort of try to get you in the context of what a four-year-old is trying to solve. It's not an easy task at all.

Another reason that reading is hard is that in English we have something called deep orthography. That means we have a commitment to trying to retain the root spelling of words as they go through various changes. So read that word for me, if you would. "Child." And this word is "children." Why isn't it child-ren? So in other words, the system becomes, in English at least, highly irregular because of our commitment to deep orthography. So we've got this code, which half of it is mysterious to begin with, the phonemic part, and now we throw in exceptions, curiosities, things that have to be learned by rote. So it's difficult to begin with, and then we make it more difficult by our spelling system in English.

Another reason reading is very difficult is that it places a lot of processing demands on phonological memory, particularly when a child is beginning to read. The laboratory that I left behind at Stony Brook has a variety of ongoing studies. I was looking at a tape a few weeks ago of a first grader sitting with her mother trying to read from a simple children's book. It took this child so long to get through an individual sentence that by the time she had sounded out that sentence, there was no way in the world she could remember the sounds that came out of her mouth sometimes two or three minutes ago for a single sentence. If you can't remember the sounds that you have sounded out, how can you string those sounds together into a spoken sentence in your head and understand what you've read?

Clearly that process doesn't place such a great demand on memory if you're reading more fluently, but it's clear that some children have a neurological difference that makes them less able to remember sounds than other kids, and it's probably this neurological problem that is at the root of true reading disabilities.

Here is our representation of where this problem exists in the mind of a typical child. You'll see it's next to the wiggling center and immediately below the bath avoidance center.

And finally, reading is very difficult because of what I would euphemistically call "instructional confusion." Instructional confusion occurs for vast numbers of children who encounter in first, second and third grade teachers who do not understand what reading is about or how to teach it and so children are struggling with this confusing code and irregular set of mappings. Some may have neurological problems that make it more difficult for them and then they have instructional materials and teachers who aren't helpful.

We frequently find when we look at teachers in the elementary grades that rather than helping a child understand this code, teachers, for example, will ask children to guess the word, or to look at the pictures in the book and try to figure out what the word means, or to focus on the syllable as a unit and try to get children to understand syllables. The code is an alphabetic code, letters to sounds, and if teachers don't understand that, don't know how to deal with children's difficulties in understanding that code, focus the child in the wrong direction and it makes the task all the more difficult.

So why are we interested in pre-reading development? Well, there's an assumption here that reading is really something that does not start in kindergarten. Rather, it starts shortly after birth, that there is a continuum of skills that develop over time and this developmental process prepares some children much better than others to be ready for formal reading instruction when they start first grade. A definition here is that when we're talking about pre-reading development we're talking about skills, what children can do. Knowledge, what's in kids' heads' Attitudes or dispositions toward reading, whether children enjoy being read to, whether they like to go to the library. And the environment that supports the development of those skills, knowledge and attitudes, such as whether a child is read to at home. This together represents a domain of pre-reading development.

This is just representing it graphically, so there are environments like shared book reading skills, such as knowledge of letters of the alphabet, attitudes, whether children enjoy written material. These precursors eventually affect a child's ability to learn to read.

One of the distinctions that I've found useful is a distinction between two domains of reading. I think you have to understand where children are being asked to go to in terms of learning to read before you can think about what they need to acquire in the pre-school period. The distinction here is between outside-in skills and inside-out skills. I've frequently used an example from an award-winning children's book called *Miss Rumphius*. It's a sentence I encountered when I read the book. It stuck in my head. "She sent away to the very best seed house for five bushels of lupine seed." This is a sentence in this children's picture book.

Well, I have the inside-out skills to read that sentence and as I saw it written on the page and I sounded it out. Though I'm not reading it now, I could, and any of you could. So the inside-out skills are understanding of print units of letters, being able to translate those printed letters into sounds and blending them together into spoken words.

But what does that sentence mean? She sent away to very best seed house. Who is the she there? It's not in the sentence, is it? It's outside the sentence somewhere. That's why I'm calling these outside-in skills. It's somewhere else in that picture book. "She sent away to the very best seed house." What's a seed house? If you grew up on a farm, maybe you've got a clue what that is, if you're a gardener. But I can imagine a child thinking about a house made out of seed, trying to come out with a sense of what that is.

For five bushels. What's a bushel? And lupine seed. I guess the sentence stuck in my mind because I didn't know what lupine meant. I thought, well, golly, it's a children's book and it's thrown me for a loop. I'm going to have to look this one up.

So the point is that children's understanding of the world, their knowledge and vocabulary, their knowledge of what came before a particular written sentence, all is part of the context that is necessary for reading and so if this model captures the essence of

what reading is about, and if in fact there are these two domains, the skills that allow a child to sound out printed words, and then the skills that allow a child to understand those words as sounded out, then we might find precursors of those two domains in the pre-school period.

What are some of the outside-in skills? Children need to understand narrative and story structure. Stories do have a typical structure. There is a character introduced. Something happens to the character. The character encounters a problem of some sort, so kids are going to the zoo on a bus. Kids get on the bus. The bus breaks down. That's the problem. All the kids get out and they help the bus driver put on a new wheel. There's some resolution of the problem, and they get to the zoo. Stories have that sort of structure, and children who hear a lot of stories come to understand those structures. They have, if you will, conceptual pegs or schemas on which they can organize a story as it's being heard. Children who do not have that experience are very confused by what they're hearing. They don't understand what it's about.

My older son, when he was two would tell us stories and they were cute because they did not incorporate typical narrative structure. One of his favorites was a scary story that would start like this, "There was a little boy and he went into a house and there was a long, long dark hall. And he went down the hall and at the end of the hall there was a door, and he opened the door and there was a long, long dark hall." And it just kept going. There was never a resolution. He didn't capture the structure of stories very well. Conceptual and semantic knowledge. Seed house. Lupine seed.

I picked up a cab back to my office yesterday, and the cab driver was loquacious and told me what he did. He was an older fellow here from D.C. and he's coached Pop Warner football for years and was telling me he was going to get out of it, had done it for a long time. I said, what bothered you about it? He said, well, you know, these 11-year-old kids come in and they have to fill out these forms. And I'd say, what's your address? And they don't know what it is. I'd say, what's your birth date? And they don't know what it is. And I'd say, what section of the city do you live in? And they don't know. And when you put that together with the fact that lots of them have bad attitudes, I'm just getting tired of it and I think I'll do something else.

But isn't it a tragedy that an 11-year-old doesn't know his birth date, or really what section of the city he lives in. When you lack that sort of conceptual and semantic background, it's very difficult to understand what you're reading when the problem is writ large.

Inside-out skills, phonological sensitivity -- the "bat," "at" ability that I was talking about, the ability to rhyme. Print knowledge. Kids who have a lot of pre-school experience with books know, for example, that print runs from left to right across the page. They know the difference between the front and back of the book. They know how to turn the pages. All of that knowledge is a precursor. Functions of print. What's a menu for, for example? And alphabet letters.

Writing skills such as the ability to draw, print, scribble. I actually had a serious disagreement with Head Start people years ago because we were trying to do an intervention and it required the kids to try to write their names and the local Head Start administrator said, we can't do that. I said, why not? She said, because these kids don't know how to hold a crayon. My reaction was, gosh, that's not an excuse for doing this intervention. That's a problem you really need to solve.

What do we know about poverty and pre-reading? Well, we know that in terms of outside-in skills such as vocabulary there are large and very significant functional and statistically significant differences between kids who are reared in poverty and kids who are reared in more advantaged circumstances in terms of the vocabulary that they bring to kindergarten. There are many, many kids from low-income homes, including thousands in this city, who could not name a chicken. If you showed them a picture of a chicken and said, what is it, they would not know the name. Would not be able to tell you what a triangle is by name.

Again, those vocabulary differences related to the Hart and Risley study that we've heard mentioned here twice today, are devastating because once you learn to decode written language and sound it out if you don't know what the words mean, if you sound it out it's like reading Spanish. I can read Spanish quite well, thank you, and if you understand Spanish you'll know what I'm saying when I read it, but I don't have a clue what I'm saying. It's a regular language. If you don't know the words, you're in difficulty.

Inside-out skills, vast differences in letter knowledge. I'll talk to you later about that as a predictor. Environmental differences. Lower frequency and quality of book interactions in the home, lower frequency and quality of language interactions. My colleague here, David Dickinson, has done some of this work and you find that if you look at interactions around mealtime, for example, that the quality of the language used varies with social class and most of the language that occurs in many low-income homes is sort of directive language. Eat your peas; don't hit your sister. Stop it. Do this. It never goes beyond the current circumstance to talk about things past or in the future. What did you do yesterday and how did you like that, and what do you want to do tomorrow, and how about that trip we took. Do you remember? That sort of language occurs very infrequently.

Fewer alphabet materials. Simply A, B C's, plastic letters, things to play with that give children the opportunity to learn the alphabet. The frequency and the availability of those materials varies dramatically. They're available in 100 percent of middle class homes, less than 50 percent of low-income homes.

One of the frightening things here, one of our challenges is that early reading deficiencies are frighteningly stable. A child who is failing in reading at the end of first grade has almost a 90 percent chance of still being a failure at reading at the end of fourth grade. And if you're failing at the end of fourth grade, you're in serious trouble all over the place, not just in reading.

What do we know about the dimensions that I was just describing to you in the context of Head Start, the federal government's major intervention directed toward improving the school readiness skills of children from low-income backgrounds? In terms of skills and knowledge, what do we know about vocabulary? We know that children enter Head Start about a standard deviation below the mean. If it were an IQ score it would be 85 instead of 100 on a test of vocabulary, and show a little bit of progress over the Head Start year but not much. So they start kindergarten substantially below the typical child in this country in knowledge and vocabulary.

What do we know about inside-out skills? Letter writing. By the way, the data that I'm mentioning to you come from research conducted by Head Start. The FACES studies, the Family And Children Environmental Survey. It's a nationally representative sampling of children who attend Head Start with measurements at the beginning and end of Head Start and follow-up through the early elementary school grades.

Inside-out skills, letter writing. A typical child begins Head Start not being able to write a single letter of the alphabet, and exits Head Start with no progress on that dimension. Letter naming. A typical child enters Head Start not able to name a single letter of the alphabet and exits Head Start with no progress on that variable, still unable to name more than one or two letters of the alphabet. Head Start kids actually on standardized tests actually fall behind over the Head Start year in their alphabet knowledge.

Print knowledge. The typical child that begins Head Start not knowing which way print runs on the page of a book and exits Head Start still not knowing which way print runs on the page of a book. Environments. Book interactions. There's no increase in the frequency, which is low, of parent-child shared book reading over the Head Start year. And teachers' goals, only five percent of Head Start teachers mention language and literacy as primary goals of Head Start.

To get to the meat of my assignment, let's talk a little bit about the science of the relationships between pre-reading skills and reading outcomes in elementary school. In terms of alphabet knowledge mentioned previously, there's a large literature in which people have correlated children's ability to name letters of the alphabet with reading outcomes. One that I'm fond of quoting is a study by Harold Stevenson and Newman, published in 1986. I like it because it was long-term. They looked at a child's ability to label alphabet letters at entry into kindergarten, followed those children up into 10th grade and gave them a standardized measure of reading comprehension. The correlation was .52 between letter knowledge at kindergarten entry and reading comprehension in grade 10, a very powerful correlation for that span of time. You can find little else that is predictive to that degree.

One of the components of the Office of Educational Research and Improvement is the National Center for Education Statistics. One of their very important research projects is the early childhood longitudinal study kindergarten cohort. This is a

nationally representative sample of 22,000 kindergartners, assessed first at the beginning of kindergarten, at the end of kindergarten, and followed through fifth grade. We've just completed a data analysis for the children through the end of first grade.

This table represents the correlation between children's what are called resources at entry into kindergarten and their performance on reading assessments at the end of first grade and consistent with what Ginny indicated earlier, letter knowledge is the single strongest predictor of later outcomes, with number knowledge, interestingly, also being a predictor of reading outcomes. Something called approaches to learning, which is a teacher-completed survey of the child's sort of behavior and dispositions to be engaged in classroom activities also being an interesting predictor.

Read to frequently is also significant, but let me point out that you have to be careful about statistical significance when you have 22,000 kids. So the more participants, the larger the number of units in the analysis, the most likely you are to be able to detect a small effect. So even though we talk about frequency of shared book reading as something that's extremely important, you see here that though it's significant, its effect is really quite small.

There are deficiencies of the sort of analysis that could be done with something like the ECLS data. In order to assess 22,000 kids you have to do it quickly, efficiently, and sometimes not very thoroughly. So you get kind of a snapshot and a rough view of what's important, but you're not allowed to collect a more complete set of measures and do a more thorough statistical analyses that might give you a clearer picture.

A fellow named Chris Lonigan at Florida State has done a lot of work that, rather than taking the nationally representative approach, takes a sample of convenience, in his case from Florida, smaller, a few hundred kids instead of 22,000 kids. But assesses these children in a variety of ways much more richly than would be done with a nationally representative study, and uses fancy statistical techniques called structural equation modeling to get better information out of these multiple measures.

So for example, if you're interested in a child's vocabulary skills, in the ECLS you would give one test, the Peabody, and you would trust this to be a measure of what the child knows. Sort of what Lonigan has done and I did in my former life, you might assess children with four or five different assessments of vocabulary knowledge. And the overlap between those different assessments presents your true measure of vocabulary knowledge, freed of whatever the unique error is and miscues that you get in any one test or assessment. When you do that you can get much more powerful predictive relationships.

So here are some data from Lonigan's work. Here again we're talking about resources at kindergarten entry, and we find much stronger relationships with the error and unreliability in measurement sucked out with these special statistical techniques and multiple measures. So you find correlations of .51 between letter knowledge and reading at the end of first grade, .60 between phonological sensitivity, .51 between environmental

print -- that is, being able to read exit signs -- and .40 between concepts of print -- knowing, for example, which way to turn the pages in a book. These are very powerful predictive relationships.

In my own work, which I'm not going to describe here except in passing, we found that measuring this sort of information when children are in the pre-K period allows us to predict with 85 percent accuracy whether children will be good or bad readers at the end of first grade. So the point here is that these inside-out skills are very powerful predictors of reading outcome. They become much more powerful as direct predictors than vocabulary is. Vocabulary becomes important, again, when children are in third, fourth, fifth grade, reading for comprehension, but the immediate and powerful predictors of children's ability to crack the reading code in first, second and third grade are things such as letter knowledge, phonological sensitivity, concepts of print.

So what have I described to you here? That inside-out skills, things like letter knowledge, phonological awareness are much more powerful predictors of reading success in grades one and two than outside skills such as language. It's not that these things are unimportant. It's not that conceptual ability and vocabulary is unimportant. It's just that there is a period in which knowing the names of the letters of the alphabet is the one thing you need to know to solve the task at hand, and that we can predict very powerfully reading outcomes based on careful and accurate measurement of these abilities in the preschool period.

We need to also think about what are the appropriate foci of efforts to improve children's skills at different points in the pre-school period. Four-year-olds are not like three-year-olds, and goodness knows they're not like one-year-olds. So this is, if you will, a sort of conceptual view, some of it with strong empirical backing, other parts of it just guesswork that indicates what you should be focusing on. So for infants and toddlers it would be emotional bonding around book interactions so children get the notion that it is fun and useful and entertaining to have printed material present, something worth doing. Exposure to the sound of parent's voice. Two- and three-year-olds focusing on vocabulary and concepts, book knowledge. And four- and five-year-olds focusing on these inside-out skills that are such critical and powerful predictors of later outcome.

What does this imply for policy? That pre-reading skills are clearly a very strong foundation for later reading success, that inside-out skills are the strongest predictors of later reading success. That there's a developmental progression in what children can learn and what they should be taught, depending on their age and stage in the pre-school period.

Thank you.

(Applause.)

MS. EDWARDS: We're going to take like just five minutes here and see if there are a couple of burning questions for Dr. Whitehurst either based on his presentation or his availability as Assistant Secretary.

Q: I have a question regarding how you predict later reading success at the end of first grade. And my question is, to what extent are these predictors correlations, and to what extent are they causal? And, insofar as they are causal, what causes them? I mean, I'm just thinking out a few possible reasons that this might be true, and I'm unclear about it. One is that your lack of preparation then feeds on itself, and you can never catch up. So an intervention would be, if I can catch you up at the end of first grade, you'll be okay. Another is, a window has closed, somehow your ability to learn easily has closed. That's a problem. Another is that you're probably in a bad school, and you're likely to stay there. Or another is that if you haven't learned by then, as you said, this is an indication that you probably have something neurological going on that's going to take something much more serious to get it. So what is it?

DR. WHITEHURST: Well, you know, it might be a combination of those things. The one I would say is not likely to be involved is the window of opportunity. There's very little evidence that there's a critical period for learning to read, and illiterate adults around the world can be taught to read without too much difficulty in that process. Interestingly, they're not phonemically aware typically. They develop phonemic awareness in the sense of performing well in phonemic awareness tests in the context of learning to read.

And part of that message is an optimistic one, and also I think has policy implications. Just because a child is in fourth grade and hasn't gotten it doesn't mean that there's any reason at all to give up. Children in fourth grade can learn to read. The problem, of course, is that we have a lock-step curriculum in schools, and so if you fall behind what the expectations are at a particular grade, you're falling further behind at the next grade, and there's really little opportunity to catch up. So I think it's more the instructional system that we're dealing here with than anything else.

The causal issues, I think, are complex. I think it would be fair to say that the predictive relationships I've described to you need now to be backed up with strong evidence that if you intervene in these areas, and do so successfully that that success will follow -- will generate academic success in school. We don't have that evidence as powerfully as we need it. But that's clearly going to depend on the school, and so that's a significant curve, if you will, or complexity in the research task ahead of us. One could certainly, as a thought experiment, imagine an extremely strong preschool curriculum that prepares children in these particular areas of cognitive development as well as in the emotional-social areas that are important for success as well. But the child transitions into a bad school with poor instruction, and chaos all around, and none of that amounts to anything, does that mean that the preschool intervention has failed? It would look as if it had failed empirically, but it would not have failed because what one needs to think about transition issues in the design. There's really not much sense in learning these readiness

skills if the school you end up in is not one that takes advantage of what you bring to the door.

I don't know if I covered each of your points, but I tried to.

MS. EDWARDS: I'll tell you what we're going to do. We're going to, at this one-hour to go mark, we're going to give David Dickinson next up, whose bio is also in the packets, so check it out. I will note that he was an elementary school teacher for five years.

MR. DICKINSON: All right. I have taken my task to be fairly broad ranging. I'm going to first talk a little bit about research. I realize there's some skepticism about the quality of educational research that's out there, so I'm going to put out just a few pointers towards what makes for high quality research. I'm going to very briefly refer to some well-done studies that are out, and I want to let you know that I have a handout in there because I'm going to be talking rather fast, and there are web sites that can take you to further information and some citations of the most recent peer reviews, journals, articles, describing some of these studies.

Then I figured since they asked me here, I'm going to talk a little bit about my own research, part of which is OERI funded. I thought we should talk a little bit about that. Of course, it's the highest caliber possible.

So I apologize for going a little faster than I would like to. I'm not going to take the time to tell the stories that Russ did, but I will be happy to tell stories at the end.

All right, to jump into high quality research, I'm going to sort of lump two broad types of research together. There are very important studies of development that have been purely descriptive, really looking at what children do over the course of time as they develop language, as they develop literacy skills, and also important correlational studies in which there's an effort to relate descriptions of development to a variety of other factors, environmental, biological, and what-not.

These are both very important kinds of work; they give us different kinds of information. And, of course, the correlational work is important because it suggests how things go together, what kind of factors relate to other factors.

Then, as towards the end of Russ' talk I think he was pointing to the value of experimental studies, where you really do something to try to cause a change and see what kind of effects that has. Frequently, this work builds on prior correlation of descriptive work, and you can test particular variables that you're interested in, and these have a lot of policy implications because you're manipulating something that's under your control by definition, and you're able then to control for all kinds of variables. So, it's powerful to be able to have some experimental studies.

Now, there are certain kinds of features of research that I think point toward high quality work across all these different types. It's quite valuable to have longitudinal studies where you can really model growth over time. Sometimes you find surprising findings where growth appears to have -- you don't have growth, and then you have spurts of growth. There's questions about what is the trajectory of different developmental domains. Especially when you do intervention research, you want to try to do long-term study of the persistence of effects. There, again, there's all kinds of questions, how long does it last for, and the kinds of questions you just raised, and if it doesn't last, why not? It doesn't mean necessarily the intervention didn't work, but then you need to look at other factors.

Randomly selected subjects, especially in the experimental designs are a positive factor. You can't always bring that about in research, but you do need to be aware of the factors that subjects bring with them into your studies. Also, in the last 10 years or so, there have been lots of developments in statistical approaches to looking at data, and they are to deal with a variety of kinds of challenges that you present. And so, if you're looking at studies, you might want to have some guidance as to whether they really have the high-powered sort of statistics needed to deal with various kinds of methodological problems.

Another feature of really rich research is that you get as much detail as possible across multiple contexts. We know, of course, that development has many factors that go into it. So some studies are going to provide rich details about classrooms, some about homes, some about communities and then you can look at multiple dimensions of development just as Russ was talking about in Chris Lonigan's work, he looks carefully at a variety of aspects of our early development.

And then, finally, tradeoffs are inevitable; especially there are always limitations in funding. You have to give up some things in order to get other things. So every study is not going to have all these features, but these are some of the things that I think mark research as something to pay attention to.

Now, I'm going to go through and just briefly give you a taste of a few correlational studies. I have to mention sort of two that have been very long-standing, you may well have heard of the High Scope Preschool Study and Adasarian (sp) Project. These are two projects that have looked over a period of 20-30 years at the long-term effects of high quality preschool experiences, finding an impact on children's progress during school, and then effects that persist into adolescence and early adult lives.

A very important study is NICHD Child Care Study that has really followed a large group of randomly selected children and in remarkable detail studied their experiences in classrooms and homes to look at the impact of childcare experiences on children. That study has found that the amount of high quality childcare experience that children receive really has important effects on cognitive and language growth.

And an interesting recent article reflects some changing statistical approaches. They've wanted to determine the effect of these developments, not just that they're statistically significant -- like Russ said, if you have a big enough sample, anything almost is statistically significant -- well, they have found that the effect of high quality childcare is roughly equivalent to what researchers have found being the impact of parenting on development of these domains, or poverty on children. So this is really putting the quality of high quality childcare right up there with other things that everyone would acknowledge have an important impact on children's development. It's an important study. They have a Website that tells a lot more about what they're finding.

Cost Quality Outcome Study is another important longitudinal study that's following children from the later preschool years up into second grade, and this one is, again, looking at children's experiences in their classrooms, and they find that higher quality preschools really have an effect on language and literacy. These are evident particularly at the end of kindergarten and some effects lingering to second grade.

Finally, Russ mentioned Faces, I won't go into detail. It's really a remarkable study, 5,000 children that they're really trying to get an objective view of what's happening for children in Head Start. Unfortunately, what they're finding is there is some limited growth in vocabulary and writing, but no growth in areas related to the inside out schools, recognition, book knowledge, and math.

Now, the work that I particularly like because it's my own is work I started with Catherine Snow in the late 1980s. We were interested in the question, what kinds of experiences make a difference for low-income children to support long-term development of reading comprehension, because obviously that's what you're really after, decoding only gets you so far.

So we looked very carefully at the preschool interactions of children. I was responsible for classroom data where we audiotaped teachers and children throughout the classroom days, transcribed them, and analyzed them. We also have the similar data from the homes. And we began assessing children at the end of kindergarten.

I'm just going to show you two results from this. It's reported in a book that's written with an aim for practitioners to appreciate it, but there are a lot of data in appendices for researchers. When we look at the relationship between the preschool descriptions of the children's language experience and their end of kindergarten scores, first of all, the control variables are the parents' background, income, education, basic demographics, it accounts for about 18 percent of variability in vocabulary.

Now, the powerful one that really excited me was, you look at the preschool teachers' conversation across the day, this draws from a number of things, including how they discuss books with children, how they talk during mealtimes with them, the extent to which -- how they engage children in conversations during preschool. When you put those descriptions of classroom interactions together with the home background, we

account for 41 percent of the variance in a regression analysis for their end of kindergarten vocabulary.

We look at the curriculum, which in these cases was rarely strong, but to the extent that there was curriculum, that accounted for variability, and the variety of vocabulary used by teachers, which, again, was distressingly limited, but those teachers who used varied vocabulary made a difference.

We put it all together and we account for half of the variability in children's receptive vocabulary a year after we did these observations.

Now, why this is important, to pick up on what Russ was talking about, here we have just simple first order correlations between what children were at the end of kindergarten and the end of seventh grade. We're interested in reading comprehension. Here you see a correlation. Children's standing and receptive vocabulary at the end of kindergarten correlates .69 in our data with reading comprehension at the end of grade seven. Their decoding scores, and interestingly their early print knowledge correlates roughly the same levels, so there's no question that where children are at the end of kindergarten is very strongly related to where they're going to be later on.

So some major descriptive results out of these studies. One of the findings is that classroom qualities vary; the caliber of support varies a lot. Something I haven't touched on but is eminently clear from lots of research, the quality of care that children receive in basic community childcare, especially if they're low-income, is distressingly poor. Those are the kinds of programs that the NICHD Study is looking at, and that's part of where they see the powerful effects.

Head Start, in general Head Start does pretty well at what they've always thought they were supposed to do well at, which is provide supportive, safe, well-provisioned environments that are pleasant for children. They're weak at doing what they haven't been really so clearly focused on, which is supporting language literacy and cognitive development, teachers and other staff, limited general education, there are all kinds of efforts to raise education levels, of particular weakness is any understanding of development of language or literacy.

Now, moving on to some experimental studies. Russ didn't feel he could talk about his own work, but it needs to be mentioned. His work on dialogic reading, Russ and his students at Stony Brook have developed a technique and assessed the impact of engaging young children, preschool children in discussions about books where they're actively engaged in producing the text together. And what they've found is when you have parents using this, when you have teachers using it, best of all when you have them both using it, it makes a difference for children's growth in language, particularly that can be seen at least a year or two after they experience this. He also has found that there's some difficulty sustaining it. I think this is one of the challenges that runs through all of these studies.

The other set of work I would really associate with Susan Newman, and her colleague Ross Goss, and others, Leslie Morrow, where they've looked at the changing environment in classrooms and tried to improve the literacy activities of children, and they find that if you do things like changing how space is used, availability of books, print and so forth, then you get more engagement with print among children. And if you train teachers or volunteers to engage children, it's even better. So it's not just stuff, its trained staff working with materials that are organized intentionally.

Again, these have been interventions that are experimenter provided. We don't know what happens, if teachers can do this, and when teachers are encouraged to bring these about themselves.

So there's some systemic challenges that we face. First of all, generally support for language and literacy in preschool environments is weak, and there are a variety of reasons why. I would start with the teachers are very poorly paid, and they often have all kinds of stresses in their own homes. We're doing intervention research with teachers where I can't tell you the number of times people have had to drop because they're carrying and supporting their sick children, sick mothers, someone has had an accident, their lives are just so stressed they cannot engage in a sustained way in professional development, which is tied to that there's a high staff turnover. Teachers go to Wal-Mart and they make more than they do in the preschool classroom. If you have 15 percent turnover in programs, it's not uncommon.

I would say staff development also. While there has been a lot of money spent on staff development, in general, it assumes a limited engagement of the teachers intellectually, in terms of effort, and there's really almost no accountability tied to what happens in most cases. Within that broader world, early childhood world in general has a tradition of distrust of literacy and teaching in general. And related to that are the early childhood systems. I've recently written an article where I looked at the accreditation system; the standards that are set for literacy in the NEYC Accreditation are just abysmal. The research tools are limited in what they look at.

And I was just talking with people in the State of Ohio yesterday where their NEYC -- where their early childhood programs are based on the NEYC Accreditation Standards, and so you have the community college system that's replicating these problems. So we have systems upon systems that account for where we are right now.

So what can we do about this? In the mid-'90s, I was quite aware of what we're finding with our longitudinal descriptive studies, and began to develop a course. It's sort of a long line of work, but I decided that an academic course is what we needed to make a difference with preschool teachers. It's a four-credit course that has been -- there are assignments based right in the classrooms, and teachers are introduced to the basic theory, understanding of what literacy is and language is. It's been offered throughout the New England Region through the Head Start Training and Technical Assistance Network, by their specialists, and it's offered to teams of teachers and supervisors. They must take the class together.

So what are we looking at that? We're trying to find if you provide teachers a general understanding, they're given some guidance on strategies, but it's not focused on individual strategies because my observational studies, the home school study, I think to be effective teachers need to be effective all day long. Waiting in lines, going to the bathroom, it can't be just located in a single setting.

So can we change environments? Can we change children? The research design, we have comparison groups, teachers in the intervention, teachers who have been identified directors as those who would like to attend the intervention if it were possible, it's not randomly assigned, but we've done what we can to compare them. We evaluate classroom practices before and after the course. We look at children before and after the course. Importantly, when I show you the data, remember that children are in the classrooms of teacher who are learning these things as they go. They start the class in early November, they end at the end of March, the children are getting whatever the teachers are learning along the way. We control for home and teacher demographic characteristics -- we get as much as we can about those.

So I'm going to very quickly show you some of the results. We go and observe the classrooms using a variety of tools; one of them is a tool that we've developed that looks at the general literacy environment and support for language. There's a number of subscales. One subscale looks at the extent to which teachers actively support language development, and when we interview them briefly at the end, they articulate some notions about how they approach language. On this tool, a 1 is really very poor quality, a 3 is what we call basic, it's what you sort of expect to see in ho-hum, not great classrooms, and 5 is what you would really like.

Across the course of a year in the comparison classrooms we see hovering below a 3, no changes; in our intervention, we see children are improving. We notice they start slightly higher, that will be something you see throughout, which means we don't have a perfectly matched comparison group design.

When we look at book-related use, this is books around the classroom, how teacher provide books for children, we see over the course of the year comparison groups show slight improvement, the teachers in the LEAP classrooms show stronger improvement. Interestingly, we look at approaches to book learning, this is how they read books, how they talk about books, are books linked to the curriculum they get worse over the course of the year, they run out of gas. I think that sometimes people start in one place, they move down. Teachers in the intervention are showing improvements.

We also look at children's writing, which is a wonderful way to support children's attention to how to form letters, the identity of letters, phonemic awareness. We see no change in the comparison group. We see that the teachers who are in our course make changes.

Each of these are topics that are addressed, they read the basic understanding, they're given some assignments about it, but we don't give them any specific directions to do things in particular. We give them guidance, and they adopt them in their own classrooms. Home support for literacy, do the teachers have ways to help parents know what they should do, do they send materials home, is there a real focus on what parents can do at home? We see a minimal change in the comparison group, a stronger change in the teachers in the course.

Now, when we put all of these together, there's a scale that all of these things I've been talking about get lumped together, and we see the comparison group makes no change over the course of the year on average, whereas on average the LEAP classrooms make considerable change.

Now, to put these things together to look at the overall effects, we look to see what percentage of teachers are above average. This is my Lake Wobegon effect here. We see that 79 percent of the LEAP teachers are above average.

Now, the real test is how important are these changes, what are the effect sizes? So we've done regression analysis in which we control for all the things we can control for, the teacher's years of experience, their educational background, and the score they got in the fall. So this would take into account the fact that some of these teachers started higher. What I showed you -- these are called F-squared, a large effect using the statistic is .30, we got an effect size of .43, which is considerably better than large.

Another tool that we looked at is a checklist kind of thing, we look at the kind of things that Susan Newman and others have said should happen in classrooms, we look at the book area, what's around the books, we see the comparison group teachers don't make changes, the LEAP do. The same kind of thing, are there things to write with, is there encouragement for writing around the classroom. Once again, we see considerably stronger growth among the teachers in the LEAP. Then when we put these together into total scores we see the comparison group showing essentially no change and those in the LEAP classroom considerable change. The Lake Wobegon effect, again, is here, and this time we have an effect size of .65. Clearly teachers are making major differences in the classrooms.

Now, of course, what we all want to know about, how about the children. So we have the PPBT scores, and what we see here is the kind of scores that we've found, and always find essentially with low-income children, around .85-86. In the LEAP classrooms we do see a significant growth. This is a small effect, I'd like to see a larger one, but I'm pleased that we do see an effect while teachers are just figuring out what to do. Phonological sensitivity, it's a simple measure of where children are in acquiring this sensitivity. Again, we see a small effect. Here, again, we're controlling for children's background, home language, their age, and their score that they received in the fall, and then see what difference the intervention makes. This is score of attention to print, and we see, again, a small effect.

So what are the challenges, and where are we headed? I think we really have to figure out how to have large effects on children's language and literacy skills. I'm curious to see what we can have if we go back and look at these teachers a year or so later, as they maybe have gotten better. We have not found out yet how to have the size of effects that we need to have. We need to figure out how to develop educated strong program leaders. We don't have that. And we need to create and sustain effective practices, how to really have these things set up and go on for a long period of time.

So we're trying to address this in different ways. One is, we're now offering this course using interactive video conferencing, supported by a Web site. We're trying to begin to get out there in ways to reach populations that don't have easy access to universities. Right now I'm working with the entire Head Start program in the Boston area, through in service training. I'm very excited by the extent to which the entire program has embraced us. If anybody wants to come to a celebration on June 8th talk to me. And we're starting to work with Community Institution of Higher Education around Connecticut, and hopefully if we get more funding, beyond, because I think we need to build the infrastructure.

So conclusions, quality of preschool classrooms affects children's language and early literacy development. Interventions do have the potential to result in improved practices, and better growth among children, but we really don't know what we need to know about how to establish and sustain high quality practices, and how to bring about what we need, are really large changes that are significant and lasting in children's growth.

Thanks.

(Applause.)

MS. EDWARDS: Question?

Q: First of all, I really like the research you presented. I was curious as to whether there was any kind of relationship between the motivation of the teachers who participated in the program and their quality anyway. So in other words, you know, the self-selection issue, even though you controlled for it. I was just curious about that. And then the second one, tagging along to that, you mentioned NEYC, and I was very happy that you did mention it. It is a fact, you know, in Head Start, and in early childhood education, they are basically controlling what is taught. How do you deal with it?

MR. DICKINSON: First of all, I think that when you do research like this the ideal would be to have lots of people who want to take the class, and then select those who want to take it randomly. I think you do need teachers who are motivated. This is not the kind of thing that you can hold a gun up to somebody's head and say, do it. Maybe they'll do it for a temporary time. Now, you saw, we do have differences between the comparison and the intervention group. Part of it might well be that factor, I

can't say for sure. We've done what we can to control for it. But certainly, motivation is an issue.

I just want to make just a quick comment about NEYC, because I don't want to come out as bashing it. I'm actually -- in the article that's one of the things I mention in my handout; they have actually a very strong position statement on what effective practices look like. It's one of these curious situations. They have a very forward-looking statement on what early literacy practices should look like. Their accreditation standards haven't caught up. So the system is just sort of lurching along, and one piece of it is ahead of the rest of it. And they're hopefully making changes, but meanwhile there are a lot of programs that are being affected by this.

MS. EDWARDS: Right there.

Q: -- The turnover issue, and wondering whether you were going to be going back and seeing whether these teachers who did have a higher quality or better results, whether they're still there in a year, given what the turnover is like in childcare. And the other question was about whether there was any correlation between those LEAP teachers, and wages that they made versus the comparison group, since we know that wages are an indicator, as well, in terms of the quality.

MR. DICKINSON: The first question, we do have a qualitative longitudinal study underway right now. We're following teachers and supervisors two years out. And we found that actually changes in supervisory practices, which I have glossed over here, are clearly continuing, there's changes there. And there are some changes that still continue to be evident in the classroom teachers. I can't say we have a large enough sample to know how long they last.

Q: Are the teachers still there?

MR. DICKINSON: Yes, we followed those teachers. The ones that we followed are still there. It was as small study, fortunately, we have not had much attrition. But there is significant attrition, 15 percent of so, which is why I think we need to work with entire programs, so that it's not teacher specific, but the whole program. That's what I'm working on right now, the whole program adopts an approach to literacy, so that if you're new in there, you get indoctrinated, or whatever, sort of get incorporated into that way of looking at it.

The wages, the teachers who were and were not in the program, the course, came from similar kinds of center backgrounds. So I don't think that the wages would be a major factor in making a difference there.

Q: David, do you have any advice for us, apart from sending a little more money to EDC, for how to get at the sustainability issue? The kinds of things that, if we could learn about them would allow us to have a larger effect, if you will, on practice?

MR. DICKINSON: That's such a big question I don't know quite where to begin. I have a belief that what's needed is for so many levels of change. I think that the quality of training that teachers receive needs to be looked at, and it needs to be ensured that there's linkage to practice, so that teachers are both taught why, and some notions about what. And somehow they need to be tied in with accountability efforts. Hopefully as there are new standards for accreditation, new ways of looking at quality in programs, everyone will have a better way to see where they stand relative to where they ought to be. I think that's part of the thing. People don't have the benchmarks and the vision of what high quality looks like quite yet.

MS. EDWARDS: This one here, question?

Q: -- I've seen often cited as having strong evidence of effectiveness, one on one tutoring by teachers for children that are falling behind in reading, and also class-wide peer tutoring. I was wondering if you could comment on the evidence behind that, or whether you think those are effective interventions.

MR. DICKINSON: Well, that kind of work focuses mostly on first and second grade, and beginning reading. And there certainly is evidence that you have work with individual children in small groups makes a significant difference. There have been a variety of interventions that have been done that way. Interestingly, recently Frank Valentino has done a really remarkable study where he's looked carefully at kindergarten instruction, and he's put together a careful look at instruction and interventions with children. And it's his feeling that many of the children who get diagnosed as having reading disabilities actually are instructionally disadvantaged, meaning that they don't get the instruction they need in kindergarten, and there are ways we could go about significantly reducing the number of children who get small group instruction, or one on one tutoring, if we did a better job early on and picked children out. So there's no question, some kids really have serious problems. But, we don't have to have as many as we do.

MS. EDWARDS: Great.

Q: This may go beyond the scope of this a bit, and I'm asking it to both you and Russ Whitehurst. Given what you've just said in, in fact, both presentations, where do you put as a policy question assessment of these kids in the scheme of things? I mean, clearly if you had whole scale, universal, or pretty widespread assessments going on it would drive the creation of successful courses like yours, it would drive a whole lot of things. And I'm just wondering as a public policy question where that fits?

MR. DICKINSON: As a public servant would you like to answer that one?

DR. WHITEHURST: As a public servant I would not like to. As a researcher I would say that it certainly is possible to design assessments for four year olds that produce reliable information that can be utilized by teachers, to do it in context of the classroom. And further that it's clearly possible from the work we've been describing,

that it's predictive to give standardized tests to four year olds that are predictive of later outcomes. I think we need to keep screening in the mix, as well. One of the things I think would be quite useful, both at the beginning of the pre-K year, as well as the beginning of the kindergarten year is a widely available, inexpensive, and easily interpretable screening test for where children are on these abilities, so you don't have to wait until the end of the kindergarten year to find out that children are quite a ways behind.

Of course, assessment at the pre-K period is very controversial. And people, I think well-intentioned people, and they may be right, do not want something that looks like high stakes assessment driven down to pre-K. But, I think the question is always high stakes for whom? Really, we do not want high stakes assessment for kids at the four-year-old level, but might we wish to consider high stakes assessments for the systems who serve those kids? There I think we might, speaking again as a researcher.

MR. DICKINSON: I'd like to answer. I'm actually involved right now in an intervention with a community sort of where you live, Valley Stream, Long Island. The superintendent of curriculum called me, because she wanted to adopt a classroom observation tool that we've developed, the one that was behind these data. And she's using it now as a school improvement effort with all of the kindergarten teachers. And her idea is to engage in a self-analysis, where the speech and language pathologists administer this, and then look at it with kindergarten teachers as a part of an improvement effort. And this is where I think unions could be involved, or could be difficult, because there is observation that's happening. In this case the teachers seem to have embraced it, and it's engaging them in a powerful self-analysis, where they're having some really eye opening experiences.

They're also assessing a few individual children, not the entire class. And the point of the assessment there is for them to become more tuned in to what's happening with the low achieving children, so they can get serious about them. So I think assessment almost always means children, but I think we need to have ways for teachers to have opportunities to look at themselves, or to be looked at through objective lenses, as long as these are used in a way that the teachers can feel some control over it, and it's not going to be used in ways that are detrimental to them.

MS. EDWARDS: All right. Last question. I mean, before Susan speaks.

Q: Just a question, or a factor to consider. In the Latino community we use untraditional means as our main source of childcare. That means we have a grandparent, family member, someone in our family takes care of our younger children. So is that going to become a factor in the research that you're working on currently with early children and literacy?

MR. DICKINSON: Well, we're really focusing on whatever children -- whatever families they come from. My focus has been on the classrooms with the encouragement

of the teachers to work more effectively with families. I'm not sure if I'm answering your question.

Q: So my question may be relevant, I wanted to ask both of the presenters whether or not you think we are aggressively pursuing interventions on the parent side of the paradigm as we are on the classroom side, because all of us in this room know what middle class parents do for their children. So I would like all of the presenters' -- is that going to be included in your presentation?

MS. LANDRY: Yes, I was going to talk about that parent interventions, as well as teacher, but I think this will give you some sense of some of the things that can be done, and are being done in some parts of the country.

MS. EDWARDS: Okay. Susan Landry is a developmental psychologist and professor in the Department of Pediatrics at the University of Texas, in Houston. And I just want to say that she's also the director of the Center for Improving the Readiness of Children for Learning and Education, CIRCLE. It's the best acronym I've seen in a long time.

MS. LANDRY: We started with the acronym.

MS. EDWARDS: Did you?

MS. LANDRY: Okay. I'm going to start, because we're running out of time. Is this on? Can you hear me? Great.

Okay. I'm going to move through some slides, because we've really heard quite a bit about what areas need to be focused on in these early childhood programs, and particularly the language and literacy areas. What I'd like to talk for a few minutes about is how do we best present this to children in these settings, both in parent-child interactive home environments, as well as center based and school environments. I think there's quite a bit of anxiety, controversy about how we're going to help our children learn these new skills, will it become too structured, too rote? Can we keep the spirit of the child, the motivation and the joy of learning intact in our attempt to do this?

And so our research has focused quite a bit on what are the interaction styles and the components of that style that are critically important for promoting the development of cognitive language, early literacy skills. Interestingly enough, this same group of behaviors also is strongly predictive of social emotional skills. So we don't have to keep thinking that we can have one without the other. If we do it with a very thoughtful approach we can promote the whole child's development across a broad range of developmental areas.

You've heard quite a bit already, so I won't expand on it too much, but the word scaffolding, that comes through in some of our well researched theories of cognitive development emphasizes how important that interaction between the adult, whether it's a

teacher, a grandparent, a parent, and the child is, and how that adult needs to be providing specialized support. By that we mean support that's well matched to the child's developmental needs. So the young child, for instance, has immature attentional skills, immature language skills, and cognitive listening skills and the complexity of working together with an adult in a learning interaction, which could be around a puzzle, a book. I'm not talking about a highly structured instructional interaction, but something that's appropriate for a young child, requires that child in order to learn most effectively to be supported in terms of their attention and cognitive and language, with the adult saying things in a certain way so the child can understand and respond, or holding something constant, so the child has time to work through the interaction or activity with the adult.

And so what does that style look like? What are the key components in that style of interaction that all adults interacting with children need to think about and learn to do in consistent ways? In our research, which is a large longitudinal study, which I'll give you just a tiny bit of information about in a minute, we have found six key essential areas, or behaviors that the adults need to be incorporating into their interactions with young children. Rich language input that you've heard so much about is a very broad range of things that can include, but is not limited to labeling things, giving more information in their interactions.

For instance, in many homes that we're in, in this longitudinal study, children hear what we call empty language, bring it here, put it there, what's that? There's not rich information in that type of interaction pattern. The child is not hearing the names of objects or actions. They're not hearing about explanations. Even something as simple as roll the ball to me tells a very young child learning language that balls roll, rather than bring that over here to me. See the difference in what the child's able to get in terms of information for their own language development.

And all of that language input, reading books, talking about books together on a variety of topics, playing together with objects and talking about what they do and how they work, it is inputted more effectively for children, it becomes a memory, a concept for them, if it's done with a high degree of responsiveness to their interest and signals, promptly. So the child gets a message, I signal an interest or a need, you respond. That makes me want to do it again, and again. And so I'm reinforced, so to speak, to get involved in actively initiating things with you, my parent, teacher or grandparent. And a cycle starts, a good cycle, maintaining on children's interest rather than redirecting them.

Decreasing restrictiveness, even simple things like, shh, not yet, that has at very high levels a negative impact on children's development. So children need to be allowed to be right, to be okay for signaling needs and requests. Not that we can always drop everything and respond, but they need to know it's going to be responded to. Being allowed to make choices about what they're interested in, and how long they want to stay interested in it. And then of course, we need to always be monitoring children's actions and behavior.

And we've also looked at whether there's a critical period, is early childhood particularly important time for this group of behaviors, not for input in general but for this --

[TAPE CHANGE.]

MS. LANDRY: And we've looked at this with 360 families, followed across now 8 years going into 10 years of life, where we are in the homes, much like the Hart and Risley study, but not as frequently each time we go. It's about, on average, one to two times a year, but much longer out into time, because our children are turning ten. We started when they were six months of age. And what we're trying to determine is whether if children get that group of behaviors in their interactions will they be more likely to show optimal development, and is that input across infancy and the preschool period versus later, six or eight years of age, most important?

And very briefly, with our large number of families, we found natural subgroups. And the baby on the left is the infancy-early toddler period, 6, 12, 24 months of age, the later crazy haired child is the preschool ages, where we went in at about three and four and a half years. And we find what -- and this is a low income, a majority of the families are poverty, and I think what's important about this data is within low income we have a range of interaction styles. And some families do this quite nicely. And we had a fourth of this sample that did it quite nicely, and they did it across infancy and early childhood.

Then we had two groups that were inconsistent. Group two was equally responsive and supportive across infancy, but because of a number of factors, like social support, attitudes about discipline, et cetera, they dropped off, once the child became more independent. We had a group that was low in infancy, got a little better, and a group that was unfortunately low consistently. And the children of these mostly mothers, some grandmothers, were measured in terms of cognitive and language skills, and we developed a composite score from these tests across this range.

And what you see here is from six months of age up through just beginning kindergarten, that group, called the high-high, that are yellow dots, are the groups of mothers -- this is their children's cognitive language skills mapped out across this time period. The two inconsistent groups were not different from each other, even that high early that dropped off dramatically, that was not enough of a buffer to allow those children to do all right across this period of time. So they are lower and they're also tapering off. And the low low, of course, is the lowest. And when we now have followed this out through eight years, we see the same pattern, and we put six year parenting, and eight year parenting in the model, those same parent behaviors, and it's this early clustering, these four subgroups of early parenting that are the predictive ones of this long term outcome through eight.

Now, your question about how do we and can we help parents in effective ways? Briefly, we have an NIH funded study where we randomly assigned parents, starting in infancy, when their babies are infants, to either get a coaching program that can be home based, in our case it was, we were trying it out in centers, small group based programs. The mothers see a set of videotapes that show them other mothers doing each of those behaviors in the six key essentials, and then they try it, they're videotaped, and they then watch themselves and critique what they like that they do, and what they decide they'd better stop doing, because their children aren't responding. They are their own teacher, with their coach facilitating that.

We're getting some very dramatic results in mother's change in behavior. The green being a change score in about a 12-week program. You'll notice that labeling changes dramatically, that richer language input. Compared to a group that also got home visits, their children got developmental screenings every time for the same amount and number of visits, but they didn't get coaching, or information about how to parent. And these are the results for them in red. You can see restrictiveness, in fact, starts to go up, which is pretty typical, as children become more challenging into these preschool years.

So in our model of professional development we have taken for teachers those six key essential interactive behaviors, and put them in an integrated way with all the different school readiness things that you've heard from our previous talks, research based activities, to promote these literacy and language domains, but in the context of interactions that are supportive. The teacher now is the person that needs to provide this high degree of scaffolding for these young children's development. And our thought is, much like David's that we have to be providing high quality professional development for our early childhood teachers that has a lot of hands on, in classroom focus. The why, but also a lot of emphasis on the how, and how to do this in developmentally appropriate, I know that's just a no, no, no term, but I personally think developmentally appropriate is very important, and that it's sequenced in meaningful ways for the child's development across the year.

That's the only way, I think, we're going to accomplish the challenge that President and Ms. Bush have put before us for early childhood language and literacy being infused into these programs in high quality ways, and ways that promote social and emotional development, reasoning, creativity, et cetera. So this, again, is the training model, the essential behaviors integrated with language enrichment, print awareness, reading activities, phonological awareness, and letter knowledge activities, as well as writing, and in our program some attention to math.

The key element of this program, small, focused groups, small groups with focused training that starts intensively, initially, with four to five days workshops. It expands in the year with in-classroom coaching on a regular basis; typically it's weekly or biweekly that the coaches are being trained and the teachers are receiving some follow up workshops across the year. That we work with administrators in face to face ways to

get support and buy in, and that site visits occur, so we can see what their unique challenges are.

And I'm going to skip ahead a little bit. These slides emphasize the hands on approach, that they're learning and role modeling, planning together in small groups, doing that for each other, how to model language, get children to think with language, build vocabulary to do it in times when they can sit with the children at lunch, on the rug, during reading time, making circle a time for learning, not just social sharing, not that that's not important.

Okay. I'm moving ahead. I don't think we have time for a film that I brought, so I'm going to skip that. But it shows you children having the best time doing this, and with teachers that have just gone through this program and learned how to do it. And we're working with childcare programs, we're working with parents, and we're seeing that across a broad range of ages, across a broad range of settings, this can be effective.

Let me move ahead, how do we also get our teachers to keep asking, in the context of putting this into their classrooms, how do we know our children are learning the things we're trying to help them learn? This can occur in a large range of activities that should be ongoing, that teachers should be able to do. What's often been done in the past are portfolios, observational techniques, but dynamic assessments, screenings, short focused assessments of vocabulary knowledge, or the ability to rhyme and understand rhyming, moving onto understanding the beginning sounds of words, what letters children are incorporating into their memory, these can be done by teachers with small groups of children, or individual children to help them drive their instruction.

And we can also use standardized testing to look at not so much driving the children with testing, but making our programs accountable. Are we putting a curriculum in place that works? And so in our case in our case we looked at this professional development model. We did it with pre and post assessments of children. This was done first in a pilot program, then a moderate scale, and then we scaled it up across Texas. And I want to emphasize that the tests were all standardized, they covered language and literacy areas, and I want to show you some results. This is based on teachers that got the program that I just described versus teachers that did not get these.

This first set of slides, two slides, are the pilot classrooms. The target classroom you can see in pink, made much more gain in the children's expressive language skills. The children entered totally comparable in background characteristics, the neighborhood they came from, and their language skills were equally deficient and about seven months behind when they started the four-year-old program. Between pre and post testing in a school year you only get about eight months, max. So you're only looking at what can happen in about seven and a half to possibly eight months for some children. We in the target group saw children make changes in their skills as much as 14 months, in a seven and a half to eight month time. That allows them to make that extra gain to close that gap. The control classroom, however, made about seven. And so they started behind,

they stayed behind, and they entered kindergarten behind. And we saw equally dramatic changes in the literacy.

And believe it or not, in the taxi on the way here this morning, I got my research group to get me; we finally got it out of the school district, the Stanford Achievement Scores for this group of children at the end of kindergarten. So here it is. And reading scores, which we were interested in, show significant differences. And we don't have 22,000 children in this pilot; we just have a very small number. And the percentile for the target classroom is 54.1 percent, compared to the controls, which is 44 percent, with an effect size of .54. So we're seeing in this very first attempt with a group of teachers that are learning while the children are in their classroom, that we can see strong affects that last at least now through kindergarten.

And I'm going to go now to the large-scale project, because I'm running out of time. We scaled this up for Head Start programs across Texas that received special grant monies from public funds in the State of Texas. And there were approximately 500 or so teachers in the first year, in the second year there were close to 800. In the first year, and that's the results I have available, and we'll soon have the second year, we see changes that are above and beyond the control classroom changes, strong to moderate for 65 percent of these programs, which represents over 12,000 children that were in these programs, 35 percent of the classrooms, or seven large programs, did not show changes above and beyond the controls. We hope the second year -- and one thing we've learned is, you need more than one year to get this to happen.

We see for the strong groups, changes that about two-thirds, are close to or almost a standard deviation -- half a standard deviation or more, all changes are at least a quarter of the standard deviation in that eight-month period. Three and then three more, moderate change and this is across, you can see, these seven programs are showing changes on a number of different tests, tests of phonological awareness, tests of vocabulary, letter knowledge, complex language, print concepts. Vocabulary was two separate tests, looking at receptive and expressive.

And so I just want to very quickly say we also had our teachers rate change in social-emotional skills, and we find across this broad range of social-emotional areas that the teaches felt in spite of putting language and literacy in their classrooms, all of these areas changed dramatically in the positive direction. A very small proportion, less than 10 percent, did not feel there were dramatic changes in some of these, and little to no reports showed decreases in these skills.

I just want to put this teacher comment out. We got hundreds of handwritten comments on these surveys. It's an indescribable feeling to see children who had low self-esteem become confident individuals from this language and literacy program. And so what predicted this? What didn't predict it was whether the program was free-standing or part of a public school, urban, rural, small large, or the child's home language. What does seem to predict it is the rigor with which they implement it, the consistency of the mentoring, and the ability of those mentors to learn content, and how

to support teachers to do this. Having a specific language and literacy curriculum that was research based was strongly predictive of success, teacher education was, although within those strong and moderate change programs there are free-standing Head Start programs with teachers that do not have college degrees and slightly a year or two beyond high school. Administrative support, again, was critical.

And so in addition to coaching, and administrative support, we are learning this has to be intensive professional development, it has to be hands on, how tos, and follow through in the classroom to help teachers put this in place.

Thank you very much. I think you've heard the conclusion.

(Applause.)

MS. EDWARDS: Beth Ann, you have an announcement you'd like to make?

MS. BETH ANN RYAN: -- and outside when you leave, there is the Good Start Grow Smart document, that's actually the policy document that the president unveiled in Philadelphia a couple of weeks ago. Along with that we're trying to get some practical advice out. This is the newest piece, called Teaching Our Youngest, which childcare workers, Head Start teachers, pre-K teachers can use, just practical ideas. This is actually yours; this is the Seven Super Things Parents and Care Givers Can Do. The press people have gotten hold of it and jazzed it up a little bit, but this is actually Susan's seven things. And then this one was just unveiled in Little Rock, on the day before yesterday by Mrs. Bush, and it's the beginning of a whole series of booklets for parents. This is the newborn version, and we'll have one for each month for the first year of life, and then we'll start moving onwards from there. I might add that Susan and Craig Ramie are the two primary editors on this.

But I just thought since you all are interested in early childhood, you might like to see some of the pieces the administration has put out over the last, really, month, basically. So it's out there when you leave.

MS. EDWARDS: Thank you. We are right at 2:00, and I can stay. I don't know about the availability of the panelists. And I'm just acknowledging what's evident. So if people want to keep going, that's cool, and if not, we'll understand.

MS. LANDRY: I can stay.

DR. WHITEHURST: I cannot stay.

MS. EDWARDS: Okay. Buzz.

Q: A quick question, Susan, have you considered any materials that would be directed to illiterate parents?

MS. LANDRY: We have not. In our parent program, parents do not need to read, except ideally, of course, to read to their children, I mean, that's critical. We have not linked with an adult literacy program. But one way we're helping parents learn new interactive skills and how to talk more to children is through videotape techniques.

MS. EDWARDS: Yes?

Q: [Inaudible.]

MS. LANDRY: One thing I'd like to just mention that we have tried, because we're trying to tackle that challenging area in a very small scale way, is we have a community-based program in Houston in a poverty area, and we have recruited senior citizen women, community members, who are volunteers with a stipend, a small volunteer stipend, to learn these techniques, and to the point that they can support parents in their own community. And we have a strong linkage with small family-run childcare programs in the area. And so we're in the childcare programs with the mentors, working with the staff there, the mentors are working with families, both in their homes as well as in the multi-service center in the community. And we recently -- but we're testing this out. We found that the results of this with the neighborhood mentors are as strong as the results in our much more tightly controlled NIH-funded study with parents.

So I think this can work, we're just going to have to be very creative, and put things in place in communities that can work given the special needs and challenges in those communities.

MR. DICKINSON: We're just in the process of developing that as a proposal, but we're looking into the possibility of putting some requirements on, if we work with community colleges that offer courses to childcare workers that a certain number of slots be set aside for community childcare at reduced tuition or free tuition.

Obviously, one of the problems is, that those systems don't have funding to provide the support for professional development, whereas Head Start does have quality improvement funds, which are often used for this purpose. So there may be some ways of trying to piggyback, because Head Start is now charged with really trying to build relationships with community childcare, and there might be some ways to make the most of those kinds of collaborations so that the coming together of those communities can be supported. But it's a huge issue.

Q: Susan, I thought that was a fascinating talk, as well as from all the speakers today, but one of the things I thought was most interesting was sort of incidental to your research, but it was the high-high and the inconsistent and the low-low, and I was wondering if there were some characteristics which defined impoverished families, was it situational poverty as opposed to generational poverty? Were you able to distinguish between why a poor family would be a high?

MS. LANDRY: Yes, there were a number of predictors. One thing, when you mention generational, we take measures of mother's own attachment, history, her own child-rearing history, her perception of that, and that is a significant predictor of how mothers parent, and the extent to which that's nurturing and supportive of children's development. If she perceives she was not attended to in a nurturing way, her needs were ignored, et cetera, she is more likely to parent in the low-low or inconsistent groups than the high high.

Social support, which I think was a very strong predictor, and I thought it was encouraging to see that because that is something we could do something about. And that's why we have used this model in our community in Houston of neighborhood mentors becoming social support for these young mothers and fathers.

So social supporting meaning having people around them that they feel they're close to, and they would say are close to them, and that then promote them to feel good about the way they parent, who they are as an adult, so it's both a quantity and a quality of the people in their environment.

Q: Could you comment on the differences in parents? I'm presuming you had Latino parents, and you had African-American parents, what were some of the differences that you might have noted, or were they all the same because they were in poverty? Can you share just a little bit more about that with us?

MS. LANDRY: Sure. There are lots of things that are the same about them, and some of the important predictors predict for all families. The African-American families in this poverty sample were more likely to have more restrictive or authoritative, authoritarian attitudes about children's behavior, but in our intervention program, that is something that we found was shiftable with information and with them seeing for themselves what would happen if they would shift their behavior to allow children more exploration, more voice, sort of, in what they wanted to do.

The Hispanic families tended not to value or understand the importance of talking to children, of stimulating them cognitively. There was often quite a bit of nurturing in those families, but less cognitive focus.

Q: The tactical implications of the professional development interventions are clearly evident focusing on individual teachers and cohorts. What would you say the systemic or strategic implications for whole facilities over time where the effort would be to consolidate the gains made by professional intervention, professional development, where in a year or two the effects of that can evaporate into a Starbucks or a Wal-Mart or some place that's paying significantly higher wages and job security?

MS. EDWARDS: Do you want to start, David?

MR. DICKINSON: I'll start. It's that concern that's led me to the approach I'm using right now where we're working with entire programs, and we work with the

program leadership where they're setting standards for what's expected practice across all the different dimensions of the classroom, so that with respect to writing and book reading and so forth, there are very specific expectations for what should be happening.

I would also like to be able to equip programs with the ability to examine practices. This is a program that's already using the ACRS, which is a widely used tool. I would like to augment that with a way of objectively looking at the classroom practices so they have a way of ensuring that there is a regular practice that's going on up to standards. That kind of an approach in this program I'm talking about already is a part of the annual review where the teacher sits down with the supervisor and discusses what's happening. So there becomes an ongoing way of monitoring what the quality looks like.

Also, we're trying to build into the programs the knowledge and materials to do trainings themselves when new staff come in. So I think it's a matter of building into the systems a complete sort of acceptance and adoption of a point of view and mechanisms for sustaining that. That's within the program.

I think local community colleges and that's another whole set of issues that I think need to be addressed.

MS. LANDRY: Just following up on what David said, we're finding the Head Start programs that we've worked with across Texas were given special grant funds to do this. So the big fear was that once that money ends at the end of the two-year program, will anything sustain? Will we have built something of the beginning of an infrastructure for this? I'm very encouraged now to hear from many of those programs that their administrators have been so excited and satisfied with this that they are restructuring their finances to have in-classroom mentors as part of their staffing patterns now what they did not have in the past.

Q: I'm going to try to come back to the issue of childcare versus early childhood education versus Head Start, and educating students so that, once again, as the panel says, they are reading in the first grade. I've heard a lot of talk about the early childhood education community. By the way, I taught for seven years, and I have a degree in early childhood education, and a certificate and everything. I don't bash the community. But one of the frustrations, as a former Head Start teacher and administrator, one of the frustrations is the lack of alignment between what is happening in the early childhood education and the public school classroom. I haven't heard any talk about collaborating directly with public schools where these early childhood education children will be going, and will be tested for the rest of -- I haven't heard anything and I'm wondering if there are any concrete steps being taken to forge -- I mean, it's great that there are relationships with universities and community colleges, and with the staff, but do I see any relationships between them and the public school teachers in the kindergarten and first grade? And I think that's an incredible step to take if we want the children reading in first grade, and not failing at the end of fourth grade.

MS. EDWARDS: Do you guys want to respond to that? Beth Ann, do you want to respond?

MS. RYAN: One of the things that you'll find in your policy documents are incentives to study this to get that exact kind of communication going. In other words, incentivizing whether or not we have prepaid guidelines in your state, incentivizing whether or not your HHS works with your Department of Education, works with your -- I mean, I am amazed how many places there are funding streams for early childhood education. And if you look at it from the federal level, you have them in Justice, you have them in Labor, you have them everywhere. And if we can't do the same thing at the federal level, we sure as heck can't ask the folks down at the state level to do it.

So part of what we're trying to do is do it on our own, number one. We meet now monthly with the people over at HHS that are in charge of all these programs, and we're asking the states to do the same thing. I think that's the start.

MR. DICKINSON: I can't say that it's now finished, but there was a Head Start effort at Transition Efforts where they had funded programs, and they have a number of experimental designs to try to encourage schools to make changes that build on what's happening in the earlier preschool years. Now, those results have come out, and unfortunately they don't have a lot of effects. So it's a difficult system to move. And I'm personally not in that right now.

I think that that's the next sort of frontier. Clearly, I think there's a lot of research that shows that what happens sometimes is children come out, they may be more advanced coming out of four-year-old classrooms, and then the kindergarten teachers don't pick up and build on that necessarily. So you can actually have, what we haven't talked about here, is not just failing children, but children who are doing better don't necessarily get supported.

MS. EDWARDS: Okay. I'm going to do this one, oh, gosh, two last questions or comments.

Q: There's some innovation fatigue into work in learning organizations and that sort of thing, and you mentioned that one of the components in Texas is a good language and literacy curriculum, and your teachers work with a variety of different curricula, right. How do you prevent innovation fatigue given that a textbook publisher, or a state initiative, or whatever, are at the same time doing training programs? Not only prevent innovation fatigue, but sort of head it off and maybe even coordinate? I think it's the same problem of a systemic issue, but from the unit of analysis of the teacher.

MS. LANDRY: I think that's critically important, and it's definitely a problem out there. I think once we have this good information out of Russ' new research initiative, the grants that are going to look with experimental designs at the commercially available curriculum, then there is some real hard evidence to help administrators, teachers, et cetera, program directors, make decisions about curriculum. And hopefully then part of

the goal will be to provide more information on what you might need to add to a curriculum, but not to constantly run out bringing everyone in. That's what we so often see.

So many teachers have curriculums that are sitting in their supply closets that they just don't have the support and time to learn how to use.

MS. EDWARDS: Okay, Bill is our last comment here.

Q: Admittedly my experience is in the three or four years later than the group you're working on, but I didn't hear any discussion of the physical side, the resources that the child brings to the task of learning. Did you look at the incidents of vision system, the limitations, for example, how much impact did they have, auditory processing is used, you talk about phonemic awareness, that's a piece of it, but the whole body of learning system. And I just wonder what kind of data you have or have looked at in terms of degree of limitations on the vision system, for example, the perceptual system at large?

MR. DICKINSON: Is that something that you've looked at in your study?

MS.LANDRY: We have looked at -- you're talking about visual processing, not acuity?

Q: Yes, absolutely.

MS. LANDRY: We have measured not in the classroom base, but in the longitudinal study of the children that we're following now at 10 years of age, extensively at a broad range of processing abilities, and visual processing does certainly, if it's not intact, and functioning properly, definitely has a negative impact.

Q: There's an awful lot of it.

MS. LANDRY: Sure. Right. And in our sample, there are a large number of very low birth weight children, so we can look at the contrast of biological risk versus not, and they have a much higher proportion of problems.

MS. KEMBLE: We're going to close down. I just wanted to really thank the people who came to make the presentations today.

(Applause.)

MS. KEMBLE: I wish this was a combined congressional hearing room, really, to get all this data on the table. It was a wonderful discussion. I thank you all for coming. I want to thank Beth Ann for bringing her materials and for coming herself, and I hope you will all pick up those things on your way out, and that we'll see you again at another forum one day soon.

Thanks so much.

(End of event.)