THE BROOKINGS INSTITUTION

FALK AUDITORIUM

STRENGTHENING STUDENT LEARNING THROUGH INNOVATION AND FLEXIBILITY

Washington, D.C.

Monday, March 28, 2016

PARTICIPANTS:

Welcome and Introductions

ROBERT E. RUBIN
Co-Chair, Council on Foreign Relations
Former U.S. Treasury Secretary

Fireside Chat: New Directions for K-12 Education:

Moderator:

DIANE WHITMORE SCHANZENBACH
Director, The Hamilton Project
Senior Fellow, Economic Studies
The Brookings Institution

Discussants:

ALLAN GOLSTON
President of U.S. Program
Bill and Melinda Gates Foundation

ANTHONY BRYK
President
Carnegie Foundation for the Advancement of Teaching

Roundtable: Improving Targeting and Flexibility for Title I Funding:

Moderator:

CORY TURNER
Senior Editor, NPR Education Team
National Public Radio

PARTICIPANTS (CONT'D):

Author:

NORA GORDON
Associate Professor, McCourt School of Public Policy
Georgetown University

Discussants:

JAMES COLE
General Counsel, Delegated Duties of Deputy Secretary
U.S. Department of Education

CAROL R. JOHNSON
Visiting Professor, Vanderbilt University
Former Superintendent of Boston, Memphis, and Minneapolis Public Schools

RICHARD MURNANE
Juliana W. and William Foss Thompson Research Professor of Education and Society
Harvard Graduate School of Education

Roundtable: Exploring New Tools to Strengthen Student Learning:

Moderator:

LILI LYNTON
Founding Partner
Boulud Restaurant Group

Authors:

JONATHAN GURYAN
Associate Professor of Human Development and Social Policy, Institute for Policy Research
Northwestern University

PARTICIPANTS (CONT'D):

AARON CHATTERJI
Associate Professor of Business and Public Policy
Duke University Fuqua School of Business and Sanford School of Public Policy

BENJAMIN JONES
Gordon and Llura Gund Family Professor of Entrepreneurship, Professor of Strategy, and Faculty Director
Kellogg Innovation and Entrepreneurship Initiative

Discussants:

GROVER "RUSS" WHITEHURST
Senior Fellow, Center on Children and Families
The Brookings Institution

JIM MANZI
Founder and Partner, FoundryDC
Author, "Uncontrolled: The Surprising Payoff of Trial-and-Error for Business, Politics, and Society"

ROBERT HUGHES
President
New Visions for Public Schools

* * * * *

P R O C E E D I N G S

MR. RUBIN: Good afternoon. I'm Bob Rubin, and on behalf of my colleagues at The Hamilton Project, let me welcome you to our event today, which is Strengthening Student Learning Through Innovation and Flexibility.

We started The Hamilton Project roughly 10 years ago and from its inception it had had as its bedrock 3 objectives, growth, broad based participation in the benefits of growth, and economic security. And it's our very strong view that they are mutually reinforcing, and you put them all together and what you have is an objective of inclusive growth and then you develop a policy agenda in pursuit thereof. And for the last 10 years we have had session such as we're having today on a whole range of topics relating to inclusive growth. We've had healthcare, we've had the question of how do we deal with the future of work in an age of technology and globalization, we've had criminal justice reform, we've had I think two events on that, looking at it through the prism of economic imperative, we've had combating poverty, again as an economic objective, and much else.

It is our view that if we're going to have the kinds of widespread income gains and economic security that we want in our country we have got to have growth for a whole host of reasons. And conversely, if we're going to be successful in having growth we're going to have to have broad based participation in the benefits of growth and economic security, again for a whole host of reasons.

Today's discussion returns to the topic of education with a special focus on improving educational outcomes for kids from lower income households. We have a national poverty rate, as many of you know, of 16 percent, a child poverty rate of 20 percent, which is a disgrace for the richest country in the world, and now a majority of our kids in public school attend what are classified as high poverty schools. Thus, substantially improving education for kids from economically stressed conditions not only directly affects a large number of our people, and it is very imperative for them, but it is also an enormously important economic issue for our country in order to have an effective work force in the future. The costs are not social spending, but the costs of doing this are public investment. The problem is getting our political system to understand that, recognize it, and act accordingly. Of course there's trouble getting our political system to do anything, so that's part of a broader question. (Laughter)

I recently gave a TEDx talk at San Quentin State Penitentiary in California. And as I talked with the inmates in preparing my remarks, we had a conference call with eight inmates, or roughly eight inmates, and then I met with them at the prison and learned about their life situations and their life histories. I was enormously impressed with how thoughtful and how insightful these inmates were, and what terrible price they, the victims of their crimes, our economy, and our society have paid for what so many of these inmates did as a product, at least in my view, of having grown up in what were such difficult conditions, conditions of enormous stress, conditions of inadequate education, inadequate family structure, crime ridden districts. As one of the inmates said to me, the only role models in his neighborhood were drug dealers.

Part of dealing with that is obviously universal pre-K, and even more broadly, early intervention. But a lot of it also are the issues around our schools, and that is the subject that we are focused on today. This discussion will cover three topics, new directions for K-12 education, which proposes tutoring for students who are behind grade, improving targeting and flexibility for Title I funding, and new tools to strengthen learning, which addresses more effectively using digital modalities. Each topic will be addressed with a paper and a panel discussion. We have an extraordinarily experienced and distinguished set of authors and panelists. In accordance with the practice of The Hamilton Project I won't read from their resume, they're in your materials, but it really is a remarkable group.

I want to make one further comment. We are unfortunately at a time in our nation's history when much of what passes for policy dialogue has degenerated into ideology and politics. In that context it seems to me that the commitment of our authors and our panelists and of The Hamilton Project itself (inaudible) as a purpose about policy is of extraordinarily great importance, and in effect carries the flame for serious policy during a very difficult time in our political history. And that in of itself is important to keep robust policy development alive and also to provide our cities and states and our Federal government, when it again becomes functional -- and there the issue is primarily Congress -- a work product that they draw off.

With that I would like to recognize the extraordinary capability of The Hamilton Project team. The leaders are Diane Schanzenbach, our Director, and Kriston McIntosh, our Managing Director, and also of their colleagues, hardworking and talented. All of them have put together the intellectual leadership, the intellectual content, and the logistics of this event.

And with that I will turn the stage over to Diane who will moderate our first panel. Thank you. (Applause)

MS. SCHANZENBACH: -- and I'm the Director of The Hamilton Project. And The Hamilton Project promotes economic policies that advance opportunity, prosperity, and growth. Nothing is more important than a solid, functioning education system in promoting opportunity, prosperity, and growth.

So I'm delighted to introduce our speakers at this fireside chat. First, to my left, is Allan Golston. He is the President of the United States program at the Gates Foundation. And so in that role he leads the Foundation's efforts to ensure that all students in the United States receive a high quality education that makes them ready for college and ready for their careers. He's been at the Foundation for 15 years and everyone recognizes that the Gates Foundation has provided immense leadership in this area over that time.

Next to Allan is Tony Bryk, Anthony Bryk. He is the President of the Carnegie Foundation for the Advancement of Teaching. Before taking on that role he's had a very important academic career where he has done foundational work on catholic schools, on school organization. Anyone who ever suffered through HLM class knows that his textbook on HLM is very important (laughter) and clear. And also very importantly he was one of the founders of the Chicago Consortium on School Research, which really set the standard for researcher-educator partnerships in the United States. It's been often imitated.

One more piece of housekeeping that I need to say is that we've got note cards underneath your chairs, and the way we like to do Q&A here at The Hamilton Project is if you come up with a question that you'd like to have asked, write it, preferably legibly, on your card. Our team will be going around collecting these and they'll bring them up to me and then I'll ask the questions from the audience at the end.

So with that as background, I wanted to start by asking Allan the first question. So fireside chat is entitled "New Directions For K-12 Education". Tell me about some of the top priorities that the Gates foundation has for improving U.S. education. And I know you're particularly interested in how this is going to work in practice. What do we know about how to reliably change systems as complicated as the U.S. education systems?

MR. GOLSTON: Yes, thank you for your question and thank you for being here today. It's exciting to be here.

So I think it's important to set some context about what system we're dealing with in the 21st century. So we have roughly 50 million kids or so in our public education system, and of those kids, as Bob Rubin said, more than 50 percent are on free and reduced lunch. So they're living in poverty. At the same time roughly 42 percent are minority students. And so we have a different education system and minority students are often times fundamentally underprepared and under supported by public education. So from our perspective we have to have a public education system that meets the needs and provides a quality education for all kids with no exceptions. And we particularly have to make sure we're reaching these two demographics that I spoke to earlier.

There's a lot that needs to happen and you're going to hear about that in the conversation and I think throughout the panels today, but we're focused on three critical variables. Number one is high expectations for what students needs to know to be prepared for their career, for citizenship, for college. And we think that that's represented very well in the common core state standards. The second thing is recognizing that in order to move any public education system you have to make sure that you're moving and changing instructional practice in the classroom. So we're focused, number two, on providing teachers with the resources and the supports that they need, whether that's instructional materials or curriculum, to really push instructional change in the classroom in consistent ways day after day in every classroom for every student. And then the final thing that we're focused on are more personalized learning models. When you have this diversity of perspective and students in a public education system you have to have ways to differentiate your instruction for students to be able to navigate their learning around their own path, and we're very interested in both models and tools and technologies that empower teachers and empower students to be able to do that more effectively. And we think that that's at least three of the essentials, even though you need to do a lot more.

MS. SCHANZENBACH: Terrific. Thanks. And, Tony, I was hoping you could talk a little bit about what you see as some high leverage problems out there. What are the challenges and opportunities that we're facing for the teaching force today? Is it professional development, recruitment, retention, something different?

MR. BRYK: Diane, we tend to think about the work we're doing through the Carnegie Foundation as focusing on high leverage problems. I think that one of the highest leverage problems is getting all children to learn to read by grade three and have developed a disposition to use reading to learn. This is an area where we have the knowledge and in most places we have the resources, we just don't know how to put these things together into systems that reliably do this every day for every child.

And when I say that I don't mean moving the proficiency rate from 50 percent to 60 percent, I mean literally getting every child there. Because we know the predictive analytics off of that, when children don't learn to read the consequences in terms of dropout rates, incarceration, substance abuse, their all connected back to this. So rather than trying to remediate this problem over and over again, can we actually organize systems to do this right the first time. That's one.

Another is the very weak and incoherent systems that bring new teachers into practice, fail to support them well to learn to teach well, and have the consequence that many of these people are back out the door in a few years. And we keep doing this over and over and over again. And this is a very weak and incoherent system, so there's good reason to believe that with sustained effort we could do much better here. If we can get new teachers better, faster, and hold onto them, we can change the profile of outcomes in a school district for a generation to come. So that's another big one.

A third one I might mention, and actually this goes back to my Board Chair Andres Alsono, shortly after he became Board Chair he said to me, well if you were going to advise the next administration, what's the one thing you'd tell them to do. Well, I don't think about that so it took me months until the next time I saw him to say, Andres, I think I've figured out the one thing the Federal government might do. And I said to him build the highways. And thinking about what the interstate highway system did in terms of economic development in the United States. In this case, for education, the highways is this robust technology system, in every classroom, in every school, in every home and community. Because the more work that students and teachers can do on a reliable digital platform, we would have incredible capabilities here to accelerate how we learn to improve. But that right now this is a fractured system, it doesn't exist in many homes and communities, particularly in the places we're talking about where most of our students are. And therefore the ways you think about using it tend to be more on the margins rather than this thing existed as a robust -- and I mean robust at the level of combat ready -- you can't be sort of like 95 percent robust because if I'm a teacher and I have to know it works every time, every day, for every student, but you build that kind of system and I think you open up the possibilities for innovation, you open up the possibilities for much more rapid information and research on what's working for whom and what's not, and really capitalizing on the fact that education is this extraordinarily large network. Millions of people doing similar work every day, but we don't have the infrastructure to actually learn from that.

So that's the technical side of the infrastructure.

MS. SCHANZENBACH: That's terrific. So it sounds like most of the change that we need to see will not come from at least Federal policy, although I take your point about the highways. What do we know about sort of other levers that we can pull to get systems to change? And that's for either of you. Tony first probably.

MR. BRYK: Well, one of the things we've -- the earlier work that I did in Chicago, we were trying to learn about what I would call the what of school improvement. What are the critical subsystems that one has to work on school by school to get better at the outcomes of schooling. In our more recent work we're focusing now on the how. How is it that organizations get better at doing their work and continuously improve, particularly in the context of very rapid change? And as much as we think about the problems of education now, we tend to be looking back into the 20th century and trying to solve the problems that have emerged there. But we live in a time where knowledge is exploding, where change is occurring on a global scale, and in all likelihood it's going to occur even faster going forward than it has in the extraordinary period of time we just lived through.

When you think about that, that means that schools have to -- we really have to accelerate in schools how these individuals schools and systems of schools learn to improve. This isn't meaning just plocking in and we've solved the problem. They have to become learning organizations. And so we're really focusing on the question of well, what do we know about organizations that continuously get better at what they do. They have built infrastructure for improvement. It's in the fabric of what they do, and at the heart of this work is that the people who are engaged in the work every day are central to its improvement. That is not how we've thought about policy in the United States, it's not how many of our schools actually work. And that observation that the people who are engaged in the work are central to improvement, that shows up across diverse sectors in industries. This is not an argument that's somehow peculiar to education. This is a fundamental characteristic of organizations that continue to get better at what they do. That's what we have to do across education. We have to build that kind of improvement infrastructure. And then we need to think about policy as what would policy do to encourage that kind of activity to occur.

MR. GOLSTON: And I would agree with that. And there are some ways that I think we already see that happening and it working. We did a survey of teachers, and we do it regularly, but over the last five years we've surveyed teachers three times in a partnership with Scholastic called Primary Sources.

And the premise behind that is exactly what Tony said. No one really knows teaching better than teachers. And so if you asked them what is it that you need to be more effective in the classroom in all situations, if you ask enough of them you get a critical mass and a sense of what's really important and what really matters. So we've done that and have incorporated that into our work and have shared that with partners. But one of the things that teachers say is that they feel isolated in the classroom, that they don't have enough time to think about innovative things, they don't have enough time to bounce ideas with their peers, and all of that for the benefit of both moving the profession up, but more importantly about improving instructional practice. And reading the verbatim from that survey was quite heartening. You know, I feel isolated, I want to do what's best for students, sometimes I need, or I have an idea that I see another teacher struggling with and I feel like I could help him or her.

So I do think one of the big levers in

public education is networking teachers more effectively to reduce the isolation, both within schools and across schools and across the country. And there are some powerful levers that are already in place that allow that to happen. The standards, for example, that are in the common core state standards. Because that's universal you see powerful exchanges of teachers across state lines, sharing information, sharing resources, helping each other solve problems. So I do think that we always look for these big, big ideas of, you know, technology in 15 years is going to be the big lever. And while those are certainly most probably true, there are some immediate things that we're starting to see happen now that are quite powerful and you see are beginning to move the needle and move the profession in a direction that we all want to see.

MS. SCHANZENBACH: Since you brought it up, common core, let's turn to that next. So common core has been somewhat controversial.

SPEAKER: Really? (Laughter)

MS. SCHANZENBACH: Yeah. But you all are still quite invested in it. Why do you think it's so important, and who do you think it's so controversial?

MR. GOLSTON: So we're invested in it because it was a collaboration of governors, teachers, other educators, to come together and say if you just take a step back and look at what students need to know to be prepared, what would that look like in math, English/language arts. And they came up with these standards and they were, you know, dramatically different than what you saw before, where each of the 50 states had done their own standards. They were quite extensive. And so this focused on a core set of knowledge and skills in those two disciplines that really mattered. And it was done by experts, educators, policy makers, governors, et cetera. And we think that's important and we thought and feel like it is important for the country to have a similar set. So we loved that it wasn't a Federal driven program, that it was done with a state collaboration and it was done by states.

And we are also supporters of it because we see that it is working. When you see it implemented well and when teachers and students get the supports that they need, it is moving the needle in those places. And it was a big lesson for us because we underestimated the amount of resources it would take to implement these standards really well. What tools and resources and supports are needed, how do you engage community so that they understand what it is and what it isn't. And that's where we're spending our efforts, is doubling down on high quality implementation. But we feel that it is good for teachers, good for students, and it's good for innovation.

What isn't as apparent from the common core is the amount of innovation and new entrants in education technology, resources, curriculum, that have been able to come together and say finally there is a standard that I can innovate on that applies to multiple states, not just one. Instead of having to go state by state by state to create tools and resources to support students and teachers.

So we think it has great promise, it is demonstrating that promise, and we're excited to continue to support its implementation.

MS. SCHANZENBACH: Tony, do you want to say anything about the common core or I can go on?

MR. BRYK: No, I would just echo the comments we've already heard from Allan that the unfortunate part of this is it go tied in to Federal initiatives at a time when at the Federal level our politics is extraordinarily contentious. And many people lost site of the fact that this is 25 years in developing, that it really did start out in states and with state leaders. And that the content of it would definitely be an improvement if it were taken up well.

And the other thing I would add is I think the context for its introduction, in at least some districts and schools and states, have been a bit problematic because it came on the heels of a very controversial teacher evaluation system that no one in the world anywhere had ever implemented one like we were implementing. And then you think about what the common core asks of teachers, we're going to ask you to teach new content and teach it in new ways. So we're going to fundamentally change your work, which means you're going to have to try things, you're going to probably fail in some regards, we're going to make your work lives risky. And, oh, by the way, we're going to hold you accountable to a test that you've never seen before. You know, you'd be pretty hard-pressed to design a worse environment into which to put such an ambitious reform as the common core as the one it landed in, at least in some places.

So we've got some work ahead of us to make this work.

MR. GOLSTON: I also think that there was very little discussion or emphasis on what really matters for moving instructional practice. And it was I think a painful lesson in the reform community, which is high quality feedback, professional development that really is tailored and targeted to teachers to help them move and improve their instructional practice. And if you look at any system of improvement, whether that's in the private sector or effective ones in the public sector, that's where the emphasis is. It's not on the evaluation side of it, it's on high quality, regular feedback that's timely, but also with timely inputs on how do I get better at this and how do I continue to do the things that I do well. That was another I think set of circumstances that caused this to be so controversial and came at a pretty big opportunity cost.

MS. SCHANZENBACH: Absolutely. I wanted to follow up and ask a little bit more about teacher evaluations. So is that still part of what we need to do going forward? And if so, how do we best do that? Or do you think that we can manage this without sort of having formal evaluations of teachers? That's mostly for Tony, but.

MR. BRYK: Evaluation is part of all work roles. So there ought to be better forms of teacher evaluation than we've had in the past. I think it's hard to see people disagreeing with this. The problem is that, in my view, what we've done with teacher evaluation is we've created a system that at one level is very noisy at the individual level. So you can see clear patterns if you aggregate people together, but the information we actually have on any particular individual, it's got a big standard error around it. So that's an issue.

The other is because the system was designed with a particular purpose in mind. We know we have very wide variability in teacher effectiveness. Very good research has demonstrated this. And that we also know that there's some portion of people at the (inaudible) who simply shouldn't be in classrooms. And that, you know, getting these people out of classrooms has historically been a major problem for school districts. So we kind of built an information system around giving us better data about that. But the data itself has a little bit of the character of a standardized test, is the way I think about it. It tells us generally how people are doing and put them all on one number line. But if you want information -

-and one of the things I've done with a number of groups is, I want to do a thought experiment with you. I want you to think about what kind of information system you would build if your principal purpose was actually improving teaching and learning.

Well, it would have much more micro level information because I teach something to somebody using some set of instructional materials. And information that's actually going to support improvement of teaching has to exist at the intersection of that. So, I'm a first grade teacher, one of my principal instructional practices is guided reading, how do I get better at doing that. That's a different kind of information that we'd be feeding back to teachers than saying you're value added score is .278. You know, there's information that's designed for purposes, and this was not a system whose principal purpose was informing improvement. Once we got on everybody then it was oh well, we should somehow use this for improvement, but that wasn't its purpose in its initial design.

MS. SCHANZENBACH: Do you want to add anything to that?

MR. GOLSTON: No, I think that's perfect.

MS. SCHANZENBACH: That's perfect. Yeah.

MR. GOLSTON: Well said.

MS. SCHANZENBACH: Well, I wanted to turn a little bit to the achievement gap. And I wondered because of the new era with the common core, do you think the measured achievement gap is going to look larger or smaller after the common core assessments are sort of at full speed? And symbolic questions about it, do we pay enough attention to the achievement gap and do we have good sense of what we should be doing about closing the achievement gap?

MR. GOLSTON: So it's my idea that we don't pay sufficient to the achievement gap. And the numbers are sobering. I mean there's some good news/bad news, as is often the case in public education. I mean the good news is that graduation rates are at an all-time high. And it's been slowly trending up when you look at different measures. So at current state there are somewhere hovering around 81-82 percent. That's good news. When you then start to look at I think what is a more important measure, which is what percentage of students are graduating ready to go onto the next level, whether that's college or career. Those numbers look more sobering, they're lower. There's only 40 percent of students, if you just look at something like ACT scores for 2015, that are prepared. But then when you get to the achievement gap and you disaggregate the data, only 12 percent of African Americans, 25 percent of Latino students, 20 percent of low income student, are prepared to succeed and go onto the next level after their high school experience. And you don't always hear those numbers talked about or those discussions.

So are we paying enough attention to it? No. Is it a problem? Absolutely. And I think that from our perspective at the Foundation there's both a how, as is always the case, and a what problem. You know, in education often times the attention span to really implement something fully and to learn from different systems and networks is fairly low before the new thing comes in. And we actually do have a good sense of what works for students that are underserved by our public education system. So part of this is really focusing on quality implementation and making sure that these structures and these systems and these interventions are working for low income students.

But there are also things that we know work that I think the system is resistant generally to implementing well. You know, we have -- and you can read about it in the news, there are discipline problems in schools, particularly those schools that are serving these students. If you're not in school you're probably not going to do better on graduation rates and there are amazing strategies that I think we see all the time that are much more effective in dealing with classroom management than expelling students. High quality charter schools are another example that you can see in urban settings that are really strong in closing the achievement gap, and yet we have policy and practice issues that are challenged there.

So I think part of it is both what and part of it is how, and we are going to have to do better with these underserved students if we're really investing in the future of America.

MS. SCHANZENBACH: But there's no silver bullet.

MR. GOLSTON: There is no silver bullet.

MS. SCHANZENBACH: And I think that's an important -- exactly. Another question before I turn to the ones from the audience, and I commend your excellent penmanship, is there is emerging evidence that personality skills really matter, these non-cognitive skills. The name of these are changing over time, but we know that they are very important and there are large returns to them.

So you talked about the common core has agreed on certain skills that need to be achieved by all students in math and in reading. Should we be talking about personality skills more? Do we have a system where we're encouraging those? And if not, what do we need to do to encourage formation of better personality skills, non-cognitive skills?

MR. BRYK: Well, I mean I think the shift from what we've been doing on the accountability side to the common core is an improvement because it's -- well, it's kind of a basic idea, if you put enough stakes on anything you measure you'll get more of what you measure, so you better measure the right things.

We've seen systems that have become very attuned to specifically what's being measured and working back from that. So to answer your earlier question I think we will see some pretty large gaps emerge between individual schools that we thought were doing really well and as soon as we changed tests, well, they don't look like they're doing so well.

This work coming out social psychology on growth mindsets, reducing sense of questions about whether you belong inside the institution, issues around relevance, purpose, and value. It has a very strong science base under it and it is actually --

there is a growing body of evidence emerging that these things both matter and the good news is they can be changed. And so starting to focus attention in these areas I think is very powerful. This is relatively new work on how to take these kinds of scientific findings and get them into educational institutions. So probably the worst thing I think you could do is to put a high stakes accountability on something that you don't even know quite yet how to make it happen, how to engage teachers in this, how to get more research about what works for whom under what set of conditions. I think it's very promising. And I do think opening up the dialogue about what it means to educate well, which this is where I locate this, I think is very important because what we talk about is what we're going to get more of.

MR. GOLSTON: I'm also struck by the evidence that we've had and it continues to, you know, come forward in powerful ways around the earlier you start with these non-cognitive skills the more effective they are. And I was on two learning trips recently in early childhood learning settings from birth to five and one of the things that we did was just did a review of the research. And it's quite striking and powerful to see that these high quality programs that really emphasize this at these earlier ages, but also engage the families and the parents on the similar strategies. These students, even if they don't all do well academically, there are outcomes on other dimensions that are also important to society, are remarkable. So we know that these matters, and as Tony said, organizing them and structuring them and integrating them into a consistent delivery model in a public education system is I think the next stage of the work. And I would certainly agree that if you want that innovation to happen rapidly we have to be very cautious about how we measured them and then the consequences that are tied to those measurements.

MS. SCHANZENBACH: I think one of the striking outcomes from the measuring effects of teaching work that Gates funded was that teachers vary in their ability not only to raise standardized test scores but also to improve these personality skills. And so that suggests that making sure that this is part of any sort of valuation and providing feedback to teachers should be really important.

MR. GOLSTON: Absolutely.

MS. SCHANZENBACH: So I have several related questions and we'd like both of you to answer it. So I'll start with Tony. There is a great interest in commenting on the role of various stakeholders in teacher development or providing ongoing support for instruction. So that includes they want to know about what role do teachers unions play in this, what role the principals play in this.

MR. BRYK: In the development of new teachers?

MS. SCHANZENBACH: Yes.

MR. BRYK: Well, you're starting in a slightly different place. I think one of the most significant things we could do if we want to strengthen development of new teachers is take down the wall that has traditionally existed between the places that formally prepare teachers, our colleges of education, and the places where people actually learn to teach, which are typically in our school systems. And historically these have been kind of conversations over the transom. I've seen them in school systems, and I say well what are those people doing, they're not preparing people to teach in our schools. And the other side is well, you know, we are giving them all this fundamental knowledge and the district doesn't know how to actually mentor them into the work. Take the wall down between these two institutions. Which we did and some of the work started in Chicago where we select the students, we prepare them academically, we're responsible for their clinical placement, we're responsible for mentoring and their mentoring induction program over the first couple of years. Well, if they don't succeed there's only one group to look back at. We did something wrong. We have a system right now where that kind of feedback information just doesn't operate. So we can continue this very dysfunctional conversation because it's --

no one actually is responsible for the whole of this trajectory. And wherever there's a transition, this is a big one, you're going to tend to find problems.

And so I think some of the work on residency programs is starting to move in that direction. Some of these aren't as strong as I'd like to see them. But it is fundamental I think to bringing these things together so that whoever is providing teachers and the people who are hiring them are now in much stronger partnership around the success of these new people.

MR. GOLSTON: I would agree with that. I think it starts there. There has been relatively little innovation in schools of education over the past decades. And if you just chart all the education reforms that have come, and even the ones that we say look, these are critical, you just haven't seen those backtrack. So there's clearly a wall.

In the system where we see districts and schools in particular performing really well on this is when the principal or the building leadership has really taken the responsibility for instructional leadership seriously, and the development of teachers. Like when you just spend 10 minutes with them they are talking about developing teachers. It's not the buses were late, et cetera, which are real things that these leaders have to deal with. So you can't argue with that. But that's their primary function. They see it, they take it seriously, they are lifelong students of that and they're really driving it.

At the same time we are seeing new models emerge where teachers are taking more of an instructional leadership responsibility and role. And there are different models across the country being either implemented or in experimentation phase where teachers are taking responsibility for on boarding and developing teachers. And it's not high stakes, it is clearly for the benefit of professional development and moving the instructional practice. And when you see those working well it's the same thing. Those teachers take that very seriously. And so I think that these new approaches that are kind of shaking up the traditional kind of status quo are really showing both satisfaction in the profession -- those schools have a culture and just a morale and a work force satisfaction that's markedly higher. And what becomes more important as you see it show up in student outcomes in a very consistent way.

MS. SCHANZENBACH: So is that latter piece, the teacher-to-teacher mentoring, is that what we would see the union get behind or -- they specifically asked about what's the role of teachers unions in this. Is it that or is broader than that?

MR. GOLSTON: So I think teachers unions can be a strong ally in this. And I think, you know, from our perspective continuing to have those dialogues about what teachers really believe and learn and think are important for their profession and their partnership with unions to work with system to do that I think can be a powerful role. And I think that that is a powerful ally. And we've seen that in certain districts work really well.

MS. SCHANZENBACH: A question in particular for Tony. Can you say more about creating learning organizations? What are some key elements of that?

MR. BRYK: Well, I mean creating learning organizations, it starts on the job floor if you will. So it starts with teachers being students in classrooms and it works all the way up through the organization. When you see organizations that are very good at this, every level, whether you think about the new teacher, teacher communities, teacher leaders, principals, the area superintendants, one of the -- if you translated this into education one of the things you'd see is that every level they would be the people who get promoted are people who are very good at improvement and mentoring and coaching other people to do this. So it runs all the way up through the organization. Yes, there is some technical knowledge and skills that are required to do this, so some capabilities building because this is not in the structure right now of education, it's not what we prepare teachers for, it's not what we prepare educational leaders for. Ironically most educational leader programs there's nothing that you would call methods around improvement as part of those programs. So there is capability building. It would show up in policies so that, for example, if you really thought that the kind of work that Allan was just mentioning was just central to what principals would do, well, chances are in some form or another it would get represented in a principal evaluation protocol and so on. So this gets integrated into the whole fabric of the way the organization works and it means we need to recognize this, because among other things this will take some people's time to do. So when people are engaged in this kind of improvement work it's got to wind up in their job description. It's not something you just do on the side after what are often very long days.

MS. SCHANZENBACH: Do you want to add anything?

MR. GOLSTON: Well said.

MS. SCHANZENBACH: Yeah, absolutely, absolutely. So another question from the floor is how can we better coordinate and disseminate best practices, especially based on NGO or philanthropic investments? What are we doing well, what can we do better?

MR. GOLSTON: So I do think -- and we were having an exchange about this earlier -- I think philanthropy can invest more in capacity of the systems that we're trying to support, but also the technical assistance partners. And I think you have to have a strategy of both. And I think we have learned and we have seen other philanthropists learn that lesson in varying ways. So if you look at -- and this was a comment made earlier at a lunch -- if you look at where you see rapid improvement in public educations systems, traditional public education systems, there's often a partner alongside the public system helping them move that work forward. And yet often times you see a philanthropy in particular invest in one of those. They'll invest in the technical assistance partners, but very light on the district or public system side, or they're heavy on the district public system side, but light on the technical assistance side, or the opposite.

So I think you need to have both of those in order to really fundamentally increase the clock speed of change and to foster that dialogue and those networks.

I also think one of the things that we have learned is of being less prescriptive, being clear on the outcomes you want to see, but letting the systems and the organizations, the NGOs, really figure out the what and the how, because strategy shifts very quickly when you have to put it on the ground and actually make it work. And I think that is another way that philanthropy and NGOs that are supporting this work can be much more helpful and constructive in moving the ball forward. And being clear on outcomes is both about the activities, he outcomes, but also being quite clear on what the expectations are for teacher engagement, instructional practice movements, student outcomes, and I think those are important opportunities.

MR. BRYK: I think part of this is investing in building the infrastructure. We were quite fortunate when we were getting the consortium on Chicago school research off the ground that there was a group of foundations in Chicago that thought something like what we were talking about was a good idea. And we had multi-year funding and sort of -- and they were overlapping sequences. And basically we could always tell the funders this is what we're working on right now and this is the kind of set of issues that we think are on the horizon two or three years from now. But it wasn't around specific projects, because among other things, as Allan just said, things are changing very rapidly. And it was a real commitment to build infrastructure. So it wasn't just gathering data for our project, but we were essentially creating a civic resource. So we were integrating the school system data, we were integrating data from the police department, we were integrating data from social services and welfare agencies. Anything we could find we were trying to bring together, as well as creating this general purpose survey system because it was intended to be a resource for others. And part of what we're doing quite consciously is trying to bring down the barriers to get high quality researchers doing work in Chicago. That was about building an analytic infrastructure. We need more of that kind of investing going forward rather than I'm paying for a two year project, then I'm out and I'm going to pay for a different two year project.

MS. SCHANZENBACH: How do we get more of that? Is it just sort of philanthropic will to change it or? Is there something about the incentives that we have set up incorrectly now?

MR. BRYK: I like to think that -- Allan probably could answer this better than I -- that the philanthropic community is also a learning organization and I think this understanding about building infrastructure in various kinds of ways is beginning to -- I mean I sense -- well, just by virtue of people who have come to our improvement summit last week, we had a large number of foundations who were there trying to learn about what is this work about and then taking home what does this suggest about what we ought to be investing in. So I'm actually quite excited about what the foundation community -- about the leadership they can bring here.

MS. SCHANZENBACH: Well, speaking of learning in this aspect, especially a question for Allan, when do you decide, let's say as the Gates Foundation, to give up on an intervention? So what kind of evidence do you need sort of -- tell us more about how you go about learning?

MR. GOLSTON: It's a tough question because you're working with systems that are quite complex and slow to change, and yet you also have to work with a sense of urgency because you know and you live with every day that a cohort of students is being underserved and you didn't do anything to help them in terms of from your role. So when we look at our work we set expectations for what we want to see three, four, five years out. We track those constantly and we look at them on an ongoing basis and it isn't about did you hit the target or no as much as it is about the learning. Did your theory play out, is it playing out, are the assumptions, key consequential assumptions that you made bearing out or not. And at some point is it cost effective. Is it going to be able to scale. Are the political environments and the political directions going to be able to sustain this? And you know that's an important question because philanthropy is a drop in the bucket of public educations spend. I mean if you look at the $621 billion a year spent in public education, philanthropy is a minor amount. It's almost a rounding error. So you have to be looking at it with the mind of scale sustainability, the political environment, and those types of things. And at some point you look at objective and subjective data and you make a call on do we need to rethink our assumptions. And I think that we have done that a number of times, both in big and small ways. And I think that's an important thing for being a learning organization, but also having the patience to be able to get that information to make the call is one of the tensions.

MS. SCHANZENBACH: It seems like in many quarters of education policy you see sort of a revolving door on this. So very quick, intervention and then oh no, we need to move onto the next, we need to move onto the next. You can especially say that in Chicago where we've had new leadership every year for the last decade essentially. What does that do to the teachers and the system sort of morale and so on? This is mostly a question for Tony. And how do we change that?

MR. BRYK: Well, it's not surprising. Talk to the teachers, you'll get this sense of initiative fatigue. And it's all accelerating. Not that long ago when we thought about reform in schools they tended to be things we were adding on the side. So we'd add a summer school or we'd add an extended day program. But the work more recently is all focused on the technical core. And the rate at which new things are coming in is just getting -- is going faster and faster and faster. It cannot be absorbed. And I don't see any reason to believe that that's going to change going into the future. So you've got some outcomes you're working on and you're committed to trying to learn about this and you're going to stay the course. Well, if we keep redirecting people you're not going to get improvement on anything. And I think one of the big shifts is that when your organizers work around -- Allan said we've got some outcomes that -- we know the goals we're aiming for -- then groups are now -- whatever their initial working theory -- what I call working theory of improvement is, if they're learning that theory is going to evolve. That's very different than the project oriented work where I've got a solution and I want to prove to you that my solution can work. Because that becomes a part that in essence if it does work it's a part that goes into the system, but it's not what makes systems work. So this is a different orientation. I mean it's a complement. This is not an either or, we need to keep working on, if you will, new pieces, but the complement to this is how do you actually get systems to work day in and day out for every student in every location. Framing it that way has not been the analytic problem that has organized much of our R&D.

MS. SCHANZENBACH: I'm getting the signal that time is up, so let's thank Tony and Allan for this. (Applause)

(Recess)

MR. TURNER: My name is Cory Turner. I am a reporter and editor with the MRP Education Team. I am here very simply because I was interviewing Diane a couple days ago about a big project we're working on on school funding. And she said, oh, by the way, when we were all done. She said, you know, we have this new paper coming out on Title I efficiency. You should really come moderate our panel.

(Laughter.)

MR. TURNER: And luckily, though, it turns out it's a really great paper, and has been very helpful. So I hope, I hope this is really useful for you all, as least as useful as it was for me.

The panelist very quickly, I know you've got their resumes right here. Carol Johnson, former Superintendent of Schools in not just Boston, or Memphis, but Minneapolis as well.

James Cole, I don't want -- I want to make sure I don't screw this up. General Counsel, Delegated Duties of Deputy Secretary, U.S. Department of Ed.

And then Richard Murnane, Juiliana W. and William Foss Thompson Research Professor of Education in Society, Harvard Graduate School of Education.

Now we have Nora Gordon of Georgetown. And I won't waste much more time. Just want to give us the, give us the Cliff Notes version of Title I flexibility, and what might be done to make Title I money a bit more powerful at the local level.

MS. GORDON: Thanks, Cory, and thanks to the Hamilton Project and to all of you for coming to learn about this today. So we'll be talking about Title I of the Elementary and Secondary Education Act of 1965, and going forward I'll be talking a lot about ESSA, the December reauthorization of the SEA as the Every Student Succeeds Act.

And the part of Title I that I'm talking about is really just the money. So this is not about the federal government telling the districts what to do. This is about the federal government providing resources that districts and states have an enormous amount of discussion in deciding how they want to spend them in supporting whatever initiatives that they choose. And so there's about $14 billion.

There is two big problems with Title I as I see it. The first is about districts and states due to the long history of Title I not fully understanding the great flexibility they now have, and this is even greater under ESSA, to spend the money on what's most important to them, rather than spending it on what they think is allowed, and what they think is going to pass an audit.

The other set of problems is around how the money is distributed and not sufficiently concentrating funds in the neediest places.

So I'm going to start with the first one, and here the historical context is critical. Of course, we want districts and states to be able to use the money in the most productive ways. However, going back to 1965, there were no safeguards, and districts and states did very bad things with their Title I money like build swimming pools instead of helping students in the most disadvantaged schools.

And so this led to a bunch of fiscal rules and an audit culture around this. So one of those rules, which has just changed a lot in ESSA, is called Supplement not Supplant, and this picture is from 1978 publication.

And this, I think, is so interesting. If you think about the original accountability, the idea was that parents would be this accountability lever watching the money in their districts, making sure it would up where it was supposed to go.

And the good picture is the top one where Title I sits on top of the state and local money. That would be supplementing, whereas, supplanting the bad one is underneath where Title I is crowding out state and local money which, for sure, happened.

And so what is critical about this picture is notice it's sitting on top of state and local money. Think revenue. Think funds. Don't think particular expenditures. And so the test that auditors have been using in recent decades since Supplement Not Supplant came into place was really about spending, making sure that the spending was extra, and this was leading to a lot of things that were kind of, as Tony was just describing, around the edges, more after school, more summer, more pull-out instruction rather than what we now know is so important, focusing on the core, and this is because of this belief that spending on core things would be violating Supplement not Supplant.

ESSA recognizes this disconnect and has new language that is very explicit about how it's the money that needs to be extra not the spending. Districts need to give out their state and local money without regard to Title I, and then put the Title I money on top just like in that picture. And I should also mention we are right now in the midst of negotiated rulemaking on Supplement not Supplant, so we may see more specific language coming soon.

But in terms of what we need do to clear up this confusion, we need very clear language coming, and regulations, and guidance at the federal level, and very importantly, from the state level because the states are those who approve the districts' applications for Title I funds, we need to reach beyond the Title I community so that people who don't get paid by Title I know that there is money out there to support work they may want to do in their districts and in their schools. And there's a whole set of policies and practices that have grown up over the decades in state and local education agencies with this old version of compliance in mind. So we need to provide technical assistance to kind of revamp and get ready for this new vision of Supplement not Supplant.

Next, I want to turn to the formula. And what we have in mind here is the great federal power is redistributing resources across the states. So what we have in mind is that you should be getting on the bottom axis here. We have the share of children who are eligible for Title I. This is, essentially, the share of kids who are poor in a state. And on the vertical axis, the actual Title I funding per eligible child.

This does not look like a uniform distribution, much less like a positive relationship which you would expect with a progressive system, but, actually, a negative system where the places that are less poor are getting more money per poor kid. This is not exactly by design. This is what happens when you have four different formulas that are very opaque and interact in weird ways when the program is not fully funded, and you have an iterative process.

So you can have a lot of things in the law that seem like a good idea, but the net result is not a progressive one. So I offer a series of proposals about reforming the formulas, and what that would yield is something that looks more like what you would expect where states and districts that have more poor kids are getting more money per poor child.

So obviously, this is a political challenge. The same process that brought us these four formulas is not about your rollover, and for this reason, I recommend an independent commission to look at the Title I formulas and make a recommendation that Congress could vote up or down just like a base closing.

So the timing on all of this is critical. ESSA is happening right now. States and districts are rethinking their implementation. They're rethinking a lot of their compliance things, and we need to get this information out to them now. ESSA also specifically mandates IES to study the Title I formulas, and, oh, ESSA is on a four-year reauthorization timeline, so if there is going to be any changes proposed to the formulas, the time to get together and think about what those changes should look like is now. Thanks very much. MR. TURNER: All right.

(Applause.)

MR. TURNER: So we'll start this off with a few targeted questions to each of you. James, I want to kick off with you. General Counsel, Department of Ed. As Nora said, we're in the middle of a pretty long rulemaking process, so I know there's some things that I can't ask you about, we can't talk about, but I am curious. From your experience, what are some of the common misperceptions or misunderstandings around Title I, and what is the Ed Department specifically doing to help state and local education agencies get past those?

MR. COLE: Thank you very much for the question, Cory. And thank you very much, Nora, for exploring ways that we can improve Title I funding to get more funding to the students who need it the most. This is a very important topic, and I'm very honored to be a part of the Roundtable.

My bit of housekeeping was to talk about the fact that we are in negotiated rulemaking, but both Cory and Nora have given you a heads-up on that. So, unfortunately, I won't be able to engage with you and have the kind of robust back-and-forth we could have had when they planned this a few months ago because a good thing happened, which was a new law passed in December.

And so now the great news is we are in the middle of negotiated rulemaking. The sessions are open to the public. I encourage you to attend for more information about the negotiated rulemaking sessions. Please visit us on the web at ed.gov.

But to -- a lot of great information. And if you -- I highly recommend that you read Nora's paper. There's so much to this. This is a very complicated area, and the paper really delves into a lot of detail. We're only going to hit the surface of it here in this short period, but I think it's a very worthwhile paper, and really encourage those of you who have not read it to read it.

But to address your question, I think the most common misperception that people have is that they don't understand just how much flexibility there is when they operate what we call a schoolwide program.

And if I step back for a second just to set a little bit of context, there are two types of school, of Title I programs. One is what we call Targeted Assistance Programs, and that's just what it sounds like. You take money and you give it to a certain set of school, a certain set of students so that you can target the lowest performing students. That's one type of Tile I.

The second is a schoolwide program. And in a schoolwide program you can choose to consolidate, or LEA can choose to consolidate all of the federal money, all of the state money, and all of their local money into one overall pool. Can consolidate all of it.

And then they can use the funds in this one large, overall pool for all of the expenses that the school has from salaries all the way to technology. So in that way, you've broken down the silos, you've got a bigger pool of money, and a lot of the things

Nora talks about in her paper about the great things you can do once you have the money all in one place.

The only restrictions that a school has when it comes to a schoolwide program and spending those funds are two: One, they have to implement the strategies identified in its comprehensive schoolwide plan, so you have a plan in order to have, in order to participate in the schoolwide program; and then second, it has to address the intent, and this is key, address the intent of the federal program that provided the funds.

For example, a school that consolidates all of the funds generally has to show that it's addressing the needs of its lowest-achieving students. That's because that is the purpose of Title I. It also has to address the needs of its English learners because that's the purpose of Title III. And it also to address in this comprehensive plan the needs of its students with disabilities because that's the purpose of the IDEA.

The good news is about 70 percent of schools have schoolwide programs, so that's great news. The bad news is that we do not think many of them understand all the great flexibilities I just talked about a few minutes ago. So why not? What are the barriers to moving forward in this area?

The biggest barrier is misinformation. We hear all the time, and Nora's paper points it out, about the fact that partitioners don't really know about all of this flexibility. That's a problem that the Department of Education is aware of. We participate on the ground, and we talk with stakeholders all the time, and we're working really hard to address that.

So for example, last summer we put out a guidance trying to explain these areas, and we're doing everything we can right now to run around the country and make sure people are aware of it.

But this is also a problem that auditors and compliance driven staff at the SEA make a little bit worse, and we don't attribute any nefarious motive or anything like that. It's just that these are folks who like to be able to track funds from top to bottom, and to figure out exactly where the funds are going even though the statute and the regulations don't require it.

So most are discouraged against funding consolidiation because their budget tracking systems are set up to track one by one. This discourages, as you might imagine, schools and Title I administrators from combining funds because they're afraid of the audit report is going to be. Are they going to flunk the audit report.

So what we would encourage, and Nora's paper, I think, goes to that as well, is to encourage SEA's to encourage the schools to consolidate funds in a schoolwide program so that schools can receive the maximum flexibility possible.

Really quickly, another misconception is that the use of Title I fund even in a schoolwide program is more limited than it actually is. So even sometimes people understand there's a schoolwide program, I have one, it's more flexible, but they still conceive of it as being more limited than it actually is.

The truth is, schoolwide programs are not restricted to using to providing pull-out services. So one of the things people think of in Title I is you pull the kids out, you give them special services to try and address them, and then you put them back in the school.

Sometimes people think a schoolwide program requires that. It does not. It doesn't prohibit it, so if that's what you want to have as part of your schoolwide program you can, but you're not required to do that. So that's more flexibility than a lot of people think they have.

A second is they think they have to use the funds for academic subjects only. And again, that's another misconception, because Title I can be used to upgrade the entire educational program in a school and serve all students even if the school does not consolidate Title I with other types of funds.

I talked about you could put in Title III, you could put in disability. Even if you don't consolidate that way, you still have the flexibility that I just used. You can use Title I money to improve attendance, improve school climate, counteract bullying, provide positive behavior interventions, a lot more flexibility.

The law also allows schools to use Title I programs in pre-school programs. That's another misconception that you can't use it in pre-school. Just last week I was Eagle Academy which is a pre-K through 3rd grade school in Southeast D.C., and they're doing great things, and that's a Title I school.

In closing, I agree that there's a lot of room for Ed to improve its guidance and it's outreach, and we're taking steps right now in order to simplify the guidance for SEAs, LEAs, and Title I administrators. The guidance we put out last year is entitled Supporting School Reform by Leveraging Federal Funds in a Schoolwide Program, and we put that out in July of 2015 of last year. I highly encourage you guys to review that.

The document lays out the benefits of operating a schoolwide program, steps to implementation, Title I flexibility, and it also dispells many of the misunderstandings that I've been talking about this morning when you use a schoolwide program.

Most of the document is going to be very up to date and relevant, I do have to point out that we are engaged in rulemaking on Supplement Not Supplant, so there's a part of that document at the back that you're going to want to make sure you follow our rules to make sure it's still up to date, but a good chunk of it is still very, is very important and helpful right now.

Our ongoing outreach continues to inform the regulatory and guidance process, and we'll continue to do that. Hearing your comments, concerns is of great importance to us, especially now as Nora pointed out, with us being in the rulemaking session.

So if you have -- when you think about, for example, can we consolidate all of our guidance into one spot. Right now we have guidance in a number of different places. The more you talk to us, the more you give us comments about that, the more we can take that into account as we do guidance going forward. And also the interplay between the regulations and the rules that we have at the federal level, and how they interplay with the rules and regulations at the state level is another thing that we would love to hear more about.

So in closing, really excited to be here. This is an extremely important topic, and looking forward to the discussion. Thank you.

MR. TURNER: Thank you. Carol, I pick up on what James just said there at the very end about consolidating guidance because this seems to come up again, and again, and again, and, certainly, Nora, it's in your paper. In fact, you recommend consolidating all of the disperate federal guidance into one federal document. Just shrinking it down into one place. You can go to one place and answer your questions, and figure out am I (inaudible) here? Is this truly supplemental?

And I'm curious, Carol, because you have so much specific experience within districts. How realistic is that, and what would that mean to schools if they had sort of one-stop shopping when it comes to Title I, yea or nay?

MS. JOHNSON: Well, I wish I could say that all you have to do is create one big document and all the problems would be solved in terms of communicating guidelines. First and foremost, I think that it is very hard to find guidance, and people have to look in too many different places, and that's true for educators. It's even true for our Title I directors.

But I don't want a mammoth document that becomes a, you know, just unbearable to manage. And so I think that while it's a recommendation of some consolidation, I think it's really important to look at where the regulations sometimes are more less confusing.

So there are -- and that can be found by looking at, you know, what kind of questions you get. It can be looking at audits. But I think that first and foremost what I see people get confused about is comparability. There are certain very specific areas of the formula that offer, or the guidelines that could be refined in ways and put in place in a much more concise and transparent way so that people could understand them, and then use them more effectively.

I do agree that there are, there are interpretations that make people think that the rules are more restrictive than they are. I think that comes in two ways. People actually do want to make sure at the state and the school district level that the money is going to the students who generated the resources to begin with. And that has not always been the case. And so I think there is some support for trying to do that.

As I think Cory mentioned, I worked in Memphis, in Minneapolis, and in Boston. These are in three regions of the country, and I would say that

Minnesota and Massachusetts as a matter of record tend to be more supportive of education in their state and local monies and some of the revenue that is generated is somewhat based on that. I'll get back to the formula a little bit later. But I think that it is true that what has been really helpful is the schoolwide programs.

And so I'll give you an example. Like in Boston, of about 135 schools, only about five schools in the entire district are not eligible for some Title I services. So in order to be there, you have to have more than 40 percent of your students eligible for free and reduced lunch.

So in other words, only about five schools have out of 135. In Memphis, there are about 200 schools when I was there. There maybe three schools in the whole district out of 200. So almost all of the Title I schools in those districts are schoolwide improvement schools because their poverty rates range anywhere usually from 74 to 80 percent, and you also have some school that are 99 percent poverty.

So the truth of the matter is you have lots of schools, as I think was pointed out, 70 percent of the schools are really schoolwide efforts. And so how then do you go about making sure that you give guidance to people so that they can use the money in meaningful ways?

And I think that the concern I guess I have may be about what the technical assistance should look like not so much from the federal level because I don't feel like the federal guidance has been as helpful, but --

MR. COLE: I'll take a note.

(Laughter.)

MS. JOHNSON: But as a urban superintendent, I have relied heavily, I must say, on the Council of Great City Schools representing the 70 largest districts in the state. They work a lot looking at the policies, and they provide a lot of technical assistance and support to their 70 districts around how to interpret.

But I think the most important thing is not about compliance in terms of technical assistance. It's about trying to help people think outside the box, and it's about trying to connect the research that exists with what you might try. So the early childhood research that Harvard did on pre-K programs was significant both in selling the Board to sustain the expense, and trying to really point out why this expense, you know, paid huge dividends.

I think the President's Commission on Arts and Humanities identified eight schools around the country that had used arts to infuse the turnaround strategy. Again, examples. So if I were giving advice to try to help districts, I would assemble some of the research that ties back, or try to engage the research community as opposed to just people who would help with technical assistance around fiscal compliance.

So I just want to distinguish between technical assistance around fiscal compliance, and technical assistance that would support people thinking very differently, and also elevate some of the research about what is working around the country, whether it's, you know, in some of the turnaround strategies -- Vanderbilt just did a study with the (inaudible) school district -- is trying to connect the research and practice in ways that would help principals and teachers rethink how they use their resources.

Most of the guidance, and here is where I think the federal government could be helpful, most of the guidance is around what not to do, okay, as opposed to giving you a list of, you know, here's a whole bunch of things that are happening around the country, here are some ideas that are really creative that you could try. Then you could follow up with some of those ideas in terms of how that works.

I will say this. I think that being simple, being transparent, we are giving more autonomy and control to site councils at schools. And what's really important is they understand how they got the money, what it's being used for, but all the flexibility. And so we have to create some mechanisms, I think, within the schools and school districts and state for helping people who have parents and teachers think about more creative ways, especially in an environment where the achievement gap between rich and poor students in the United States is largely roughly twice the gap between black and white students.

So the poverty issues are growing exponentially faster, and those achievement gaps require really intentional and creative strategies, I think, for turning things around.

Have I used up my five minutes?

MR. TURNER: I can't read my watch so --

(Laughter.)

MS. JOHNSON: Okay. Well, let me --

MR. TURNER: Throw in one more idea.

MS. JOHNSON: Okay. So I just want to throw in one more idea. This is probably more about the formula though. So Boston has about 58,000 students, and Boston census poverty because it's based on the census, right, is about 20,000 students ages five to 17. So think of this. Boston gets about $39 million. And if you extrapolate the 20,000 students, it's about $1,900 a pupil. And the budget overall in Boston is about 1.2 billion, okay, so you've got 39 million of it coming from Title I, but you've got a budget of 1.2 billion, and $1,900, roughly.

Then you've got Memphis. Over 100,000 pupils, right? About 5,500 of them, 55,000 of them are categorized in the poverty census data, and they get close to $70 million, but their unit amount is about $1,200.

And then you go to Minneapolis with about 36,000 students, and the census in poverty is about $1,400 students. They get about 22 million, and there, roughly, is about $1,600.

So it's not the same, but it's not the same for a number of factors. We've created incentives, in a way, so you have to get the incentive structures right. If a state invests more, and there is a commensurate amount of, am I saying this wrong? You're looking --

MS. GORDON: you're correct. I disagree with the incentive with the way you're describing it.

MR. COLE: We started the Roundtable.

SPEAKER: Yeah, we started the Roundtable.

MS. JOHNSON: Okay. Sorry.

MR. TURNER: So let's keep that because do actually want to get to that. I want to get to (inaudible).

MS. JOHNSON: Well, I just want to say -- just let me close out thought. What we don't want to do as we redistribute, we want to get those census right so that people don't invest less. And there are states who really are not investing very much. They probably have more poor kinds and deserve to have more money

But we have to be careful that we don't create an incentive structure that alters the field of contributions. That's all I'm going to say.

MR. TURNER: Dick, I want to go to you for a broad view, if you don't mind. Title I has been with us for, what, a half a century. Program's changed a lot. Our schools have changed a lot. The kids we're educating have changed a lot. What's different today in terms of how we should understand Title I and how to make Title I more efficient and more effective?

MR. MURNANE: I think there's a number of things that have changed that are really important. The first is the American economy has changed in a fundamental way. In ways that mean that the consequences of leaving school without a strong set of skills are much greater today than they were in 1965. So I think that -- so that's kind of the first point.

The second is as number of people have mentioned, most states now have quite good standards for what kids need to know at each grade level in at least English language arts mathematics. That's important because educators and surveys of classroom teachers indicate they support having clear standards. They are terrified at being held accountable for them before they know how to do that work, but they support the standards, and they do increase clarity on what you want all children to learn.

Third is that I don't think our test based accountability is going away. Under the new law, it's still the case that schools, that school districts and states have to report how well, what percentage of students in each school by subgroup are scoring at proficient levels on reading and math tests. That puts enormous pressure on school principals and superintendents in high poverty districts to improve kids' scores. So we don't need the kind of out, the input based accountability that, as Bobby Kennedy rightly argue in the late 1960s, was important then.

A fourth thing is we know much more about what it takes to improve schools, particularly schools that serve high percentages of poor kids than we did 50 years ago. We know in particular it takes three things. It requires a strategy to relentlessly focus on improving the quality, consistency, and coherency of instruction.

And I think we often don't recognize enough, although Tony's work emphasizes it in a central way, this is a schoolwide phenomena, and just one example. One of the things that is emphasized in Common Core English Language Arts standards is being able to read text closely and annotate text.

Well, you need to do that in science and math as well as in English classes. Well, if each classroom teacher has her own way of doing that, it's not going to catch with kids. On the other hand, if the school has developed a commons set of language, a common strategy, and that's reinforced everyday in every class, kids are much more like to get that.

But that, again, requires a schoolwide focus. So a schoolwide focus on improving instruction, make it more coherent. Second, tracking the skill progress of ever child in great detail regularly. And then, third, having in place a set of strategies to intervene quickly and intensively when children fall behind.

Now we're going to hear about some possible strategies in subsequent panels. So those are all elements of a schoolwide strategy, and I think that supports, as Nora has said, the emphasis in the new law in supporting schoolwide use of Title I money.

But, of course, we also know that that's much, that's tough to do. Just one example. It is not mentioned in Nora's terrific paper, but it's not only getting down to the school district level. It's below that too. I sat in last year in a number of meetings that school principals in Boston have with central office staff on budgets. And I heard staff from the same office, same central office staff responsible for categorical programs, provide different guidance about what was, what schools could do and could not do with categorical grant money. That same district. Same office.

Now, again, part of the explanation is different degrees of staff, of experience and expertise, not so clear state regulations, but this problem that Nora described is enormous.

Now, she and the other speakers have a number of ideas on how to improve guidance and outreach. One thing I would suggest is thinking about that as a research problem, an evaluation problem. There are adverting firms and public relation firms that evaluate all the time whether their strategies of getting the message out are effective.

I think that's a, it's a real problem for the federal government. What should it do to have an impact on the guidance that school district Title I give the individual school principals and how that affects what they do. It's a tough problem because there's many, many layers. But it seems to me, one could think of evaluating a number of possible strategies.

Last point. One disturbing pattern is an increasing concentration of poor kids in schools in which their classmates are also poor kids. Well documented. Now, what are the consequences of that for Title I?

Well, as Nora pointed out, if that concentration is going to continue to increase in this country, and there's no reason to believe it's not, then greater concentration of funds makes sense. Very difficult politically to change.

So what we might think about is what are actions of the federal government in different branches that have played a role in leading to this increasing concentration. Some of it has been housing policies. Some of it had been Supreme Court decisions over the last 45 years.

Should we take those as given? Should we take as given that the kids at the, that the poorest kids in the country have to go to school together? So I would just leave you with that thought.

MR. TURNER: Nora, I want ask you about when I first saw the paper, the thing that caught my attention, first and foremost, and I was just looking at it last night. I just couldn't get my head around it. I saw it up here. The spray chart that to my mind works in the exact opposite direction that anyone who understands very little about Title I would assume that it works, which is to say that the state that has the largest concentration of low income kids also happens to receive the lowest rate of per child funding through Title I. And you saw the states at the top, they're receiving a heck of a lot more money per child than Mississippi, are the Dakotas, I think New Hampshire, Vermont.

Number one, can you just go into a little more detail into how that's possible? And number two, what of your policy prescriptions will help with that script?

MS. GORDON: Thanks. So, as I mentioned, there are four different formulas in Title I. There's a basis grant, which is giving relatively a uniform amount per pupil. And in each state the amount you get per eligible pupil is determined by the average level of spending per pupil, excluding federal funds, in your state.

And so this is what Carol was talking about when she said we want to make sure we don't allow states to roll back on their efforts because as it stands, the current formula if they did so under the current formula, the know they would lose federal funds, and so that could provide an incentive for them to maintain funding.

The number that goes into that though comes from not only funds from the state, but also from local funds, and so the reason why Mississippi is getting so little money for poor people is because they're spending very little money per pupils. And so you could think, well, if you're in a state that has some very poor districts, and also a bunch of rich districts who are spending a lot locally, that's going into that adjustment per pupil, and so you're benefitting and getting more money in Title I because you happen to have those districts in your state driving up that state average. So that's one figure. And that adjustment goes on with all of the four formulas.

The other three formulas are basically ways of putting additional weights on students, depending on the characteristics of the districts that they live in. And the thing that makes the state level graph look the weirdest is the small state minimum which applies to each of the four formulas basically guaranteeing each state regardless of how many poor census children it has in it to get at least some minimum slice of the total pie.

And so that is what's making those outliers with the Dakotas, and Vermont, New Hampshire, you know, getting so much money per poor pupil. I will emphasize though those states don't have a lot of poor kids that's not sucking up most of the pie. And so if you wanted to see a real change in the relationship, I think it's an important thing to reform because it makes it difficult to figure out how much money you're going to get, you know, and this idea of you should know how much money you're going to get, the program's not fully funded, and so you give out the money -- the law says fund at 40 percent of this average state level per pupil. We're nowhere near that. And so you give out the money, and then you have to take off the top from everybody to bring the small states up to their minimum. You also have to take off the top to bring districts that might be losing money based on demographic changes up to hold harmless amounts, and this iterative process makes it very difficult to know what you're going to be getting in the future, and I think difficult for lawmakers to understand. I mean, in assets, right, in the text of the statute it ways, it's hard to understand the distributional implications of Title I. Yes, please explain it.

(Laughter.)

MR. TURNER: Yes, Carol --

MS. JOHNSON: Well, I was going to say that back in the 1970s, as Dick mentioned, there were bigger differences between state, within state districts, right, so since that time there have been a lot of course ordered and financial reform lawsuits that have created less difference within the states, but more differences across states. So that's the first point.

So like within the state, they had to do more equalization across districts within the state.

Secondly, I think I just want to say that I think that while I applause the recommendation about the small state minimum, it's such a minimum amount of money in the big scope of the world that I question which battles you want to fight hardest.

So there are political allies, and political consequences because as is true in Boston or Minneapolis, the clout of some voices, and the marginalization of others is consequential. So I'm not saying we shouldn't relook at the formula, I'm only saying if had a choice of which battle to fight, the small state minimum is such -- and you point out --

MS. GORDON: Yes.

MS. JOHNSON: -- compared to, let's say, the hold harmless provisions. And let me just play it a little bit out. So I'm in Boston. I have two high schools. I notice that one is getting a half a million dollars more than the other one, and I can't explain it.

So I look back across the system and I realize of my 135 schools there are a lot of schools I can't explain the formula for. So we go through this process of creating a weighted student formula. You have a big committee of 60 people. Everybody gives us their imput. There are gonna be winners and losers, right?

And so we introduce it to the principals and the parents and tell everybody we're going to await a student formula. But, as Nora points out, we have this provision where we hold you harmless. Well, we tell people you're going to be held harmless but only for two years, and over that time, we call it soft landing, we'll give you a soft landing. We're going to phase you in. But eventually here's how much money you're going to get because here are the kids you have.

And we had weighted factors, poverty, ELL, Boston and Minneapolis have huge ELL populations, and so we tried to put it in place. I had a parent come to a board meeting, a father. He says but is's so transparent. I totally get it. I see what you are doing. It is very fair. I don't like it because my kids are losing money at my school so I'm against it.

So like even when people know that it's fair, it's more transparent, it's like they can explain it in a PTA meeting to other parents how they get the money they get, why they got it.

Now, it did do one other thing though. Some of my schools that sometimes seem to be resistence to some kinds of kids because our high schools are open-enrollment, right, you can go anywhere, they became so welcoming --

(Laughter.)

MS. JOHNSON: -- of my poorest kids. They would come and say you know, I thought I couldn't take no more kids. I bet I can take 50 more because I know you're closing school A, B, or C.

So, you know, it is true that leveraging resources can have a potentially advantage to getting a more equitable system, but I do want to emphasize that the reason the formula is the way it is is because to get political allies, and that's why the formula didn't change in it's last iteration too.

And the last thing I want to say is this. That just like statewide test scores masks -- the aggregate test scores of a state masks the performance of some of your lowest performing school districts in the state.

When you calculate the formula just based on the state, it masks the implications of the formula sometimes for the poorest and urban districts. And so it's not enough to just aggregate and analyze the data on a state basis. You have to actually look at the state and see the impact on Boston and Springfield. You can't just say here's how it's going to be distributed, because I've looked at some of the runs on another analysis and a lot of the urban districts lose, and again I'm speaking from an urban district perspective, lose revenue even when you think you're trying to advantage them in the formula. You actually have to run the numbers.

MR. COLE: The one thing, if I could just really, really quickly and briefly. I think the discussion we've just heard gives you an idea of how complicated this is, and what the panelists have said is that ESSA, the new law, did not change the formula. It did direct a division within the Department of Education to study it, and we are going to do that, and also issue a report, and so -- a report to Congress.

So we will be looking into this, but it is quite a complicated thing. We just wanted to leave you with that that there is more work to be done --

MS. JOHNSON: And I don't to sound like I'm against her. I think this is great. But I just am pointing out the complications.

MS. GORDON: No. Thank you. May I respond briefly to the small state minimum. I absolutely agree with you. It's not a lot of money. It's not going to help the Mississippis that much to get rid of it. The big problem I see with the small state minimum is that it makes it impossible and hold harmless, the two of them together make it impossible to figure out the distributional implications of the other four formulas, and so it gets into this winners and losers mentality where you have to see the runs to see what's going to happen to your state and your districts, and it becomes very difficult to explain why is it, you know, bad to have certain that might seem reasonable in the formula.

But I would be not at all adverse to saying let's have some other pot of money separate from Title I. Let's say we want to have a rural schools initiative, and we're gonna put some money in that if you think there's a particular problem that the small state minimum was meant to solve other than -- or even not a particular problem, just a political problems.

MS. JOHNSON: Well, I do know that these pieces are interrelated, right, so I think what you're pointing out is when you -- in a finite pot of money, right, when you shift one thing, it does impact other shifts, and so in order to get a more holistic approach, you took all of the formula, all four.

MR. TURNER: Need to go to audience Q&A. First question comes out of something you said earlier, Carol, and I guess this should go to James first, or we can open it up. Whoever wants to contribute here.

In giving federal guidance and other actual restrictions on affirmatively recommending strategies, rather than simply restricting uses. Can you include best include best practices or, you know, sort of template programs that we know work or have evidence to suggest they work?

MR. COLE: One of the things we do, and I'm going to be interested to hear my panelists, one of the things we do when we put out guidance is often use examples, and that's one way to do it to make it clear so there isn't an incredible restriction against it. The question becomes how can we discuss it in a way that's going to be most helpful to 50 different states with 50 different sets of requirements.

We have to be mindful around the federal role in getting into states' abilities to set requirement. We have to think about how the 50 different states communicate their guidance now which is also complicated. And so we have to think about all of that as we think about how to do examples, as we think about how to put forth best practices which may or may not be applicable in certain ways.

So I think one of the things that's very helpful will be during the rulemaking process that we hear more about what can be helpful as we think through how best to move forward in an area where states have a lot of, a lot of flexibility.

MS. JOHNSON: I do hope you will read Nora's paper, but one that she points out that I thought, there were a couple of really good ideas around this topic. One was creating transparency around the communications that gets sent out. So if one state asks a question, having the ability to, with a database to research how many people ask this question about resources to private schools, for example?

And so if several states -- I mean, obviously, there may be some variations, but having that, those examples on line in a retrievable system would, I think, help without worrying about what is the 50-state challenge but if you had that pretty transparently.

Now, I would hope that then the people at the federal level won't be reluctant to put in writing their answers to the questions because it's going to be retrieved by multiple states. But that would be the only cautionary note I would note, but I think that's a really good idea.

And again, her notion about having a single document, or at least a place where you can find everything. Both of those, I think, could help, especially if they were enhanced by there's some positive things, not just what you can't, but what you can do.

MR. TURNER: God another question for Dick or Nora.

What are the best new policy levers in the ESSA for serving ELLs, students with disabilities, low-income kids, especially when it comes to parental engagement or (inaudible)?

MS. GORDON: I think it -- well, we'll see what happens with the rulemaking, but I think it might be with regards to Title I anyway thinking about this new definition of Supplement Not Supplant. And it's not saying these are the three new policy levers available to you. Rather, it's saying here's this money. Go spend it on what you want to spend it on. But this is whatever compliance setup you have around IDEA would be separate and still freestanding.

MR. MURNANE: Just one addition. And again, Carol can speak to this better than I, but in Boston where I spend a fair amount of time with (inaudible) parties, you find that in many schools, a high percentage of the kids are eligible for Title I. They are also English language learners. And they also are eligible for special education.

Each of these programs has its own regulations. So one thing is they've, my understanding is they've done in Boston is that they want new teachers to be certified to be special education teachers and teachers of English language learners because otherwise it just makes the staffing at the school level phenomenally difficult.

Now, I think anything that could bring coherence among these programs and their regulations would be helpful to an awful lot of school principals serving in these particularly challenging schools.

MR. TURNER: I want to ask you one more question, Dick. Coming out of what Carol said earlier about picking your right when it comes to making Title I more efficient, there are lots of things in Nora's paper. Lots of suggestions, recommendations.

If you had to pick your battle, what's the one thing that you would do to try to reform Title I to make it more effective?

MR. MURNANE: What I think, and this is not really a battle, was it, Nora? I mean, I think that, as you point out s eloquently in the paper, you know, the law now provides, and James said it well, for quite potentially powerful uses of the Title I money. The trouble is that message is not getting down to the almost 100,000 schools that get Title I money, and so how to change that is a fundamental challenge.

MS. GORDON: I feel like the more people I talk to about that they say it's a mindset.

MS. JOHNSON: Just another document. It's a mindset too.

MR. GORDON: People have been working in this program for decades. You have program officers, you know, in district, Title I directors, that's been their entire career. They've been a Title I employees, and they don't view it as they are preventing flexibility. They view it as they're protecting this money for the intent of the program.

MR. TURNER: And it's all a diversion.

MS. JOHNSON: I think that there is one provision in the new law that has the 50 pilot sites.

MR. COLE Yes. Yes. around the revenue. Exactly around the revenue. So there is a pilot provision that allows states to look at it from a different perspective. I can't say much more than that, but there is a provision that allows us to regulate and to go forward in that area. And I think Nora's paper talks about that as a way to move forward as well.

MR. TURNER: Dick, last thought?

MR. MURNANE: One issue that does not come up is that my understanding is when you try and figure out how much money is going to each school per student, the challenge is how do you deal with teacher salaries? You know, schools that serve primarily middle class populations tend to have much more experienced teachers. They get paid more.

Well, school districts have fudged on this in terms of whether you could actual salaries going to that school as part of what they get, or only the average salary. That, I think, is a huge policy issue going forward.

MS. JOHNSON: Yes.

MR. TURNER: All right. Well, I think we have to wrap up, but thank you, all of you.

(Applause.)

MR. GURYAN: These are three math problems that I have witnessed ninth and tenth graders in the Chicago public schools not be able to do. Now imagine that you're in a ninth or tenth grade math class in the Chicago public school or any school and you can't do these you don't know how to multiply seven times four and the teacher is spending the class teaching this. That was an incredibly frustrating experience. I know if I was in that situation eventually I would just stop listening. Now think of it from the perspective of the teacher. The teacher is sitting there in a classroom of 30 to 35 kids and there is a huge amount of variation. It is not that every kid can't do that. Some kids can some kids can do the other problems fine but there is a wide amount of variation of what kids know and what kids don't know. And being a teacher in a room where there is that much variation makes teaching very, very difficult. And schools are not just set up very well to deal with variation and the level of kid's prior knowledge and the rate at which they learn it. If you sort of think of how schools are organized you have classrooms and grades and both of them deal really well with everyone is about the same. Classrooms you have a bunch of kids all in the same room being taught by one person, grades everybody moves up year by year. And so what we're going to propose is a possible solution to that problem. So if you sort of think that there's a problem between what kids already know and the way that instruction is delivered to them and a lot of that has to do with the amount of variation in both the level of kids prior knowledge and the rate at which they learn then the solution has to be both individualized and very intensive individualized because kids are at different points in their knowledge and intensive because many kids are very far behind grade level. So a goal of a solution of this would be to help the kids who are really far behind grade level, three, four, five grades behind get back up to grade level so that a system based on classrooms and grades can be more effective and so that classroom teachers can more effectively do their job. So our proposed solution to this is individualized math tutorial program that was designed by Match Education a charter school in Boston and now delivered by SAGA Innovations. Allen Safran and Barbara Allergran are here if you guys have questions for them they're from SAGA. It is a math tutorial program with two on one instruction. So the basic way that it works is it happens in school for a one class period per day everyday. It is a regular class, kids get credit for it, it is in their schedule. If you walk into a classroom there is about 11 or 12 tutors and 2 kids per tutor. Each tutor is at a different table with the 2 kids paired with them and the tutor's that tutor the kids in math and start where they are. So if a kid doesn't understand how to multiply two digit numbers the tutor will work with them at that level and work on at the rate that the kids can learn. As fast as the kids can make progress they will move ahead as the kid's progress. Now we tested this in a randomized control trial study over a few years. I'll show you the results from a study that we did a couple of years ago where SAGA Innovations came into the Chicago public schools. We did a randomized control trial which means that we chose a group of kids that were eligible for the program. We randomly selected some of them to be offered the program and others not to be basically on the flip of a coin and what we found is the kids who were randomly selected to be offered the chance to participate in this math tutorial program had a very significant increase in their math test scores. So over the course of one year the kids who participated in the program improved their standardized math test scores of a magnitude that is about 1/3 the size of the black white test score gap. Another way to think about it is they learned about one to two additional years of math above and beyond what the kids in the control group were learning in year. Another way to think about it is they went from about the 34th percentile nationally to the 42nd percentile nationally so they closed about half the gap between them on average and the average kid in the nation just in one year. The kids were not just doing better on standardized math test scores they also were less likely to fail their regular math class outside of the tutorials. So their math teacher was noticing whatever they were learning in the math tutorial was carrying over to the regular math classes. They were about 50 per cent less likely to fail their math class and the GPA increased significantly. They didn't just improve in their math courses there also were about 28 per cent less like to fail their non math courses. So the kids are doing better in math, they are becoming better students and that is carrying over not just in the math classes but into their other classes. So what we're proposing is that all schools that receive Title I funding would set up a system where every third through tenth grade student who is at least two grade levels behind in math would offer this type of intensive math tutorial, a two on one ratio that would happen in school everyday for the whole year. We talked a lot earlier about Title I and the flexibility that Title I offers. This is something that could be funded with Title I money that the schools already get. Chicago who we worked with was able actually to get a waiver under the old system to use Title I funds to do it but now with the new system and Nora's expert guidance we all know that we don't even need a waiver that there is money to do this. The goal again is to get kids back to grade level and to solve that problem of having kids with who are at a fourth through ninth grade level all in the same room which makes it very, very difficult for a classroom teacher. I know myself and I teach economics classes at a very selective university Northwestern where we have a very, very intensive selection system just to make sure that there is no variation in how much educational background kids have when they get there. It still is really difficult to teach kids because they have variation. In a world where there were many, many more students in the room and there is much more variation it would be very difficult. So our view is that this is something that could be very complimentary to the job that classroom teachers do and can help make their jobs easier and help them be more effective and spend more time on instruction and be able to deliver what kids actually need to succeed.

MS. LYNTON: Thank you Jonathan. I believe Aaron is next.

MR. CHATTERJI: Thank you very much. It is a privilege to be able to share our work here at Brookings at the Hamilton Project. So this is joint work with Ben Jones who will represent us on the panel and it is about learning what works the case study of eduStar. Jonathan started off with a great math problem. I teach in a business school so I'll start off with a picture. This is a picture of my local public school in Durham, North Carolina and it is a

21^{st} century classroom. The problem here is what is missing from this picture. In almost every classroom in the United States what's missing is knowledge of what actually works. We have a lot of content being streamed to our students. Their engaged with it during classroom time but we have no idea what actually proves student learning. You might know that there are a lot of choices out there so on the left you can see the proliferation of apps and digital learning activities to help students learn. But on the right you see the reality which is without knowing what works we're drowning in a sea of apps. If you don't know what content works for the right student at the right time more choice isn't necessarily a good thing. And so when Ben and I started to look at this we said we really can't unlock the potential of educational technology unless we know what works and in the current system students and teachers are being poorly served, they're not getting the best available content. Why simply because we don't know what the best content is. Nobody is doing the evaluation. At the same time think about the other side, the entrepreneurs and innovators many of them teachers by the way who are creating new digital learning tools. There is no incentive to create great products if there is no benchmark. There is no way to sure that yours works better then something else that is already on the market. It is a huge problem in the innovation system. So when you put that all together we're not likely to get the outcomes that we want and hope for unless we change that. Now this might seem like a very technical point something that a data scientist at Google would care about. But for Ben and I as parents and for people who work in education it is actually a huge deal and could be a game changer in education. But even if you're with me until this point you'll recognize a very simple fact rigorous evaluation incredibility time consuming and very expensive. So what Ben and I set out to do is figure out how can we build a low cost platform to rigorously evaluate educational technology and that is what eduStar is all about. We can use that evidence to actually put the right content in front of the right student at the right time. One of the great things that we owe a lot to the Hamilton Project for is that this idea started here in 2012. We proposed this idea on a Hamilton Project panel. At the time it was kind of a high level abstract idea that we were really excited about. What we were lacking was skilled K-12 educators and operators who could actually make this reality. So Power My Learning which is represented here today by Elizabeth Stock, Mark Malaspina and Shawn Con who are in the audience today they took over the implementation in 2013 and since then they've done 77 product evaluations of educational technology.

Here is what eduStar does. It is a platform for doing randomized controlled trials on digital learning activities. We compare head to head and also against a control group and can figure out what works and what doesn't. We're built on the Power My Learning Connect platform so I'll just tell you a little bit about that. Power My Learning Connect already has 40 partner schools and 8 million page views per month.

One really important thing is when you build on an existing platform all the incentive conflicts that usually come about when you try to do evaluations a lot of those become easier because now you're actually building on a platform that people are already coming to use because it is good. So we built on How My Learning Connect over the last couple of years do these evaluations. Now what do we do? So we what Google and Amazon do everyday when they do something called A B testing. We take for example three groups of students. They all take the same three questions that are based on a common core sentence. Then the first two groups of students will interact with a digital learning activity. Maybe something that teaches them how to divide fractions which we'll talk about in a second. The third group which you'll call the control group goes directly to a post assessment. Of course we've designed it so they eventually get the learning activity. It would be unfair and frankly would not work in a classroom if everyone wouldn't get access to the same material. So looking at these three groups we can do some really powerful things. If we run this enough times we can tell you whether the growth in terms of the pre and post assessment means that DLA digital activity one is better than digital activity two and whether they're better than doing nothing at all. That kind of evidence can be a game changer and remember we don’t have anything like this. So when your school district recommends a list of recommended apps that your student should learn that isn't coming from any engine that looks like this it comes from a variety of sources that we can talk about during the Q&A. So let me give you two examples to let you know how these things work and we'll start with the dividing fractions. So it is a common core standard and we can link these to common core standards or any other kinds of assessments that you like. We use the common core because of their use across the states. So there is one really boring digital learning activity called dividing fractions. It does exactly what is says it does which is teach you how to divide fractions. There is another one that I would find much more exciting which is called basketball dividing fractions. Which one do you guys think actually does better in teaching students how to divide fractions? Two. People think two maybe because it has more engagement. We also have two versions of the same product. So a company called Learn zillion produced two different versions of the same product. It is also useful for that too because you can figure out which version works better. In the first version you have a baseline video that teaches you a fundamental math skill. You watch the video; you learn something about that math skill. The second version of this Learn zillion product is the same baseline video with one wrinkle and that wrinkle is they give you a tutorial of common mistakes that one would make doing this skill. Now I'm a testament to the power of being reminded of my common mistakes mostly by my wife but at the end of the day is this actually going to help students learn. So what do people think? Pedagogically do you think it is going to work better when we tell students the common mistakes they have let's say dividing fractions or just the baseline video? Let's see the results. We'll go back to the boring dividing fractions versus basketball dividing fractions. It turns out boring is better. Dividing fractions outperforms basketball dividing fractions. Our basketball players and this is the remarkable part about it they spend five more minutes playing the basketball then our students on the dividing fractions which means they're spending more time and getting less learning. Now if I was looking over my kids shoulder at what app they were using I would think that that was engagement. It turns out that that's actually not good performance. On the second one we look at the video tutorials. Good news for learn zillion is that both of the tutorials do better than doing nothing at all. That might seem like a very modest benchmark but I can tell you doing better than nothing at all is actually really important at tech goal. It is not clear at all that the things we put in front of our kids are actually helping them learn better then doing nothing at all, we don't know that. Now comparing the video tutorials to the ones with the common mistakes, common mistakes does worse. We don't know why yet. That is an interesting opportunity for learning scientists. Why would showing someone the common mistake they make in going through a math problem actually make them do worse? Is it robust other kinds of math skills? These are the kinds of things you can figure out with this sort of platform it is just sort of the beginning. What did we learn from all this? First I'd be remiss if I didn't mention the role of the teachers in the 40 partner schools. For Ben and I sort of getting the feed back through Elizabeth and her team about what teachers think about how this works is incredibly important. The control group design that you just saw that was obvious to many of you who have worked in a school we didn't know that before. Of course the students have to have access to the same content. It wouldn't work if some students never got the content. You can't imagine your kid coming home and saying I didn't learn anything today I was in the control group so we have to do that. That has really helped us align eduStar with the goals of classrooms. Now the platform can also be useful to multiple groups. First students, teachers, parents they're really interested in the consumer reports function the idea of knowing what works and why but content developers like those who make the videos that link the digital activities this is the first time they've had information to do the kind of A B testing that is so important in entrepreneurialship. Finally the education researchers who can go and learn about things like common mistakes and why those might not be pedagogically important. So we have a couple of guiding principles that I'll just finish on here. Evaluation in our estimation based on this experience has to be rigorous, continuous and also conducted by a trusted advisor, a third party often and preferably built on an existing platform. The reason is you don't want to have to draw people to a platform to do your evaluation. You want a successful platform that you can kind of do the test without disrupting the workflow. That is really, really hard to do but we think we have it with our Power My Learning team that is managing this. In the end jus to give you a sense of what next we think it is scale that this could be a game changer in educational technology. We can figure out using these tests what the right content is for the right student at the right time and hopefully it could be a contributor to raising outcomes in education. I'll let Ben take the questions on the panel and thanks for listening.

MS. LYNTON: Pedagogical point of view I'm going to start for a question for Bob and pull us back to the tutorial. You've had a lot of experience with tutoring. How does Jonathan's idea of one on two tutoring conform with your experiences and what new elements does it bring to the discussion?

MR. HUGHES: Well I would say tutoring isn't a new concept and I think you see it across the board. What I liked about the presentation it was the overall process that you engaged in and when you take one step back you have a school that was trying to kind of do better by its kids. It tested a series of different experiments with those kids. You picked up on one that looked particularly promising and then did a randomized control trial on that. To determine whether or not it was suitable is a change package to go much broader. I think building on some of the stuff Tony said we're so often in search of a problem with a solution that we manufactured, I think that this process is very valuable and I think across the country there is an enormous amount of innovation going on in classrooms all the time and I think what we have to start to do ties to the second paper, really starting to build and infrastructure that enables us to evaluate what educators are doing and make some judgments about those issues or strategies or tools that we want to scale. You can build a platform to do that. You can do what you did which was set up an experiment. You can actually use the limitations of government funding to create spontaneous randomized control trials but I think it is really important that we do that but we always do it in the context of this broader creation process that educators are regularly involved in. And then I just have one technical question and I don't know if we're allowed to --

MS. LYNTON: Please, please.

MR. HUGHES: The math that the kids were doing was it Algebra and do you think the tutorial laid a basis ultimately for more complex math that is envisioned by the common core because in our experience anyway in math tutorials the Algebra is something you can do relatively simply once you get to Algebraic thinking and beyond to Trigonometry and some of the other issues it is tough.

MR. GURYAN: This is a great question. I'm going to answer but if Allen and Barbara if I get this wrong you guys can correct me. So and actually the answer has changed a little bit year to year because we've continued to study the SAGA tutoring program and over the course of the time we've continued to study the common core has become implemented so the basic way to think about it is during the 50 to 55 minute period there is some mix of time spent doing what you would think of as basic skills which is meeting kids at where they are which will vary kid to kid and then doing translation or working on the stuff that the kids are doing in their regular math class because this is in addition to their regular math class. So the tutors and the site directors who are running what's going on with the tutors at that particular school are coordinating with the math teachers and the department chair of the math program to pay attention to what is going on in each kids classroom. So it will be a mix as they move to the common core the curriculum and there is a whole curriculum that the tutor's follow. The curriculum has shifted more towards being tethered to what is going on in the classroom around the common core but using that as a way in to build up from the basic skills to get kids to be able to do this stuff that is at grade level. If there are kids that are at Algebra II or Trigonometry they will do that. I've gone and I've watched the tutors in person and sometimes at one table kids will be working on adding fractions and then another table kids will be doing cotangents and c cants. I couldn't even remember what those were and I have a PhD in economics. So it varies and that is one of the nice things about this. It has a lot of features of tracking the individualization of tracking without the downside of tracking which is that if you have a tracking system it is very hard to switch tracks. This is very flexible so kids can in the same room even at the same table you can have one kid doing Algebra II and another kid learning about exponents.

MR. HUGHES: And that would be my final comment which I thought was very nice about the paper was tying it to design of schools that the variation that teachers confront is extraordinary and very rarely acknowledged. So actually thinking through an intervention that builds a little bit on what Tom was saying. A real intervention in real time that enables a young person to be successful in class and assists the teacher in dealing with that variation I think it is really critical when we conceptualize all sorts of different changes.

MR. GURYAN: So one of the things that we found which I thought was fascinating and I'll just take a step back. When I go and I observe this in practice the first thing I'm always struck by is you walk into the room where the tutorials are happening and it is really quiet. If you walk into another math classroom in the high schools where I'm working in it is not always quiet. So it is silent and you look around and for a 50 minute period the kids are doing math for 40 minutes. So in some ways you said this is not a new idea. Basically one way to think about it is if you do math for 40 minutes a day everyday for an entire year you get better at it. So the question is how do you get kids to do math for 40 minutes a day everyday for an entire year. Part of it is the tutors are sitting across the table from them and they work with them and they don’t give up on them. Part of it is these are kids who have been given math problems that they couldn't do for five or six years straight and now someone is giving them math problems that they can do and they realize oh actually this is really kind of satisfying. I can do math I'm not somebody who can't do math and it feels good to do math and when you have that feeling you realize oh I want to do more of it and then you get better at it. I think that is part of the reason why you see effects not just on math but also on the other subjects.

MS. LYNTON: I want to pull us back a little bit to eduStar and direct a question at Jim which also Ben feel free to join the conversation. Jim in your book you're a big proponent of using experimentation to determine what is effective and it is that experimentation and trial and error that is particularly hard in all social policy and especially in education. I want you to talk a little bit about that difficulty and how we can best use experimentation and also thinking about the other panels people talked a lot about initiative fatigue and how we have experimentation that doesn't create additional initiative fatigue.

MR. MANZI: Well let's see. I read the

paper and enjoyed it and thought it was an incredibly positive system. I think that for how you can use it productively in an environment I guess there are probably three simple comments. The first thing is the principles that are laid out are excellent. Certainly the experience in business experimentation is that what we would call moon shot experiments. So analogize in education would be something like we're going to run the RCT which would determine once and for all does classroom size matter are actually less effective in this experimentation then these tiny little tactical changes. On the app do you want to do four times tables and test and five times tables and test or do four times tables and five times tables and then test. And that the goal really is to build technology in business process to radically lower the cost for experiment so that you're doing thousands literally. It is something the size of say roughly speaking a large Chicago school district you're talking like one thousand experiments a year. The goal is you get a little bit of advantage here and a little bit of advantage there and the expression is you build a mountain with pebbles. In the total you can build advantage so I would say that is one way to help make it practical. A second is a couple of things I would probably think about in terms of the eduStar approach is one online experimentation like on websites has really gotten pretty sophisticated and there are the technology to design, interpret and action in market randomized experiments has gotten good. It is advancing pretty rapidly. In 6 month increments you'll see significant movement in state of the art. So a lot of the kind of next step we want to take this offer to be able to do this, this and this you can go get commercial software. So I would think about importing software technically rather then the expression is you get on the capability escalator which will generally crush a handful of guys doing a home brew solution. The second suggestion I would think about is one of the things I haven't heard talked about a lot and I may be wrong but I don't think it was mentioned the paper is replication. I would think about at least consider adding a principle which is reliability requires replication. That's not only because of you want to avoid the whole mess that like social psychology is in which is you have all kinds of problems but actually the great weakness of using experiments to change policy decisions in business or anywhere else is the problem with external validity. So in practical terms I do this test and I find oh it is better to do the four times and test then the five times and test then the reverse. And the reality of course I build up some kind of response surface like if you have red hair and you're born on Tuesday and you're doing this in the morning on a weekday you want alternative A and if you have no hair, brown eyes and you born on a Thursday and you're executing the program on a Saturday afternoon you want to do the reverse. That response service itself changes over time. So you did the experiment in April and you've proved that out, it is now October 19 and you're using it to take an action but it turns out that the whole population of students has changed on you right? Some people aged out, some people aren't there, new students joined, it is not clear that the cause and relationship you found holds in fact it usually changes. In fact and unfortunately almost always changes in a pernicious direction which is it goes away. So the expression in business experimentation is ice cream melts. As soon as you find some tasty causal insight that you can use for a decision advantage including the ones we just saw it might take days, months or years but you need to keep replicating to test how that is going on so I'd add replication. The third thing I'd say is if you think about the experience that the way it works by various distribution channels. So in a direct distribution channel like we just saw like webs you've got the education authority, you've got some software and a screen and then you've got the user on the other side. That is a direct channel. That is the most benign possible environment to run these experiments. First of all you can get large sample sizes cheaply and second you don't have human beings in the loop to execute the program and a good rule of thumb in experiments is humans suck. So indirect channels or institutional channels here would be like I have the education authority and then I've got a district superintendent and buildings, teachers and classrooms and all kinds of stuff. In that environment it is much harder to run experiments but actually it is where 99.9 per cent of the weight of resources are. The third thing I'd say to make it practical is figuring out how to take those principles and apply them into institutional settings.

MS. LYNTON: Maybe I'll let you respond.

MR. CHATTERJI: Well that is a great set of insight and advice and we certainly don't want our ice cream to melt. So I think just to pick up on one element of what you're saying which is external validity one way to put that is let's say you do an experiment and you do it in one school system with one set of kids who are at a certain level of proficiency and it works really well. Does that generalize to other students other times of year to your observation but students who are more or less proficient at that skill already et cetera. So you can get at that by running the experiment again but also having a very large user base. So students across many school districts coming from very different backgrounds. One piece we have built in is because we have a pre exercise. We see the kids who are already doing very well at a task before they even get this tool versus those who get everything wrong or somewhere in the middle. So we can begin to detect whether a given piece of software say works on average well or does it really work for the kids who are really far behind or the kids who are far behind get nothing out of it but the ones in the middle really get a big gain and that gets not only to external validity which is what generalizes it but it also can get to personalized learning or course. The answer may not be this is the best program for dividing fractions. It may be that this is the right tool for dividing fractions or the right video et cetera for the kid who really has no idea what they're doing but this tool over here is the one for the kid who is kind of mostly getting it right already but needs to improve. All of that I think is replication testing across different student populations, looking for these what I call heterogeneous treatment effects, personalized learning based on the status of the student at the time. All of that is facilitated by scale so one of our big challenges now going forward is we sort of have a pilot and proof of concept and we've got some really nice tools developing that learning has developed. The next question is how do we extend the user community over time so that we can do these and get at that kind of evidence.

MS. LYNTON: Russ I want to ask you a question you've had lots and lots of experience looking at these kinds of analysis and experiments in education and maybe going from this very micro to something we're working on prospectively to looking back historically. Can you talk a little bit about what have been some of the successes and what have been some of the challenges in experimentation like this that has been done?

MR. WHITEHURST: I'd like to say first that when I came into the US Department of Education in 2001 to head the research office we could find the history of randomized trial that had been sponsored by the Department and one that was on going. The funding streamed university researches funded no randomized trials at all. So here we are 15 years later and I'm on a panel where people are talking about the best way to do randomized trials, that's progress. I think there are a number of challenges here and I'm very excited about the work both substantively and in terms of evidence agenda. One of the factors that I think shouldn’t be lost here and one that concerns me a lot is what is the motivation for the learning that comes from using these tools. I think there is an assumption. I brought it with me to my research career that if you find out something that works they will come. I don't think that is true now in hindsight. We have the education system that doesn't really have, if it has a clear bottom line it is understood differently by different people. So why should I be concerned that the kids are who get tutored do better and who is concerned about that and who wants to invest in the next experiment that will make that better? I think that is a smaller population then we think. I'm not sure what the answer is to contingencies I mean no child left behind was an attempt to bring them down from the top and make them totally test score based at the building level I think there is clearly deficiencies to that. But I don't know that turning control back to local school districts and states and saying go at it you'll do a lot better than the last time we gave you the reigns to control is going to work either. So what is it that motivates people to want to find out which software product works best to go look at a resource to pick the best one and move forward? I'm not sure unless we have ways that make individual teachers and individual principles care about those results and getting better. So we need metrics, we need accountability and I think we need to think about that part. Also it is an interesting contrast here between these two presentations. One was really quite micro and in a sense close to the kind of work that Jim Manzi's company did in terms of business analytics and A B comparisons. It is like Google deciding so how big should the ad be on the side and let's try two different ways very quickly and we'll find out. That is suitable to certain types of software design issues. The other study we saw is one that took a couple of years to put in place and will be most powerful when we find out high school graduation and college going rates. It is a very different type of enterprise. We need to honor both of those and support them because both of them are important to solving the puzzle of going forward. I think finally on the micro side of eduStar I think the powerful use of the quick turn around A B trial for software is not necessarily going into a school district and convincing it to try software A versus software B. It is to embed that capability into the product itself so that the product is constantly improving itself you don't need the permission of the district to improve your product it is just part of the design feature of the product and so it is whether version two of product A works better than version 1.8 of product A and to do that constantly for educational software I think will get us where we need to be much quicker then the kind of product brand A versus brand B comparison. If you want to see the governments effort to do that go to the What Works clearing house where it is full of brand name data and I think that is valuable but it is not ultimately valuable is the job is to make it better.

MS. LYNTON: I think there is one follow up questions that came from the audience about the clearing house. Has that clearing house made a difference? What would make it more useful? And then I know on the previous panel in discussing Title I and discussing what information needed to be disseminated Carol spoke about the fact that it is not just how the money can be used but urging people to for better dissemination the research that's out there. I wonder again if it is a lack of information like the Title I funding.

MR. WHITEHURST: Well yes I think the clearing house has been valuable if it has done nothing else it has established a very clear set of rules for what constitutes rigor and research. People look at that and they're worried that if they're a researcher into a study it won't be approved by the clearing house. In the early years it was called a nothing works clearing house because there was a lot of research there and nothing worked. I think that is not true anymore. There are over 100 studies there that show positive impact with well designed trials. I think what could make it more useful is first having a motive for people to care what is in the clearing house. We don't have that and then I think the issues that Jim Manzi has talked so eloquently about are critical. We can't be proud of having funded 300 randomized trials over five years. We need 10,000 trials in a year to take advantage of the fact that it is fundamentally trial and error. The error rate is going to be 90 or 95 per cent. If we don't have a lot of it the yield is not going to be sufficient to move us forward.

MR. GURYAN: One thing that has come up a couple of times was sort of how the research gets disseminated and how people learn about the results of the research. And also you asked a question earlier about intervention fatigue. One of the ways that we at the Urban Education Lab have sort of dealt with both of those issues is that we think of the Chicago Public schools and the other school districts that we work with as our partners. So we don't go to them and say here is something that we think would really work can we just test it or here some thing we that we think we can get published in the American Economic Review can we test it. We work with them to figure out what problems they want to know the answers to and then we find overlap of things where we think we can help them find the answers and that we're interested in ourselves and the things they want to know the answers to. And so in doing that we develop the study together with them and that means the implementation I think works a lot better but it also means that when we find the answer they want to know. We already have one very big school district who wants to know the answer and then once they find the answer other school districts want to know as well. Another thing was I had heard this thing about the nothing works clearing house it is actually quite useful to know what doesn't work. A school district that has a very limited budget it is actually more useful to know that some of things they're spending money on is not very effective and that frees up the budget constraint and they can try other things. The last thing is there is this perception that randomized control trials of this sort that I'm talking about are really expensive and it is true that there are big budgets to fund randomized control trials but a lot of times that is because the budgets are funding the intervention itself or data collection to try and measure the outcomes to see whether the thing worked. We're able to do a lot of the work that we're doing in Chicago and New York City and some other places at lower cost because those places themselves have really good data systems where they've collected administrative data so we don't have to raise money in Chicago to be able to measure the outcomes that we look at they already have collected that data. So the randomized part of the trial is free. It doesn't cost anything and I'll do it for anybody. I'll randomize whatever you want to do, I'll donate my time. The randomization is free. It is the other stuff around it which we would have to pay for anyway to do a study or even just to do an intervention that costs all the money. I think the work that you did Russ to encourage the ROCT's and education is incredibly important and I think we should do more of it. But I think sometimes people get scared off of it because they say A it is going to take a long time and B it is really expensive. The long time thing again partially because we have this ongoing relationship with Chicago it took awhile to get our first set of results but now we always have new results coming out and we're always starting on something else replicating the old one or starting something new. So there is this stream of information that comes out that can be sustainable and you don't have to think of every study is something that you're investing in and you're not going to find out the results for awhile.

MR. WHITEHURST: I just have a quick follow up. The administrative data is critically important here because nearly all the costs are connected with collecting outcome data. The federal government has not invested a half billion dollars in 46 states to fund state wide longitudinal data systems that have micro data on individual kids in every public school in the state. Most large districts have data warehouses. It is still extraordinarily difficult to get in to any of that data unless you have a personal relationship with a state official who can unlock the key. That's a federal policy issue at least at the state wide level. The federal government paid for it one of the requirements of the legislation would that it be available for research. We need to unlock those safes and let people in. It is just not the partnerships that we need as they're extraordinarily valuable. It is the people from outside who have some serious critical question about what a district is doing and should be able to independently get at the data and say well you've been telling us this works and it doesn't. That is a very important part of what need to do going forward.

MR. CHATTERJI: Let me just build on these comments. This is what I've come to call operational ROCT's. And I think the key is and this applies to education or any organization the government itself, any business. The trick is if you're going to deliver a service anyway can you build evaluation into it in a rigorous way? So in our case with eduStar these kids are going to be in front of a computer anyway. They're going to be spending time and they're going to be given some digital tool. So is there a way in the course of that instruction to learn something about how to do that. All these cases can have these features. Because if you do it that way you lower the cost as we're saying about doing the ROCT. The other thing by lowering the cost of course that's when you get to do a lot of these things. The education landscape is very complicated, it is big, and there are lots of features on it. But we're delivering programming all the time and how can we deliver that programming in any way on a dimension where we're actually learning something and not just delivering. I think if we can get that philosophy and of course the internet and administrative data and database systems are facilitating our capacity to do that in ways we didn't have before. I think if the What Works clearing house in 2001 was sort of a bold idea that ROTC's matter if we can hitch on to the technological ideas that are happening in schools and elsewhere and think about a philosophy of delivering but learning at the same time. I think our chance for improvement and the rate of improvement just go up dramatically.

MR. JONES: I would just add one thing which is I do think it is important to choose problems yes we need independent evaluation but also to choose problems and focus on the day to day themselves. So I just want to echo that notion that in the macro world there is a hidden complexity to schools and you can choose the programs or ideas that aren't necessarily going to matter to teachers and principles. When you stop and think about a school of 400 students there are 30,000 lessons delivered at that school at any point, 9,000 administrations in New York City on an annual basis. About 4, 708 credits to track, 300 individual courses and titles, 250 teachers teams and 200 teacher observations. That is the day to day life of a practitioner in a 400 student New York City public school. So I think we have to actually start to understand the real conditions in school and then craft these types of ROCT's that deal with the big problems first before we get to micro problems. We will build an audience for that if we get some quick winds with practitioners early.

MS. LYNTON: This is question Russ you brought up longitudinal studies but it is really a question for anyone on the panel. In addition to the enormous complexity that happens each day you also have each child from kindergarten to twelfth grade. These two interventions that we saw were really focused especially the tutorial focused on the kids in high school with this theory that it is not to late. We have right now so much focus on universal pre-k. I wonder whoever would like to volunteer to speak a little bit about interventions at different ages.

MR. WHITEHURST: We actually don’t know much I think about there are very strong assumptions that the dosage effect is going to be much larger the younger you start. There is not an unreasonable assumption. The empirical basis for that is really quite weak and the challenge I think should be to meet kids where they are as both of these interventions are trying to do and not write them off because they didn’t get universal pre-k which by the way no president of the United States has ever had. So there are opportunities at all points in the life span to intervene and I think one of the lessons here particularly from the tutoring is that the idea that it is to late is fundamentally wrong. A lot can be, the brain doesn't stop growing until you're dead and there is plenty of opportunity to effect kids, students and families for the better where you find the needs they have.

MS. LYNTON: Jonathan I know you want to respond. I also have a lot of questions about the tutors. Their training, how they're selected, how you can scale up.

MR. GURYAN: Okay so let me just say quickly I want to just echo what Russ said which is that when I give the longer version of my presentation I start off with this idea that there are these big achievement gaps that have persisted for a long time in education and we haven't made much progress over a long period of time and that has led lots of people to wonder whether why those achievement gaps exist and if you sort of think about it long enough you come back to poverty and then you start to think well the effects of poverty are long lasting and growing up in neighborhoods of violence and deprivation et cetera over a long period of time leads to outcomes like high school drop out, involvement in crime et cetera. And that if you start thinking about that as somebody who is interested in policy you start to think well okay so in order to narrow achievement gaps I now have to rid the world of poverty. And that is a really depressing thought as a professor who studies policy. Not because I don't want to rid the world of poverty I would love to do that but if that is a necessary condition then we're in big trouble. I think that is some of the type of thinking that has led to this idea that we have to intervene early and I'm all for early intervention. I do research myself on the long term effects of early life conditions but I think that type of thinking has led in the policy world to this belief that if we don't intervene early that by the time kids become adolescents it is to late to do anything. I think that that is to pessimistic and I think it is wrong. I think our paper we think of it as a demonstration of that being wrong. We just have been aiming at the wrong targets. It is not that it is impossible to intervene effectively once kids become adolescents it is just that the things we've tried and studied just haven't happened to be the right solutions. As far as the tutors many of the tutors are recent college graduates from good selective universities who want to spend a year or two doing service. They are interested in potentially going into the classroom maybe but not sure that they want to be a classroom teacher right away. So if you think of somebody who is contemplating doing Teach for America but the idea of being a classroom teacher at that stage of their life without any experience is daunting. Some of them are older career switchers. Some of them come from other situations. There is a wide variety.

MS. LYNTON: Jonathan there are a lot of questions about whether people are bilingual and if that was necessary and if there is a place for peer tutoring.

MR. GURYAN: Yes so in Chicago the schools that we're in there is a mix, so most of the students in the program are African American and Hispanic. So in the schools where there are more Hispanic students more of the tutors are bilingual. There is a mix in terms of racial and ethnic backgrounds of the tutors. There is a rigorous selection process that SAGA does to both recruit and then select the tutors so they all have to take and pass a math test. They all come in and do tutorials with the students in the schools and are observed doing the tutorials by the administrators of SAGA but also by the current tutors to see whether they think they would be someone who could do this job well. One of the things that SAGA talks a lot about when they're selecting the tutors is it is important that the tutors are someone who believes that everyone can succeed. Because a big part of the job is, if the kids come in and you think of somebody who is at a fourth or fifth grade level of math and you start throwing math problems in front of them many of them have this mindset that they're just like I'm not good at math so you have to break through that. So being persistent and believing that you can do this just stick with me that is very important.

MS. LYNTON: Russ we have one question here and I know you've expressed it already but I have to read it. Can we more effectively get the fragmented US education system to pay attention to evidence?

MR. WHITEHURST: I think we can but again it goes to the motive to pay attention to evidence. I have a pet policy prescription here which sound probably more conservative then I am and we'll go back to the Title I funding. Imagine rather than a district getting Title I money which they then can give to 80 per cent of their schools. The Title I funding and the state funding and with incentive the local funding was attached to the child with a weighted formula and the parent could shop for the school at which they wanted their child to enroll that gets the tuition. We just heard in the previous panel how high schools that previously didn't want poor kids are now saying could we have 50 more. I think to the extent that we could encourage parents to pay attention to evidence and I can think of ways to do that it would drive those who are providing the service to the parents to try to be sensitive to evidence as well. It is at least a theory of action.

MS. LYNTON: Managed care of education?

MR. WHITEHURST: Well it certainly would be managed but as the state and the district would certainly be responsible for setting a lower bar. You don't want people to be able to eat at restaurants that give them poisoning, you don't want to send your kids to schools that damage them educationally and somebody needs to be involved as they are and ensuring there is a good supply that you encourage people into the market and that you shut down core providers. Certainly somebody has got to provide the shopping information. I can go on Amazon and I want to buy a watch band which I bought last week there are thousands and there is information about them. If I want to shop for a school for my kid I'm in the dark. So there are roles there and it is not quite managed care but it is managed it is not free and open competition.

MS. LYNTON: The last question is for Jonathan. We have a lot of questions about the scalability and I know it is in the proposal but not everyone has had time to read it and maybe you can briefly discuss that.

MR. GURYAN: So this is the thing that we're currently studying actually and we've proposed scaling it up to a fairly massive scale. One way to think about it is that SAGA has worked very hard to sort of distill down what the components are to the program so that if you go into a SAGA tutorial room in any different one of the schools that we go to when I walk in it looks exactly the same. There is a standardization of what happens not just in a classroom but minute by minute. There is a recipe and I think that makes it something that is potentially more easily scalable then other programs. The other way to think about it is that as they scale or as other non profits that were well run would try to scale a similar model there are inputs that they would have to get lots of and the main one would be the tutors. So one way to think about it is how scalable this is as a question about how easy would it be to get the 10,000, 50,000, and 100,000 tutors you'd need every year to do it on the scale that we're proposing. To be honest we haven't tested it at that scale so we don't really know. We're developing methods to try and learn how things would work at very large scales without having to do it. A couple pieces of evidence, one is that when SAGA tries to hirer at the scale that they're hiring they get far more applications of qualified people then they hire. So they are turning people away. So they could scale up certainly relative to the scale that they're at. The other is that and I think this is one of the insights you sort of said earlier that tutoring is not a new idea that is certainly true and tutoring has been around for a very long time. One of the insights I think here is that the job of a tutor is very different and much more simple then the job of being a teacher. So what that means is there are far more people who could be an effective tutor right now then who could be an effective classroom teacher right now and turnover is not such a big problem because the tutor's become fairly effective fairly soon. It doesn’t take the three years it takes to become and effective classroom teacher. You can do it for a year and be effective the first year. We tested it, we did the randomized control trial with tutors who was their first year of tutoring and they were incredibly effective. So that just means that we don't need a pipeline, a whole system of educational ed schools to train tutors you just need people who are willing to take one year to do something like Maricore or City or Teach for America and do this and there are probably a lot more people who could this and be effective then something then Teach for America.

MS. LYNTON: I want to thank all of our authors. The papers are available outside together with 14 Economic Facts on Education. Many are very sobering. There are few points of light within those 14 facts. I want to thank our panelists also from all three panels, the folks at Hamilton and most especially our audience for joining us, thank you.

* * * * *

CERTIFICATE OF NOTARY PUBLIC

I, Carleton J. Anderson, III do hereby certify that the forgoing electronic file when originally transmitted was reduced to text at my direction; that said transcript is a true record of the proceedings therein referenced; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were taken; and, furthermore, that I am neither a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

Carleton J. Anderson, III

(Signature and Seal on File)

Notary Public in and for the Commonwealth of Virginia

Commission No. 351998

Expires: November 30, 2016