
Committee Meeting

of

JOINT COMMITTEE ON THE PUBLIC SCHOOLS

*“Presentations will be made addressing the Common Core Curriculum Standards
with emphasis on STEM and the Next Generation of Science Standards”*

LOCATION: Committee Room 11
State House Annex
Trenton, New Jersey

DATE: May 15, 2012
2:00 p.m.

MEMBERS OF COMMITTEE PRESENT:

Senator Ronald L. Rice, Co-Chair
Assemblywoman Connie Wagner, Co-Chair
Senator Linda R. Greenstein
Senator Donald Norcross
Senator M. Teresa Ruiz
Senator Diane B. Allen
Senator Samuel D. Thompson
Assemblyman Ralph R. Caputo
Assemblyman Ruben J. Ramos Jr.
Assemblyman Benjie E. Wimberly
Assemblywoman BettyLou DeCrocce
Assemblyman Scott T. Rumana
Assemblyman David W. Wolfe



ALSO PRESENT:

Melanie M. Schulz
Executive Director

Sharon M. Benesta
Chief of Staff

Meeting Recorded and Transcribed by
The Office of Legislative Services, Public Information Office,
Hearing Unit, State House Annex, PO 068, Trenton, New Jersey

TABLE OF CONTENTS

	<u>Page</u>
Dana Egreczky Senior Vice President Workforce Development, and President New Jersey Chamber of Commerce Foundation	7
Roberta Schorr, Ph.D. Associate Professor Department of Urban Education Rutgers-Newark The State University of New Jersey	41
Carlo Parravano, Ph.D. Director Merck Institute for Science Education	54
APPENDIX:	
Testimony submitted by Dana Egreczky	1x
Testimony submitted by Roberta Schorr, Ph.D.	13x
Testimony submitted by Carlo Parravano, Ph.D.	29x
pnf: 1-41 rs: 42-83	

SENATOR RONALD L. RICE (Co-Chair): Good afternoon.

Good afternoon to those who are out there. Let me welcome you for sitting in on this meeting.

My name is Ronald L. Rice and I'm the State Senator representing the 28th Legislative District. I'm going to have my members introduce themselves.

This is the Joint Committee on the Public Schools, which was established by statute. This Committee consists of members of both Houses of the Legislature and both parties of the Legislature. And in summary, our mission is to oversight the court's Abbott decisions and the non-Abbott districts that come under court mandates, and the statutes which we operate by.

This Committee does not do legislation; we don't vote on legislation, but collectively we can recommend legislation to the various committees that are responsible for education, and maybe appropriations, etc.

Today, under statute, we are long overdue-- The statute that requires that the Speaker of the New Jersey General Assembly, as well as the President of the New Jersey Senate, provide the names of the members who would be appointed to this Committee. The members you see sitting around us today are the members of this Committee; some of us have been here for some time, and we have a lot of new members.

So with that, before we start the meeting and turn it over to the Executive Director, why don't we have -- we can start on this side -- the members introduce themselves for the record.

ASSEMBLYMAN WIMBERLY: Benjie Wimberly, Assemblyman, 35th Legislative District.

ASSEMBLYMAN WOLFE: I'm David Wolfe from the 10th Legislative District; Ocean County -- northern Ocean County.

ASSEMBLYMAN RAMOS: Ruben Ramos, 33rd District, Hudson County.

ASSEMBLYWOMAN DeCROCE: BettyLou DeCroce, 26th District, Morris, Essex, and Passaic counties.

ASSEMBLYMAN RUMANA: Scott Rumana, 40th District.

ASSEMBLYMAN CAPUTO: Ralph Caputo, 28th, from Essex County.

ASSEMBLYWOMAN WAGNER: Connie Wagner, 38th District, Bergen and Passaic counties.

SENATOR NORCROSS: Don Norcross, 5th District, Camden and Gloucester County.

SENATOR ALLEN: Diane Allen, 7th District, Burlington County.

SENATOR RUIZ: Teresa Ruiz, 29th District, Essex County.

SENATOR THOMPSON: Sam Thompson, Middlesex, Monmouth, Burlington, and Ocean counties.

SENATOR GREENSTEIN: Linda Greenstein, 14th District, Mercer and Middlesex counties.

SENATOR RICE: Okay, thank you very much.

At this time I'm going to turn this over to the Executive Director, Melanie Schulz, for the purpose of holding the elections for the co-chairs of this Committee.

Once again, by statute, we are required to have a Vice Chair and a Chair. What the Committee did several years ago, because we do represent both Houses of the Legislature, we decided to have co-chairs, one from each House. And that is where we are today.

With that, Melanie, why don't you take over this meeting for the purpose of elections and reorganization.

MS. SCHULZ (Executive Director): Good afternoon.

I would like to call for nominations for co-chairs.

ASSEMBLYMAN CAPUTO: My name is Ralph Caputo from the 28th District. I'd like to place in nomination the name of Senator Ron Rice as Co-Chair, and also Assemblywoman Connie Wagner from Bergen County.

MS. SCHULZ: Do I hear any other nominations?

Senator Allen.

SENATOR ALLEN: Yes, I'd like to nominate Assemblyman Wolfe.

MS. SCHULZ: Anyone else? (no response)

Okay, I'd like to--

SENATOR GREENSTEIN: Is it appropriate to second one of the motions now?

SENATOR RICE: We need a second; have to get a second.

SENATOR GREENSTEIN: Because I'd like to second the Rice and Wagner--

ASSEMBLYMAN WIMBERLY: Second.

ASSEMBLYWOMAN DeCROCE: I'll second the Wolfe nomination.

MS. SCHULZ: Anyone else? (no response)

Okay, I'd like to close the nominations.

Is there any discussion?

Assemblywoman DeCroce.

ASSEMBLYWOMAN DeCROCE: As you all know, I'm new on this Committee -- Joint Committee -- and earlier we had a discussion about the co-chairs. And the question that I asked was the fair representation of urban and suburban school districts, which we did discuss that, and felt that there was. With that being said, I felt that, and I feel that, Assemblyman Wolfe, being on the other side of the aisle -- it would show that both sides are working together and it would be a fairer balance. So that's the reason why I second the motion for Assemblyman Wolfe.

Thank you.

MS. SCHULZ: Anyone else? (no response)

All right, so we will now take a vote.

All those who would like Senator Rice and Assemblyman Caputo--

SENATOR RICE: Not Caputo; Connie Wagner.

MS. SCHULZ: Oh, I'm sorry. Assemblywoman--

ASSEMBLYMAN CAPUTO: I would throw out my nomination.

MS. SCHULZ: That's great. (laughter)

SENATOR ALLEN: I wonder if we shouldn't--

ASSEMBLYMAN CAPUTO: I yield to the lady from Bergen County. (laughter)

SENATOR ALLEN: I wonder if we shouldn't be voting on them individually.

MS. SCHULZ: We can do that.

ASSEMBLYMAN CAPUTO: I think that's the sensible thing.

MS. SCHULZ: All right.

So those members who would like to vote for Senator Rice, please indicate.

Senator Rice has 11 votes, I believe. Is that correct? Did I see everybody?

Okay, those who would like Assemblywoman Wagner.

Okay, eight.

Okay, those who would like Assemblyman Dave Wolfe.

Senator Rice received 11-- Anyone else? I mean, I think everyone has voted.

Senator Rice received 11 votes, Assemblywoman Wagner received 8 votes, and Assemblyman Wolfe has received 5 votes. So our Co-Chairs will be Senator Rice and Assemblywoman Wagner.

Welcome; thank you.

I'm now turning the mike back over to our Co-Chairs.

Senator Rice.

SENATOR RICE: Thank you very much, Melanie.

Let me, first of all, thank all the Committee members for their votes (indiscernible) co-chairs. Let me also say I do understand the issue raised. We are a bipartisan group; we worked that way in the past under the leadership of Assemblywoman Voss and Senator Ewing. And we will continue to do that as a majority here. I've represented both Houses in

order to (indiscernible) New Jersey in good faith, and I think those of you who know me know that that's the case. But I also know that if you call us, there are those of us who will travel and give up the time to come to your district to hear from our constituency base and to address issues as best we can from this Committee. So that's important, too.

Before we get into the agenda I think it's only appropriate for the Co-Chair, Assemblywoman Connie Wagner, to say a few words. And then we'll go on from there.

ASSEMBLYWOMAN WAGNER: I would just like to-- I'm happy to be a part of this Committee. I am a member of the Higher Education Committee, as well as the Education Committee, and I'm Vice Chair of Labor. But more than that I have spent 37 years of my life in education as an English teacher and a guidance counselor; therefore, education is my whole life. So I'm eager to work with everybody here to see if we can come up with some good policies and understand the issues which face our students of New Jersey.

And I thank everyone who voted for me, and I look forward to working with each and every one of you on the Committee.

SENATOR RICE: Thank you very much.

I believe before we bring up the speakers who are here today, there's some administrative things that we must take care of.

MS. SCHULZ: Yes. In your packets, but previously sent to your district offices, was a request that I had put in. We are in desperate need of new computers in our office. Our computers are constantly being repaired by DMU, and so I had asked OLS to put together a packet for me with a price quotation. And we can purchase two computers -- \$938.89 a

piece -- so it would be under \$2,000, and we could get two computers for our office. I would ask you to please vote in the affirmative or indicate that this would be okay.

Is there any discussion? Did anyone have any questions? (no response)

SENATOR RICE: Anyone have any questions? If not, I'll entertain a motion.

SENATOR THOMPSON: Motion.

SENATOR GREENSTEIN: Second.

SENATOR RICE: We have a first and a second.

All in favor acknowledge by saying "aye." (affirmative responses)

Okay, let the record reflect that this was approved.

MS. SCHULZ: And I thank you all.

SENATOR RICE: Any other administration?

MS. SCHULZ: That's all.

SENATOR RICE: Okay. Who is our first guest?

MS. SCHULZ: Our first speaker is Dana Egreczky.

SENATOR RICE: Okay, why don't you bring her up.

MS. SCHULZ: Our first presenter today will be Ms. Dana Egreczky from the New Jersey State Chamber of Commerce.

D A N A E G R E C Z K Y: Is that on now? (referring to PA microphone) Oh, it is.

Good afternoon, everyone. How are you? I'm pleased to be here. My name is Dana Egreczky; I'm with the New Jersey Chamber of

Commerce. And my job at the Chamber of Commerce is actually all about workforce development.

Just a little bit about my background: I was a teacher -- a public school teacher -- here in New Jersey and in Pennsylvania for 16 years. I taught science in grades 6 through 12, whatever kind of science they needed from me. I carry a comprehensive science certification, so I did spend many, many years in education. I left teaching to become a corporate trainer -- I actually taught computer technology for a number of years. And now I have the great pleasure and privilege of working with the Chamber of Commerce and our business members to help create the workforce that our companies need here in New Jersey.

And, of course, today it's all about jobs and can we generate more jobs, and if we do generate more jobs will there be the people that business needs to hire?

So today I'm here to give you a quick presentation about employers' needs and perspectives on the skills that we need.

First, a little bit about the Chamber: We represent the business community. I actually report to a Board of Directors that consists of over 70 CEOs and presidents of the state's most-prestigious large and small companies. And our members together-- Our members employ about 6 million New Jersey citizens.

Business tells us consistently -- and not just here in New Jersey, but across the county -- that workforce quality is among their top three issues. It always ranks in the top three; sometimes it's second, sometimes it's first depending on the economy. But the quality of the workforce is one of the most important concerns that businesses have. In fact, all the

projections say that we will have plenty of jobs, but they're going to be jobs that will require specific skills. In fact, in just a few years -- 2018 -- the United States will need 22 million new bachelor degree individuals to fill the jobs that we will have. That doesn't mean to fill the jobs that people will be leaving behind as they retire; that means 22 million new jobs. Each of those jobs will require a bachelor's degree in something. And our projections are -- and the national projections are -- that this country will fall about 3 million jobs short of that. That amounts to a deficit of 300,000 college graduates each year between now and 2018.

In addition, the country now-- That doesn't even include the non-college degreed workers. The United States will need at least 4.7 million new workers with some level of certification beyond high school -- whether that be an industry certification or an associate's degree, we are generating jobs. We are predicting that we will be generating all of these jobs.

However, right now -- today -- without even all those new jobs in place, only 20 percent of employers will hire a young adult if all they have is a high school diploma. High school diplomas no longer are a ticket to the middle class. To get into the middle class you need more than a high school diploma. You need either a county college degree -- an associate's degree -- or you need some level of industry certification to make what the United States government defines as middle class, at \$40,000 a year.

Over 84 percent of the jobs that will be available by 2018 will require education beyond high school and, again, of those about 63 percent will require a bachelor's degree. And, in fact, over 90 percent of the fastest-growing jobs are jobs that are technically middle-skill jobs, again requiring

either an industry credential or an associate's degree. And, by the way, the greater majority of those jobs are jobs that fall into one or another of the STEM areas: science, technology, engineering, and math. And, by the way, many of them are related to health care: that includes registered nurses, phlebotomists, X-ray technology, specialists. Many of those jobs will be in the numbers that we're citing for you today and, again, all of those jobs require education beyond high school.

In fact, in 1973-- To get an idea of how we're morphing from what we used to be -- we used to call ourselves *the knowledge economy*. Now the buzz in the workforce development sector is we are now called *the college economy*. In 1973, 25 million jobs were available for people with some college or better. By the year 2007 -- that was two years ago, three years ago (*sic*) -- 91 million jobs for the same levels of specialties were available. So in just a few years we have quadrupled the number of jobs that require higher skills versus the number of jobs that require lower skills.

In the Midwest alone, 10.2 million jobs -- middle-skill jobs -- will be available by 2018 and, unfortunately, we find that the government tends to underestimate and underproject the number of high-skill jobs that will be available and the people who will be available to fill them.

And employers pay for those skills. People who come in with the right skills and the right degrees earn more. And if you want to just take a quick look at that graph, you can see that even during the most recent recession, bachelor-degreed people stayed employed more often and continued to earn higher wages. Whereas individuals with just some college, with high school graduation credentials, and then compared to the

dropouts -- you can see that, over time, those people are earning fewer and fewer dollars even as the cost of living goes up and up.

After three years of recession data where people are still kind of talking about an unemployment rate that ranges anywhere -- depending on what state you're in and who you're talking to -- 9 to 10 percent, the breakdown is quite startling. During the top parts of the recession we still see that education counts. In fact, bachelor-degreed unemployment rates -- 4.4 percent -- hovered nationally at 4.4 percent for people with bachelor's degrees. People with associate's degrees found themselves with an unemployment rate of 9.1 percent; people who just had high school diplomas, at 10 percent unemployment rate; and, unfortunately, young adults -- adults -- who had nothing but some high school -- who were, basically, high school dropouts -- were chalking up unemployment rates of over 15 percent. So education counts in terms of both the wages you earn and the level to which you can remain employed even during the hard times.

It's clear that the recession that we've endured for the last several years -- 2007 and forward -- has been eliminating the lowest skilled jobs; and employers admit to that. When we can replace an individual with some technologies, we do so. And then we need the higher-degreed people to repair and maintain those technologies. So unfortunately, hundreds of thousands of jobs -- low-skilled jobs -- have been eliminated since 2007. And that's strictly also a result of the economic pressure on employers. We cannot compete globally when we have people who are not ready to pull their weight within an organization that's travelling at the speed of light.

We're projecting nationally -- and, by the way, many of the statistics I'm quoting for you today can be found in studies done by the Georgetown University Center for Education and the Workforce, a highly respected, widely referenced set of studies from which we're pulling these statistics. But right now business is projecting perhaps another loss of up to 640,000 additional low-skilled jobs disappearing, and that's not good news.

The good news, though, is that the American labor force remains very dynamic. American business is still producing a lot of jobs. In fact, in the last couple of years we've produced -- annually we've produced 7 million new jobs but we've lost 8 million. So right now-- I'm sorry, that's reversed. We've produced 8 million jobs; we've lost 7 million low-skilled jobs, so ultimately the net result is still an increase in jobs -- about 1 million of them -- for people who have the right credentials and who have the right skills.

And just for your information, about one-third of American workers change jobs every year; and, ultimately, the sector of the economy that is hiring the most jobs are not the big companies -- they are the mid-size companies. And in the United States approximately 50 percent of the businesses across the country are less than 5 years old, and about 25 percent of those businesses are less than 1 year old. Now, when you own or operate or manage a business that's five years old or younger you have to really, really move to stay up with the competition to stay in business -- to worry about whether or not I'm going to make payroll next quarter. And that's why American business is now in this constant hire/fire situation -- if the person doesn't have the right skills, they're going to be out of a job rather rapidly.

Just so you can kind of relate all of this to what happens in your daily lives, wasn't it wonderful when we had the E-Z Pass system installed in this state? And as a driver you can drive down the turnpike without fiddling for change or stopping to pay tolls because tollbooth operators who really had only one skill -- which was making change for a dollar -- tollbooth operators were being replaced by what? The E-Z Pass system, of course. And if you think the comparison of the kind of a job or the kind of skills it takes to be a tollbooth operator versus the kind of skills you need to work for E-Z Pass, there's no comparison.

The same thing can be said of phone operators. Once upon a time if you dialed zero you would get a live body. Now you get voice recognition systems or prompts that guide you through the numbers you might need.

Bank tellers, again, a mid-skill/low-skill job -- not a very low-skilled job, somewhere in between. But now we have ATMs and online banking so we need fewer bank tellers. And those that we do need to have higher levels of skill.

Grocery cashiers. Well, once upon a time there was nothing other than you bought your milk, you had to pay someone for it. And now, as we all know, you don't even need to talk to a human being to buy that gallon of milk. You can scan the barcode -- barcodes were invented right here in New Jersey at Bell Labs -- scan the codes, hand the machine a dollar or slip in your plastic and -- boom -- you're out of the store without even interacting with a live clerk.

Burger flippers. Well, the fast food industry-- You'd never think that there would be anything that could replace a human burger

flipper, but the fast food industry is really not happy with the level of commitment they're getting from its young employees who often come late or just don't show up. So they're piloting robot burger flippers. Where that's going to go, we don't know. But that's just another opportunity for a young adult to get, yes, granted, a low-skilled job, but at least to get his or her foot in the door into an industry where, by the way, if you put in enough time and play the game right the fast food industry will send you to their own corporate training schools: McDonalds has Hamburger U, Burger King has BKU, and within seven years you can own and operate a franchise and be making a quarter-million dollars a year starting as a burger flipper.

And finally, receptionist. Another-- You might all be wondering why you all didn't do that, right? (laughter) I ask myself that every day, but anyway--

Receptionist: Another job that you would think would never be replaceable is also being replaced, and that also is a good example of how low-skilled jobs are being replaced by high-skilled jobs. A woman-owned business here in Trenton was hiring graduates from Trenton High School to be receptionists and they became-- They soon fell into a routine of being tardy, late, wouldn't call in, developed an attitude -- you know, the usual young adult kind of problems. And so the woman was in a hire/fire situation, and that's a very expensive proposition for an employer. So instead she went out and contracted with an internet company who came into her building, put an internet connection in her lobby -- a big flat screened television. And now when you walk into her lobby you see a person live on the screen, and that person sees you because there are two-way cameras going on. But that person is a receptionist who lives in

England. And in her very cultured British accent she asks, “Who are you here to see?” And you say, “Well, I’m here to see John Smith.” And she says, “One moment, please.” She calls John Smith up, or IMs him, or sends him an e-mail, or something -- right across the pond, as they say -- and then the next thing you know John Smith comes down and lets you in to the meeting.

Now, again, take a look at the comparison between the levels of skills there. We’re talking about a receptionist who, basically, was the face of the company but had very simple academic demands on him or her. And now all of a sudden an internet company comes in and sets up this virtual receptionist situation. Imagine the differing skills that someone would have to have to set that system up instead.

So we’re here today -- I’m here today -- as a representative from the New Jersey Chamber of Commerce. My name again is Dana Egreczky. And I’m happy to be here also in support of the Department of Education’s introduction of the Common Core National Standards: the Common Core Standards in Language Arts, the Common Core Standards in Math, and then what will be the Next Generation Science Standards. All three of these new standards will demand far more of our children and far more from our teachers. The standards in math and science particularly are demanding and will require in-depth knowledge, not just broad but deep knowledge and a deep understanding of things.

And my colleagues who are here today -- Carlo Parravano from Merck and Roberta Schorr from Rutgers University -- will share some of those demands with you. I think, however, it is incumbent upon the system -- and that would include the Legislature -- to take a really, really hard look

at teacher professional development. We're going to need-- We're really going to need top-notch teacher professional development from this day forward if we ever expect our students to be able to learn the kinds of things they're going to need to learn in science and math to be successful under these new standards and in the tests that will come with those new standards.

And there are innovative things going on in some states: for example, there is a test now that measures -- developed by, I believe it was the University of Michigan -- that measures teacher performance before and after professional development -- teacher performance in math.

When I mentioned earlier that I used to be a teacher but that when I left teaching I became a corporate trainer -- that's how we measured the impact of our training. We never just said, "Okay now, go back and do a good job," we measured, measured, measured.

And so there are things we can do to help our kids get ready for these new standards, ready for their places in the world. Because if we don't help them get ready I'm afraid that the United States will continue to lose ground in terms of its place in the world.

Thank you very much. And now I'd like to introduce Carlo Parravano from Merck-- Oh, I'm sorry; Roberta Schorr -- Dr. Roberta Schorr from Rutgers University will be next.

SENATOR THOMPSON: Will you take questions before--

MS. EGRECKZY: Oh, I'm sorry, we have a question.

Yes?

SENATOR RICE: Before you do that I want to find out if the members have any questions.

MS. EGRECZKY: I'm sorry.

SENATOR RICE: And then when we finish, members (indiscernible) missed because I was supposed to give each of you an opportunity to say something before we got to the presentations. We'll get to that, too.

Senator.

SENATOR THOMPSON: Thank you, Mr. Chairman.

I have a question about your (indiscernible) -- the college economy. It states, "The USA will need 22 million bachelor degrees in the workforce by 2018. The USA will fall short of that number by 3 million graduates. This amounts to a deficit of 300,000 college graduates every year between 2008 and 2018." Well, all the reports that we're getting is that since 2008 the majority of college graduates can't find a job; they're out flipping burgers and everything else. So that, again, you're projecting here-- From that point on, 300,000 a year short. We're now at 2012, four years into that period. So are those numbers still valid, or--

MS. EGRECZKY: Oh, they're absolutely valid, and it's more about what majors children -- or young adults elect to take in college. For six out of the last five years (*sic*) the number one degree awarded in New Jersey was psychology, and that's not necessarily what companies are looking for. Now, don't misunderstand: Any level or any degree -- any four-year degree is a signal to an employer that a young adult has passion, has commitment, has persistence. So any degree is a signal. But the jobs we need are not psychology; they are STEM-related careers, they're health-related careers. So because today's graduates came out without the right degrees, they're going to be waiting a long time--

SENATOR THOMPSON: So you're not necessarily saying we need 300,000 additional graduates, but rather we need 300,000 graduates in different fields from what they're graduating in.

MS. EGRECZKY: We need additional graduates who come out with the right degree; correct.

SENATOR THOMPSON: So in other words, the total number we need but simply-- Maybe we have enough kids in college but they're just pursuing the wrong courses.

MS. EGRECZKY: Correct, exactly. Which is why we're so supportive of the math, science standards and tests. Because we do a lot -- the Chamber does a lot of work with kids in schools. And 17- and 18-year-olds come up to us often to us and say, "You know what? I just found out we need nurses; I'd like to be a nurse." But then we find out that the child had barely passed biology and didn't take any other math and science so their career options are limited.

So the introduction of these new standards and tests, and more demands on these kids, will hopefully prepare them for what might be a last-minute decision of changing an elective as they go into college so they can be better assured of a job coming out.

SENATOR THOMPSON: And one more question: The very last chart you have there -- you didn't mention anything about education attainment of top countries. And on one scale there it has zero, 10, 20, 30, 40, 50, 60 and, of course, the other scale is the countries and the ages. What's the zero through 60? What does that mean?

MS. EGRECZKY: Okay, so that-- I didn't realize that was in the printed version of this; I'm sorry. So that's a graph -- I believe, it has four bars at every country, right?

SENATOR THOMPSON: Different age groups -- right.

MS. EGRECZKY: Right. So if you look at those four bars, that basically tracks generations. If you look at the top scale you'll see ages 25 to 34, 35 to 44, 45 to 54, and then 55 to 60-plus. That's the number of bachelor's degrees that were attained by each generation by the time they were 21.

SENATOR THOMPSON: Oh, okay. That's the answer I'm looking for. That was over here, related to some measure of bachelor degree.

MS. EGRECZKY: Yes, right. And if you're looking at that graph, you will notice that when the baby boomers were young we earned more bachelor's degrees than any other country in that graph. But now you can see that 10 years after us, the number of bachelor's degrees earned were a tad higher; 10 years after that a tad higher but, for the first time in history, the number of bachelor's degrees we're producing actually ticked down while most of the countries are ticking up -- some substantially.

SENATOR THOMPSON: Thank you.

SENATOR RICE: Senator Greenstein, then we'll just work our way around.

SENATOR GREENSTEIN: Thanks.

Good afternoon. I'm interested in the types of jobs that you see over the next, let's say, 20 years, 30 years. Have there been-- I'm sure there have been some good studies about where we're going with the actual

jobs. And a related question is the people who would have done some of the simpler jobs before who, perhaps, could not do the complex math and science in school. What kinds of jobs will they be doing? Because, as you pointed out, there's a quite a big difference between somebody who designs a robot and somebody who was a receptionist before. I mean, it's very different. We're going to have lots of people who won't have the ability to do that. Certainly they can get more educated in that direction, but there's some factor of ability as well. What kinds of jobs do you see those people doing?

MS. EGRECKZY: So there will always be some low-level jobs, and you're right, and frankly it's a great concern to the Chamber that folks who might have some level of cognitive impairment or learning disability may never be able to achieve those heights. But if you really look at who's doing some of those jobs now, it's people with college degrees because they have the wrong college degree. So if we help steer young adults, I hope, in a more productive way so that they are eligible and ready for the jobs that we will have, and then the folks who might not be able to reach those heights can take the lower-end jobs -- I mean, that's what we're thinking now.

And that's why one of our big focuses also is employment for people with disabilities -- we're also looking at that very carefully.

For the most part, the other part of your question, though, for the most part, again a lot of those jobs are being driven by the demand for increasing amounts of health care. As the baby boomers age, not only will we need more health care, we will want more health care. We want to stay active as long as possible. So we're demanding more and higher quality health care.

SENATOR GREENSTEIN: You know, it's interesting. Because I would say 20 years ago, when Alvin Toffler wrote his books about the first wave of jobs -- I guess pre-industrial revolution; the second wave; and you said we were going into the third wave. It's pretty much the kinds of jobs you're talking about here. But we also heard that America was becoming more and more a service economy -- kind of low level-type service jobs -- which somewhat contradicts what you're talking about.

MS. EGRECKZY: There will be-- Well, one good example of a low-level service job is a home healthcare aide: very little education necessary, making minimum wage -- \$7-something an hour. And we actually will need millions of those, again, as the baby boomers age. But \$7 an hour is barely a living wage, so there's that conflict. I mean, is that what you want to say is okay to some adult thinking about that as a career?

So it is a complex situation. But, again, I would recommend to the members of the Committee that they look at the Georgetown University Center for Education and the Workforce. It is an outstanding series of studies and they have answers to all of your questions in very specific, detailed ways.

SENATOR GREENSTEIN: Thank you.

SENATOR RICE: Senator Ruiz.

SENATOR RUIZ: Thank you, Mr. Chairman.

Thank you very much for your presentation. I think that -- and this is not so much a question as it is comment -- you're shedding light, and the crux of the conversation is at the level of college and graduation. I think that for all of us here, we have to focus on the K to 12 scenario -- college-bound, college-ready, college-prepared -- and then stimulated to kind

of venture into the math and sciences, because we have to do it a very early age.

It seems that with the presentation -- and this is something that I think many of us have had these conversations -- global economy has moved forward and curriculum has stayed stagnant, and that's not something that is just to this State; it's a national conversation with public schools systems. Are curriculums meeting today's needs? Are we doing enough to, kind of, join forces with the private sector and the public sector to ensure -- even outside of the K through 12 and higher ed opportunities, even through our vocational school training -- are we matching up our training programs with jobs that are available and just not training for jobs that are not available any longer?

MS. EGRECKZY: Well, the two-part answer to your two-part question is this: We do have to push our kids much harder than we're pushing them now. And again, as an ex-teacher and, again, going to schools a lot, when I really pin teachers down and I say, "Now wait a minute. Is it that these kids won't do this, or that they can't do it?" -- and, for the most part, teachers will say, "Oh, they just won't." And that's really disturbing, because right now county college-- The cutoff for credit-bearing college credit -- where you're not in remediation in a county college -- the entryway for that is, according to the county colleges in this state, Algebra II. Algebra II is the gateway for non-remedial, credit-bearing courses in our community colleges. Few children are getting Algebra II at the level they need to walk into a county college and not need remediation in math or language arts. In fact, if you've ever taken a look at the community college remediation rates, they are sky high. Well over 90 percent of the kids who come from our

urban high schools walk in the door of a county college two months later, after graduation, and they need remediation in either math or language arts.

But the second part of your question regarding, “Is the curriculum keeping up? Are we doing that well?” I hope the answer to that is, we’re going to start doing that well.

And again, at this point, unless anyone else has a question, I think that’s a perfect segue to my colleagues. But I see there might be one more.

SENATOR RICE: You have a few more.

MS. EGRECKZY: I’m sorry.

SENATOR RICE: Why don’t we-- Senator, then we’ll come over here, then we’ll come back to them, okay, on this side.

SENATOR ALLEN: Thank you.

Your very last page is extremely telling. This graph shows that those who are over 55 in each of these countries are not as far along as those in this country.

MS. EGRECKZY: Correct.

SENATOR ALLEN: So 40 years ago we were doing a much better job than everybody else.

MS. EGRECKZY: Right.

SENATOR ALLEN: Everybody else obviously changed what they were doing, and it appears that we have not. Would that be an accurate representation?

MS. EGRECKZY: Either they’ve changed or, perhaps, we’re doing what we used to do not so well. I mean, obviously there’s a deficit there somewhere; I’m not too sure exactly where it is. And what I hear

from people who look at that graph -- which, by the way, was a study commissioned by the Indiana Chamber of Commerce -- when you look at that graph you have to ask yourself those kinds of questions: What is going wrong? And partly, again, what is going wrong is that those countries demand more of their students in the K to 12 system.

Several years ago the Chamber, working as the Business Coalition for Educational Excellence, sponsored a study of the State's assessment exams -- middle school and high school. And it's widely acknowledged since then, people do agree, that the questions that we ask of our high school students in the HESPA -- the exit exam in high school -- are the same level of questions that other countries are asking their middle school students.

It is definitely starting to cause problems in the workforce. Hiring practice has changed dramatically in the last seven -- five to seven years. It used to be that a kid could walk into an employer and say, "Here's my high school diploma," fill out an application, go for an interview -- done. You might get the job. Things have changed. I do not know of an employer who does not give a math test at the point of hire and who also, by the way, demands that the people taking that test do not do so with a -- cannot use a calculator. They can't use a calculator. And right there there's a dog leg between what our kids learn in school and what the job will expect of them. We do not allow calculators on our tests. We certainly allow them on our job, but not on our tests. So again, to go back to Senator Ruiz's question as well: There is this distinct difference between the jobs that are there, the preparation we're giving our kids, and what the business community needs.

SENATOR ALLEN: If you had to choose -- I don't really know if you know the answer to this -- but if you had to choose one country that really stands out in your mind -- and clearly we see Canada, Japan, and Korea, pretty close together, and maybe it would be one of them -- but if you had to choose one that, in your mind, prepares students the way you would like to see them prepared here, which one would it be?

MS. EGRECKZY: It would be one of the Asian countries in all likelihood. There's a whole-- And again, we suffer most, I think, in this country from math problems than any other. And I think the fact that most of the Asian countries believe that every student can do the math; that if given the right kinds of professional development, teachers can make sure that that happens. And again, we're going to hear more about that very specific subject in just a few moments.

But again, that's why I would like to go back to saying that the key to all of our success is going to be whether or not our math and science teachers are prepared to deliver what is essentially this massively different set of curriculum. As I said, I was a science teacher and I just had the honor of seeing some of the new science curriculum coming down the pipeline. Now, when I was teaching science, when you did a lab in science -- and you probably all remember this from your high school days -- when you did a lab in science there was a procedure you followed: step 1, 25 mls of hydrochloric acid. Step 2-- I mean, it was almost recipe cookbook, right? Not anymore. If you see the new science standards, it's something like, "Students will design an experiment that will prove" -- something. That's going to take a huge amount of change on the part of teachers to deliver this. And, in fact, within the science standards they've also integrated

engineering. And I have to tell you, I mostly taught biology. It would be quite a stretch for me to figure out how to include engineering. I mean, the human body is all engineering; but to actually teach it that way, I'd have to go back to school and learn a lot.

So I would say that the paradigm that we would aspire to would be in the Asian countries in math.

SENATOR ALLEN: Thank you.

SENATOR RICE: Assemblyman Wolfe, and then we'll come this way.

ASSEMBLYMAN WOLFE: Yes, Chairman, I'd like to thank Dana. Dana, that was excellent.

MS. EGRECKZY: Thank you.

ASSEMBLYMAN WOLFE: Actually, I think we all paid attention. (laughter) We asked questions.

Three things: I can remember, years ago, perhaps with some of the Committee we have right now, I had to attend a meeting at Bell Labs when they were at Holmdel -- remember that? AT&T?

MS. EGRECKZY: Photon Valley.

ASSEMBLYMAN WOLFE: And we were talking to the head folks there, and they were telling us then that they gave a test to entering employees, reading and math. And they actually had remedial courses they gave to their physicists and things like that.

MS. EGRECKZY: Yes.

ASSEMBLYMAN WOLFE: But that's then.

Two other things: I know your study didn't look at, but I think one of the things that we should look at is the values and expectations of

the potential employees in the future in terms of Generation X, Y, Z -- whatever is coming beyond that. Because I know talking to some professors and doctors recently that the people coming out of medical school don't have the same values and things that most of us would expect of doctors when we grew up. I'm not saying all doctors are bad; but in terms of what they want and how they want to get it, it is basically not something that we're used to.

And lastly, looking at my good friend Senator Greenstein who used to sit behind me -- Greenstein -- in the Assembly, when things got boring we talked to each other. I would turn around and talk to her, and I learned that she was a psychology major -- correct?

SENATOR GREENSTEIN: I was.

ASSEMBLYMAN WOLFE: And I was a psychology professor. (laughter) So on both (indiscernible). So glad we're in the Legislature now.

So thank you very much; thank you.

SENATOR ALLEN: It was a good major. (laughter)

MS. EGRECKZY: You're welcome.

SENATOR RICE: Assemblywoman Wagner, and then (indiscernible).

ASSEMBLYWOMAN WAGNER: Yes-- You know what?

SENATOR RICE: (Indiscernible) Assemblyman first (indiscernible)--

ASSEMBLYWOMAN WAGNER: Oh, I'm sorry. Who's next?

ASSEMBLYMAN RAMOS: Ladies first.

ASSEMBLYWOMAN WAGNER: Okay.

You know what? I heard your comments in regard to measurement and the importance of measurement in the educational world. And yet lately I've been reading articles about the success of Finland who is number one in science and in math, and beating us every which way, and really doesn't base its education on measurement tools when they're teaching, but rather more experimental. How do you account that they can be so successful without the measurement tools and yet that's what we're asking for?

MS. EGRECKY: Well, I think if you really take a hard look at what our measurement system is telling us, and then you also take a hard look at what goes on in the schools before, during, and after that measurement system -- the State tests -- begins, the best schools look at the State's test day as just an annoyance. They are teaching to the standard, they are teaching the way they should be teaching, they're doing the right stuff -- whatever that right stuff is. The problem is when you are barely succeeding, the tests becomes, possibly, the day the atom bomb explodes. And so kids are pulled into classes, they're drilled, they're killed, and it doesn't help. Kids have to learn-- First of all, they need the confidence to say to themselves, "I know enough math so I can figure this out on a problem when I'm taking a test." And they also have to know that-- Over the year they have to be engaged. And I think, again, what one of my colleagues will mention is that, interestingly enough, the harder the challenge you give them in class the more engaged they are and the better they do in the long run.

So interestingly enough, the fact that we have socially eased off, we're not demanding as much-- We award high school diplomas because

they've tried. That's what we need to back away from, because most kids of average intelligence can absolutely do the math and science.

ASSEMBLYWOMAN WAGNER: And I hear what you're saying; and if I had to take it a step further, I guess I would see the measurement tools driving the curriculum, rather than punishing the student. Because I think we've lost sight of the purpose of the tests.

MS. EGRECZKY: I would actually-- I'm sorry. I would actually agree with you.

The measurement tools became a measure of the student rather than the system. And, indeed, I believe they were always meant to be a measure of the system. Unfortunately my own son, for example, when he was in 8th grade -- and he had scored top percentiles in math all along -- he just couldn't be bothered because the stuff they were giving him just didn't engage him. So when he took the 8th grade exit exam, he wound up in the lowest algebra class. So he was all upset, and blah, blah, blah. But he's now a biomedical engineer, having graduated after four years -- only four years of college, not five or six. (laughter) And we were lucky: We could afford a tutor. All the stuff that he blew off because he thought he knew it, and then, "Oh, my goodness, I don't know as much as I thought" kind of attitude.

We were lucky. Kids are like that all the time and we have to change the message to kids. They have to start learning in 6th grade -- 5th grade -- that school is their most important job right now. And out of everything that is in school, math and science are the things that will get them the jobs they're going to want some day. And we don't give them that message at all. In fact, one school board -- I'm sorry to go on, but you've

kind of hit a nerve, as you might tell -- one school board in northern Jersey has just issued a mandate that no teacher will be allowed to fail a child for any subject in the first quarter of the year -- no matter what they do or don't do. Whether they do their homework, pass the tests, read the book -- it doesn't matter. No child in that school can be given an *F*. Now, I have to tell you, as an ex-teacher, giving them an *F* in the first quarter is usually the slap upside the head they need, and many times they turn around and start moving. Additionally, do you think that we in the business community will give an individual nine weeks in which to do nothing and fail without any consequence? So some of the decisions that are being made in the hopes of not having these children stressed or disappointed or sad is really setting them up for more failure ultimately, I think.

SENATOR RICE: Assemblyman.

ASSEMBLYMAN RAMOS: Thank you.

I appreciate your comments as well. I was going to mention Finland as well. And in the terms that we see-- You mention creativity in science in the classroom, things of that nature. But to Assemblywoman Wagner's point, isn't the way our curriculum is set up and with the test taking, we're creating more bubble-fillers, as opposed to students in a classroom who can think and create outside a box as far as an experiment goes?

MS. EGRECZKY: You may be right in the current paradigm, and perhaps our system to this point has; but that is again why we, as the business community, have lined up behind the Common Core, the new standards in math and science. If you see those standards you will

immediately see what the differences in the classrooms will be. And we will generate creativity and engagement through those standards.

ASSEMBLYMAN RAMOS: My next point: Are our classrooms prepared to meet those Common Core standards -- the new Common Core standards now, which are going to be much further enhanced?

MS. EGRECZKY: And I interpret that to mean, are our teachers prepared?

ASSEMBLYMAN RAMOS: Not teachers; I mean, our facilities. I work in an elementary school. Our science lab has a sink.

MS. EGRECZKY: Yes, and believe me--

ASSEMBLYMAN RAMOS: That's it.

MS. EGRECZKY: --as an ex-science teacher I had many of those situations as well. But, again, I think that becomes far secondary -- way distant kind of stuff -- to whether or not the teacher is prepared. In fact, the research indicates that teachers are 20 times more important than any other factor in a child's learning.

ASSEMBLYMAN RAMOS: And I agree with that point.

Now, my next question would be: We look at our students today at our universities; we read all the types of articles about the amount of debt that our students are graduating with. Now, do we expect those students to major in engineering, in the sciences and physics, to really become educators at the salaries that educators are being paid, as opposed to being a biomedical engineer? Somebody creating new science technology at Johnson & Johnson to use at a medical facility?

MS. EGRECZKY: You're 100 percent right on that, in that right now it is unfortunate, but the average performance of students who are in teacher preparation colleges across the country, most -- over 90 percent -- of the kids preparing to be teachers have come from the bottom third of their classes. So you know, we are looking at some seriously impactful issues.

But on the other hand, if business needs a biomedical engineer, they're going to hire it at whatever cost they have to pay. I actually think we're not being inventive enough when we look at these issues. We need math teachers, we need physics teachers, we need science teachers, but you know what? I'm a good example: My job is flexible enough that if I could teach one -- like an adjunct professor -- if I could teach one class a day in a high school I'd be there in a heartbeat. But we haven't really started looking at how we could be inventive. And not give me-- I don't want a full-time teaching job again, but I'd go in every morning at 8 o'clock and teach a biology class. There are all kinds of ways we can be inventive.

During the years that I, as a teacher, was certified to teach any subject, one period a day I was given an assignment to sit outside a bathroom and take a pass, watch that no one was throwing food in the cafeteria. You know, we have to learn how to use our personnel to greater advantage.

ASSEMBLYMAN RAMOS: Correct. And that also kind of-- Assemblywoman Wagner's point with the Finland model-- Again, they totally changed the academic criteria for teachers to become teachers and to meet those standards. And that's also reflected in their pay as well.

MS. EGRECZKY: And you know what? I think that some of the models coming out of charter schools where teachers are being offered well past \$100,000 if the performance of their students meets certain expectations -- but those don't seem to be gaining any ground, obviously.

ASSEMBLYMAN RAMOS: Exactly. One school in New York City did hire people at \$175,000 a year. Their test scores didn't improve better than anyone else's test scores either. So that again is a failed model.

MS. EGRECZKY: It's not going to be the money that does it.

Most teachers-- Again, surveys show that most teachers are not in it for the money anyway. They're in it for the right reasons, yes.

ASSEMBLYMAN RAMOS: As an educator myself I agree with that statement wholeheartedly. But I think also it's great we're looking at all the standards, but there are other things-- We're not creating widgets; students aren't widgets. And not every student learns the same. And I think we need a better understanding of that as we go to educate our students. And I think when we understand that a lot better, to find the proper standards to meet their needs and help the teachers meet their needs.

MS. EGRECZKY: And, indeed, that's what these standards are. When the national standards come out, they have been given great thought by experts across the country -- psychologists, mathematicians, scientists -- and they are superb standards.

ASSEMBLYMAN RAMOS: Thank you, I appreciate it.

SENATOR GREENSTEIN: Chairman--

SENATOR RICE: I just want to add a little comment here.

I like these new members. They seem to get this stuff.
(laughter)

Assemblyman Caputo.

ASSEMBLYMAN CAPUTO: Well, number one, I'm glad I did not have you for high school chemistry, biology. The standards were okay as far as I was concerned. (laughter)

But all kidding aside, you know, this discussion is so meaningful because some of the members of this Committee -- most of the members of this Committee have really participated in a wonderful exchange. And your report is very informative and very helpful in terms of trying to solve a lot of problems that we're facing in education today.

And I don't want to cover other people's area, but I wanted to focus in on teacher evaluations. It seems that all the concentration is really zeroing down, as we've already discussed, about teacher performance. And obviously, as Assemblyman Ramos indicated, the Finland model has raised the standards. We haven't been able to do that to date. But what concerns me is when we talk about evaluation of teachers -- of professional development, of their performance, etc. -- who is going to be responsible for evaluating them? What kind of instrument are we going to come up with? And how fairly are we going to deal with the fact that, as has already been stated, anybody in the field of education knows -- I was an educator myself -- all kids are different, schools are different. And even with the citing of the 200 schools in the State of New Jersey where they were cited to be failures, it seems that you actually have to look at that school in particular and find out and diagnose what's wrong with that particular building. What's going on that's wrong in the educational process may be different

from school X to school Y, and why can't we fix it. Part of that problem is teacher evaluations and professional development management, which we all understand. But that's only the beginning of the problem. In other words, when you have politics that is in education -- politics -- when we remove politics from education we're going to remove 80 percent of the problem. And as long as we have boards of education that are accused -- whether they're guilty or not -- of politicizing the system, of picking out favorites, all the systems that you come up with are not going to be workable, or acceptable, or even meaningful in terms of educating and uplifting our kids. When the board member says, "Don't let go of so-and-so because she's related to so-and-so," that undermines the system. And even the good teacher there who needs to be evaluated gets demoralized because they see the standards are not what they should be. And when you go to communities where those standards are high you will find the educational level to be higher.

So we've got to look-- You know, you can't just say all these systems are the same; they're not. And we have to really understand how to evaluate, and what practices we need to put in place in schools that are not achieving at the level they have to be.

MS. EGRECKZY: You're absolutely right, and, in fact, I think you'll be-- Your questions-- The questions that have been implicit in everything you've just said, I think you'll get part of that answer when you get to see Dr. Schorr's videos of how one teacher over the course of one year changed the way she teaches her students.

ASSEMBLYMAN CAPUTO: Well, did I pass so far, because I was concerned. (laughter)

MS. EGRECKZY: Oh, absolutely. I'd be more than happy--

ASSEMBLYMAN CAPUTO: I want to know if I understood the conversation. (laughter) Plus you've got two psychologists, which really scares me. And by the way, they're in the right forum -- just want you to know. Thank you.

SENATOR RICE: Question here?

SENATOR GREENSTEIN: I just had one follow-up question.

You talked about the Asian schools doing very well. One question I would have, in keeping with the Assemblyman's comment about how all the schools are different -- different problems: We clearly have some schools, usually in the poorer areas, that have a lot of social issues that make it hard for the students to learn -- certainly stand in the way of very bright students who otherwise could. How does that work in these Asian societies? I'm sure they have schools where kids have a lot of social problems. Is it just uniformly that the expectations are high, and no matter what type of school you come from you're just expected to meet that level? Or do they have different expectations? Because that always leads to problems.

MS. EGRECKZY: This is an opinion more than any research I can necessarily quote. So yes, I think their expectations are higher, but you can't just tell a kid, "We have high expectations for you," and then not give them a really explicit road map and the tools that they need to get there. And that's the issue.

So any study you do, any survey of New Jersey kids, 94 percent of them are planning to go to college, and yet when they get to college remediation rates are sky high. At the six-year mark, our State universities

are only graduating about 50 percent of the kids who enrolled to get a four-year degree. So it's really troublesome.

But I think, again, it's not just the expectations, it's what you do in the classroom. Not to teach them, but to engage them. And I keep saying this because we have to do a tremendous paradigm shift: The old classroom has to change. It's not going to look anything like the classroom that we're going to need to create to meet the standards and to be competitive internationally. And I think, again, when my colleague Dr. Roberta Schorr comes up you'll see that. And Dr. Parravano will also talk to science standards, but Roberta has video that I think you'll really enjoy.

SENATOR RICE: We're going to bring them up right after I make a couple of comments here.

You know, I certainly concur with the remarks made by my colleagues. But the one thing that I do know about the international communities: There is very, very strong parental involvement. There are very, very strong support systems. When you get to this country and states like New Jersey, when you say you have a budget crisis so therefore you don't believe it's the government's job to provide, at the school, support systems for these kids in any community, that's very problematic. When you look at your numbers -- 15 percent are your dropouts -- well, we can identify where the majority of those dropouts are because of the lack of support system; not because the youngsters, intellectually, are inferior. And that's problematic. When you put legislation in and try to get it to move out of the Legislature for years, to have minority dropout kind of organizations to study this stuff, as we did with ETS and others who were on panels, it's problematic.

So the question is: One, is there a will -- by those of us in the Legislature, by those of you involved in the corporate side, Chamber of Commerce -- to really be objective in this whole picture of setting these stages right regardless of cost? Now, let's be honest about what the variables and elements are. We may not be able to fix them the way we want to, but there's been too much denial -- and I've been here 26 years -- in terms of what the real problems are. They're unique to some communities where you have the highest rate of dropouts and the highest rate of students going to college needing remediation. That itself tells you something.

And so-- And I think that the Senator raised the question: Can you tell us what happened in those other countries? Tell us what happened? When I went to Brazil several times, I could always tell that there was something taking place. And what I found out is that the people in Brazil are no different than those who came here on slave boats in this country. They recognize that their way out is education. So at night you'll see young people carrying books, and I said, "Why is he carrying a book?" All the people were carrying books, and I was like, "This is amazing." I just sat there and watched them. We have to want our kids to-- Our kids can learn. If you look at the iPods, and the iPads, all the computer stuff that these kids are getting into -- these are not pinball machines anymore. You know, you bounce the ball -- you probably don't know what that is. I mean -- Assemblyman Wolfe knows -- (laughter) these kids have real computers and they know how to work those things and (indiscernible), so we know that the mind is there; the question is whether we do them collectively. All we have done was debate each other, politically, in government -- I'm not

just talking about this Legislature -- the Federal government, too. And then corporate side debates on whether or not public education, private education, or a combination of both. We never really got into the substance of what the real issues are.

So I wanted to say that, because that's very important for us not to overlook. And if the Chamber of Commerce is going to be participants in terms of education, then we don't want the Chamber of Commerce to be so busy-minded with the welfare side of those who are involved intellectually that they forget there is another side that needs to be discussed behind those closed door meetings that some of us are not involved with, etc.

And the final thing I want to say is that those of us in government, when you look at it-- And take a state like New Jersey: If you have 600-plus school districts, and then you take over school districts at the local level where there really is no participation of the people who are disenchanting, including teachers and everybody else, and the government is running it and it's failing-- But yet, we tell the whole world it's failing because of the people there, the people in the school, the parents, etc. But you're in charge and they have no control of their own destiny. That needs to be talked about in these "private meetings" of the Chamber and public meetings of the Chamber, and the people who want to drive education null and void of our participation at the community level. That becomes very important.

And I'm going to end by saying this: There's a good example. The Acting Commissioner and others have said that we need to change, or we'll be looking at this, because they are going to need our help. The No

Child Left Behind legislation and also QSAC -- the way we crafted it to get away from the old takeover system -- was a real poor tool for assessing the progress of these schools. Well, if in fact that statement is true, then why do we still have districts -- only three out of 600 -- for 20-plus years under local (*sic*) control? Because by their own admission we're measuring them wrong, but we have no say-so.

But when you go to the other side of that, they are saying that we have to change. But then when you look at the reports that this Committee receives, you would think that you only have three districts -- and they happen to be urban -- that are just not performing, even though under those tools we passed that they wanted us to pass-- And we still can't get any control back. But then you look at a Milburn and it says that in instruction and program -- because that's what we're talking about here -- that Milburn came down to 69 percent under our tools, an instrument to measure them. Where a city like Newark, the public school system there, came from 30 percent in program and instruction up to 64 percent. So it seems to me this is progress, and this is not progress. Which kind of indicates that the State is right: We need to look at how we assess them.

And so when you go back to "We're going to look at this piece now," and look at this, I think that some people who are intellectually looking at these kinds of things need to understand that legislatures represent real people -- interact with intellectuals, believe it or not, in the grassroots urban communities and rural communities. Just (indiscernible) intellectual because they're not rich intellectual folk. The Legislature has the (indiscernible) but we're never invited to participate in the debates; we're in the paper fighting.

And so I welcome the Chamber of Commerce for the kinds of things you're doing, but we don't want-- We like private corporations to give us information but, just like government, not dictating the destiny. Help us set the stage; help us to provide the resources and the research so we can do better. And I think that's what differs in those other countries. That's what's different. The needs are there, based on corporate America. It's getting fed down to the educators to do what they have to do without any of their interference.

So with that, you can bring up--

MS. EGRECZKY: Thank you.

SENATOR RICE: --Dr. Schorr, is it?

MS. EGRECZKY: Dr. Roberta Schorr from Rutgers University.

SENATOR RICE: Is there someone else with her, or--

MS. EGRECZKY: And then Carlo Parravano.

SENATOR RICE: Now, be careful. We have a lot of educators up here. (laughter)

ROBERTA SCHORR, Ph.D.: Yes, this is good.

SENATOR RICE: And psychologists and stuff like that.

DR. SCHORR: Thank you for giving me this opportunity.

I'm not used to not controlling my keyboard, so-- Thank you.

SENATOR RICE: See, you want to control your destiny. See, that's why (indiscernible). (laughter)

DR. SCHORR: That's exactly right; that's right, yes. And I'm a case in point. I'm an existence proof.

Yes, so, I'm just going to go through this as quickly as I can. There are two videos -- as Dana mentioned -- same teacher. And as you

look at the two videos-- Because sometimes a picture or a brief video speaks louder than the words that I could share. Look at the difference between the two in student engagement. Notice who's talking, and when they are talking, and how they are talking, and the role of the teacher and the role of the kids.

Okay, that's it; you're good.

(video plays)

So I don't know if you have any-- The sound was very poor, yes, I know. The good news is the kids weren't saying very much, so you didn't miss a whole lot.

Now you'll take a look at the next video: same teacher, few months later. (video plays)

So I would challenge anybody in here to perhaps pick which class you would want to be in or have your children or your grandchildren -- in my case grandchildren -- family members in. Which class appears to be developing low-skilled workers versus the class that's developing high-skilled workers?

The truth of the matter-- Both of these take place in the same school. It's an urban school in northern New Jersey. It's Newark. I guess that's okay for me to say. We have full permission and consent to show these. In both cases the teacher voluntarily shared the video with us. And they're homemade videos. She had people taking them. And in the first video she thought she was doing a great job. She said, "Look, I'm asking lots of questions." But that was all that was happening -- was that she was doing rapid-fire questions.

Now, there were a few questions about international studies. And if we look closely at video tapes of children, we see that in some of the countries that Dana referred to, they look remarkably like the second video. If you noticed in that video, the teacher didn't speak. The children didn't have to pass their questions through the teacher in order to get them heard or voiced. They were able to speak directly to each other. They were able to challenge each other by saying, "What do you think about this? How would you do that?" People weren't recoiling with fear at being asked these kinds of questions.

Might I trouble you to-- Thank you.

So the big three, as they occur in schools which have been mentioned here, are the students' curriculum and assessment, and teacher practices. And the new Common Core Standards really address them to some extent or another. And let me just say that the Common Core describes the content that should be taught at each grade level, as well as varying levels of expertise that one should expect to develop in students.

And so here is just an example -- I'm not expecting you to read through this -- about what happens at Grade 7, and several more pages would follow giving much more specificity regarding the content itself.

I'd like to get into the next slide and several slides from this that come directly from the Core Content Standards in mathematics. And I put in red certain critical words that I think are really important to highlight. Now, if you look at the broad titles -- so, in this case: Make sense of problems and persevere in solving them. Words like *explaining your answers*, *analyzing givens*, *understanding the approaches of others*, *making sense of situations*-- I think it's critical here, reasoning abstractly as well as

quantitatively, but also the ability to decontextualize -- to abstract -- as well as the ability to contextualize. Those are critical aspects of the new Standards.

Here are some more. And again, you'll see the words *understand, constructing arguments, making conjectures, building a progression of ideas, listening closely to the arguments of others and deciding whether they make sense, and asking useful questions.*

Modeling with mathematics means applying and knowing how to solve complex problems.

Using appropriate tools: Tools are not your enemy here; they are very, very important and useful in doing mathematics when they're used appropriately. So understanding when and how to use technological tools to deepen understanding.

Attending to precision: understanding, communicating precisely, clarifying definitions, etc.

Discerning patterns and sequences, maintaining oversight of process, and continually evaluating situations. Does this sound like a low-level skill set or the kind of skill set that you need in order to be the kind of worker that Dana described before? I use the word *CEO* in a very general way. I don't literally mean a CEO, but yes, maybe in some ways I do.

So what kinds of learning environments will produce these kinds of things? Well, if you notice, the very first bullet there says *conceptually challenging math*. This is not easy math. It shouldn't be easy math, nor should it be avoided, deferred, or reserved for those who are deemed to be "gifted." That mathematical inquiry has to be encouraged and supported. If we have kids sitting in rooms being told what to do, how

to do it, and then reproducing it on low-level -- in low-level kinds of questions on tests, who are we training and for whom are we training these children? Where will they be working?

I want to jump down to the last bullet because I think that's critical, and Dana mentioned that a little bit too. Students need to learn to deal with frustration, anxiety, fear so that these feelings lead to the anticipation of learning something new, and increase pride and achievement when the problem is solved. We all know when we have a complex problem, when we struggle with it, we feel good when we've solved it. If somebody comes along and presents you -- every time you're faced with a struggle -- with "Oh, here's the answer. This is all you need to do," pats us on the head and sends us on our way, we view struggle as an opportunity for failure where somebody comes in and saves us, as opposed to developing the kinds of skills you saw highlighted in red in the slides before.

So without these conditions in classrooms -- there's a picture of an emperor -- the emperor is only clothes. We can get all the standards we want, we can get all the learning environment standards, we can get professional standards, we can get tests. But without those critical things happening in classrooms, the emperor is only clothes. There's no body there.

And something that just came out last week -- and I know that you can't possibly see this -- but I just wanted to say that teachers want to be able to do this. I think that we should understand that all of the teachers I've had the privilege of working with in lots of urban centers as well as non-urban districts -- suburban districts -- they want to be able to do a great job. But if you look at the second bullet, when asked to choose

possible obstacles -- and this is -- directly deals to some of the things you mentioned -- a lot of them look at a lack of parental support -- 49.7 percent; inappropriate textbooks that don't address the standards -- I know that came up -- 28.9 percent; concerns about State tests and their alignment, 28.8 percent; and students' difficulty learning the material is only 20 percent relative to the others. It's still high. And a lack of the mathematical knowledge among teachers: Teachers need a specialized content knowledge in order to be able to do this, just as an accountant needs a different skill set than a topologist, or an algebraist, or an engineer. Teachers teaching math need different skill sets with mathematics.

And so I want to thank you for giving me this opportunity and for all the good you do for the State of New Jersey. We don't get to say that to you all, but I--

Thank you.

SENATOR RICE: Thank you for your presentation.

I just want to make a couple of observations. Number one, you made some points that are very valid. The reality is that even though people make those points, no one has addressed those points. And when you talk about the things that should happen in the classrooms, and teachers getting blamed for not making those things happen -- when, in fact, they do try to make them happen-- But in a short period of time, when you have the conditions that I referred to existing-- First of all, you said the kids shouldn't fear math, for example. Well, they probably fear math, they just can't get a connection to math, because getting to school there is so much fear coming in the front door (indiscernible). By the same token, when you get a commission -- when you get a superintendent of

schools -- and you mentioned Newark, so I'll mention the Newark Superintendent -- who reads the report, but doesn't know anything about Newark or about New Jersey basically -- because they're brought in here to take over a district (indiscernible). But when you mention those kinds of things in this report coming from the State -- or at least from (indiscernible) -- indicating that the majority of the students in urban school districts are going to school hungry more so than others -- and the statement is not (indiscernible) "We will look into this and see how we can maybe work with government to fix it." It's like, "Well, that's a shame, but they still should be able to learn if the teacher wants to teach." You can come from a wealthy community -- if you're hungry, you're hungry.

And so these are the kinds of things that we bump into that me and my colleagues don't know they take place in our community in conversation. They probably read about them. And we come here to try to explain that we need to bring people like you and others in to give us this kind of information.

Just add the other piece that you're aware of, that the chamber my not be aware of until you bring it. But it's not that kind of cooperation and participation. When you get a phone call, and you work so hard and get the support of your colleagues who have been here to reduce the lead content in school water and things of that magnitude -- and houses-- And then you find out -- and you think things are going okay -- we cut moneys for lead abatement. And to not realize that if, in fact, a child has that lead connection and we're not aware of it until later then there's the diminution in his or her ability to learn--

And so I just want to keep the record straight that this is important to us. What I'm trying to let my colleagues know as we look at education -- particularly under this Committee -- in trying to figure out where we should be going, what's happening to the funding, what's happening to programs -- that we have to be very cognitive and aware of those elements and those factors. They are very, very real. And if, in fact, this Committee and other committees of like kind do not bring this to the Administration's attention-- Contrary to what the governor says -- and I'm not talking about this Governor. We brought it to Jon Corzine, we brought it to McGreevey, and they're going to act like it's not there. The Governor is saying, "It's there. We just can't fix it right away." We're never going to compete with those countries we're talking about in education.

So I just wanted to say that to you, and I wanted to be on record with it.

So we can go to the next speaker now.

Oh, I'm sorry.

ASSEMBLYMAN WOLFE: Thank you.

I just have two questions.

Those two scenarios you showed at the very beginning: Is math instruction, now, continuing to be independent thinking, or is it more group-oriented problem solving?

DR. SCHORR: So the answer is: it depends.

ASSEMBLYMAN WOLFE: Okay.

DR. SCHORR: A lot depends on where you are, who you're with, and when it's happening. So I get to a lot of schools -- again, not just

in the state -- and I've been to a lot of the countries that were mentioned before. It just depends.

And the interesting thing about it is that it can be very deceiving. So you can have kids working in small groups doing a problem that would be best done alone, and you can have kids working alone doing problems that would be best done in groups. And so the critical thing is knowing when and how these things ought to be happening so that they maximize student learning.

And I would say that some changes have been made, but not enough to really tip the balance in terms of helping children to develop the kinds of skills that they need so that their talents and abilities can be expressed in the ways that they should.

ASSEMBLYMAN WOLFE: Okay. My other question is: Is there a trend today to continue to have the student intellectually, deductively, or intuitively in their heads solve a problem, or are they encouraged to use aids: calculators, iPads, iPhones?

DR. SCHORR: So, again, the issue isn't so much the tool, it's when and how the tool is used. I have a program that I use a lot with children in Newark. It's simulations for learning calculus. And we've done it at the middle school level and we have remarkable results. And it uses simulation technology. So there's a case where we use technology to do better things, not just to do old things better.

So if you look at the standards, you'll notice that precision is part of it. We do want kids to know how to do things without calculators. But the issue isn't so much whether or not a calculator is to blame. I think

if we do that we set it up as a straw man as opposed to really considering it for use when it's appropriate to be used.

ASSEMBLYMAN WOLFE: Thank you.

SENATOR RICE: Assemblyman.

ASSEMBLYMAN RAMOS: Just to his point with the calculators -- which I find fascinating, a lot of it, because you expect third and fourth graders to know their multiplication and things of that nature. And what-- Again, I work at the Paterson Board of Education. I teach in a regular classroom. And a lot of those teachers get told, "Don't worry about multiplication, because when they take the test they can use calculators." And they don't teach multiplication. They're not teaching them spelling because these word checkers correct spelling for them. So we're going away from all those things. The core foundation for all of our basis for education -- the foundation -- we just totally -- for the last 10 years we totally went away from that. And that's partly leading to the failure that we see today -- in our classrooms today -- at least at the grade levels that I'm seeing.

And the one thing I noticed in the films -- the films you showed -- the two different films with two sets of students in the classroom. I have three classes a day in my room, and I teach all those three classes differently. I can't have a discussion where the kids lead the discussion in the classroom, because chaos would insue in my classroom. Another class I could do that with. I can sit down, relax, and say, "Here's what we're working on today, guys," and the kids would just lead the discussion themselves. I'm just going back and forth all day long. So the environment does go into it. The class dynamics go into it -- who gets along with who in the classroom. And all that stuff goes into play. And I go back to the point

about widgets again. Not everyone learns the same. Every class is different each day. I can have the same lesson -- three classes that day -- and every lesson gets a little different during the course of that day.

And I just want to go into another point regarding the evaluations -- what Mr. Caputo, Assemblyman Caputo brought up earlier. Based on the fact that now, when you go and talk about (indiscernible) teachers, we're looking to take test scores into account. Now we're not worried about the student anymore; now we're worried about the teacher. And the teacher is worried about, "I want to retain my job." So are they going to be worried about giving the best instruction possible or worried about the student passing the test? And in just focusing on the student passing the test -- the best teaching they're doing? I would say no. I would say the best teaching they're doing is outside of that realm. So if we put that focus on it, where 50 percent of it is based on students passing a test -- the evaluation, you keep your job or not -- students are going to want to just say -- the teachers are going to say -- typically, it's just human nature to survive -- "I have to survive. I have to survive myself." So we're making it more about the teacher's survival than enhancing the students' education abilities. And that's my concern as far as the evaluations go.

Thank you.

And there really wasn't a question in there -- more of a comment.

SENATOR RICE: Assemblywoman.

ASSEMBLYWOMAN DeCROCE: Just that I agree with the core teaching. I think the Assemblyman was absolutely right when it comes to math and electronics. By using the electronics, the children look more at

the electronics, and that's the fun part of it. So they're not really understanding and learning.

Look, let's face it, all of us are on computers. I know many, many times when I will do a report, I will hit Spell Check. And I, myself, because we're so used to it, look at a word and say, "Is that spelled right?" because you kind of lose track of that. So as an adult, if that's what is happening to us, and those core areas are not taught to the children and they're allowed to depend on electronics, they're never going to move further than that.

SENATOR RICE: Senator Thompson.

SENATOR THOMPSON: The electronics is good for the arithmetic, but not so good for the math. I will distinguish between the two.

A couple of months ago there was an article in the *Asbury Park Press* where a teacher was being monitored during a math class and so on. And there was a problem presented to the students. And the students came nowhere near answering correctly. I mean, they just gave out answers that were totally absurd. And they quote the teacher trying to teach them how to analyze it. But it was clear the teacher was missing the mark. She was not following the first point that you make here: make sense of problems and persevere in solving them. It was clear she was not teaching the students to clearly understand the problem to begin with. What is the question? What are you trying to find? And then what is the data you have, and match these two. Once you do that, solving a problem is not at all difficult. But obviously she was not teaching them to understand the

problem before trying to solve it. And that is so essential for mathematics. It won't work without it.

DR. SCHORR: I think that's a really important point, and you said it perfectly.

SENATOR THOMPSON: Thank you.

SENATOR RICE: We're going to move on. I just want to reiterate something that Assemblyman Ramos said. We're different generations. It's very interesting -- when I was in the Marine Corps I took some courses at East Carolina University. I thought I may want to be an accountant. When exam time came, that's when the calculators came out. And everybody was using them. The professor said, "You'll never use calculators in here. I will teach you how to use them, but not in here." And the question was from the students -- "We're all adults. Why not? Everybody else is using them." He said, "What are you going to do? Where's your back-up system when the calculator breaks down?" And so we have to go back to the basics. I need to know math before I start computing. How do you check it? And I think Assemblyman Ramos made a good point. I've gone on a computer, forgotten words. But I also went in Spell Check only to proofread it and see it didn't even pick up my sentence structure correctly. So I have the bad sentence structure. Everything is spelled right. And then I have words that have different meanings but they (indiscernible), things like that. So some kind of way -- as the individuals in your position and others -- you continue to help try to identify how to make the system better through your clinical research and hands-on, etc. These things need to be brought up. We don't hear enough of it anymore. I think if there was a great demand across this state -- forget about the

country. I can't worry about them. That's that (indiscernible) guy stuff. My concern is that if we say if we don't want it in the school systems -- we're not going to allow you to use those "instruments" for certain things. It's a no-no. And maybe some -- we've told educators that, you know, "We will have to penalize your system if that's what you're doing." Up to these kind--

Some kind of way we have to find a way to help parents get more involved in the education system. We have to -- even if we have to force it, to some degree, to happen. And we have to find a way to help teachers teach, because a lot of them want to teach, but we keep throwing all these instruments in front of them. You know, Bill Gates -- free computers. Okay, it's not that we don't want the free computers, but when are you going to use them, things of that magnitude? Hopefully our Innovation Committee and stuff like that will look more into that.

The next speaker is--

DR. SCHORR: It's Dr. Carlo Parravano, from Merck.

SENATOR RICE: Could you repeat that name for the record?

CARLO PARRAVANO, Ph.D.: My name is Carlo Parravano. I'm the Director of the Merck Institute for Science Education.

SENATOR RICE: Okay, Merck Institute for Science. Merck is still around? (laughter)

DR. PARRAVANO: Yes.

Thank you, Senator Rice, and Assemblywoman Wagner, and other members of the Joint Committee. Thank you very much for providing me with this opportunity to give you a few perspectives on the current state of science education.

I somewhat feel like this is last period of the school day, so I will really try to move through some of this a little bit quickly.

I've been a science educator for nearly 40 years now. I've been at the Merck Institute for Science Education about 20 years now. And prior to that I was a college professor. I'm a chemist.

I think it's fair to say that there has never been a more exciting time for a science educator as in the last five years or so. So what I would like to do is to start with trying to describe why there is such a sense of excitement in the science education field. And I think the major reason for that is that for once we're seeing the confluence of a significant amount of political progress around research on science education. I think it's very, very fair to say that over the last several years there has developed a very, very clear bipartisan sense that STEM education -- that is science, technology, engineering, and math education -- is paramount. It's very, very important for the future of our country.

There's also occurring, currently, a very, very deep, very comprehensive review at the Federal level of all of the STEM education programs. So there is now an effort to coordinate and to engender a great deal of cooperation, at least at the Federal level, so that we in the field do not see nearly as much duplication at the Federal level in STEM education.

And then as you very, very well know -- because this is something that you hear about every day -- there is some very, very thoughtful reflection going on regarding the current standards, which has generated the new Common Core, and the Next Generation Science Standards. And there is a lot of reflection going on around assessment.

And then probably most important -- and I've heard you refer to this several times already this afternoon -- there is a growing, emerging body of research that is now driving our work in STEM education. There is a rather august body in Washington, who is charged by Congress to do a lot of this research. And some of the products of that research are having a huge impact on items such as the Common Core. So for example, in 1999 a volume was published on how people learn. And, again, that kind of information has been very, very critical of the development of the standards. *How Students Learn Science and Math* was published in 2005, and then a very seminal publication on taking science to school came out just a few years ago. And that entire volume is devoted to answering a single very, very important question, and that is: What are the most effective ways of teaching science?

So just some of the most important messages from *Taking Science to School*-- Well, the first item has to do with: How do we define proficiency for a student in science? Well, there are four ways that we can say a student is proficient in science. The first is that he or she knows how to explain natural phenomenon. So, for example, knows how to explain the occurrence of seasons or the planetary system; or how seeds develop into plants. The second important aspect of proficiency in science has to do with evaluating scientific evidence. How robust is that evidence? We all need to have a healthy skepticism toward evidence. So a student who is proficient in science can not only generate that evidence but also question that evidence. The third aspect about proficiency is to have a more-than-passing knowledge about how knowledge gets generated in science. It's constantly changing; it's constantly being probed by experiments, by

investigations, and so on. And then finally, we would like to have our students be productive communicators regarding science knowledge.

Another very important finding from *Taking Science to School* is that children who enter school already have a very substantial view of how science is actually practiced. And this has big implications for our preschool and our kindergarten work.

Another important aspect is that the best way to learn science is by actually doing science. For too long I think we have looked at science as a body of knowledge. It is not only that, but it is also -- has to do with the process of generating this body of knowledge.

And then in terms of how science is best taught, there are a range of instructional practices which are really important to use in science.

So how do these messages look in terms of a classroom? Well, I really selected four, I think, important ways that science instruction can be described as being effective. First, and really very, very important, is that an effective science education has to capitalize on students' early interests and experiences. There is a saying which we've seen over and over again: Children are born scientists. We need to foster and nurture that interest in science when they enter school, and then as they move through grades in school.

Another important aspect of effective science instruction is that it has to identify and build on what students know. And this makes the task of a teacher exceptionally difficult, because you can't assume that every student who enters your class has the same experience level and the same knowledge of science.

Then another important aspect of effective science instruction is that it has to engage the student in the practice of science, and that is to be able to design investigations, ask questions, generate evidence, model, and so on.

And then finally, an effective science instruction has to provide multiple opportunities, both in the class and outside of the class, so that a student can continue to be interested in, motivated by, and engaged in science.

Now, in order for this kind of effective science instruction to take place, what kinds of supports need to be in place? Well, again, choosing some of the more important ones that this study identified-- Well, one of the things that has to be in place is a coherent set of standards and curriculum. Emphasis on the word *coherent*, so that the fourth grade teacher knows what the student learned in the third and the second grade and can build on that. That's the kind of coherence that I think is really critical to have.

And then teachers with high capacity, teachers who are skilled and knowledgeable not only in the content area, but also in how to teach. And then systems of assessment in accountability that are aligned with the curriculum; systems of assessment that actually inform instruction and also inform students as to where they are.

And then for science education, the third bullet is particularly important right now: adequate instructional time. What we are seeing in many classrooms is, because of the demands of the No Child Left Behind Act, the time devoted to science has been cut back significantly.

And then finally: equal access to quality science learning opportunities. And by that we mean that all students have access to facilities such as laboratories.

So stepping back just a little bit more, then if that's what needs to be-- If those are the supports that need to be in place, what elements do successful schools have to have in place in order for us to see that kind of science education? It should come as no surprise that the first bullet has to do with leadership. And in all cases it's the principal. So what we see that's important is a principal with a very, very strong vision of effective science instruction and an individual who can actually communicate that vision; a principal who can also bring the teachers in as part of distributed leadership. And then professional capacity among teachers-- Again, the operating word here is *among* teachers. So in successful schools, what we see are professional learning communities where teachers constantly work together to improve, to reflect on their practice. And then strong ties to the community, and that was mentioned several times before here in the Committee. A learning climate that is centered on the needs of the student, and constant instructional guidance for teachers that's based on the curriculum in the district.

This slide has a quote from a news release from the New Jersey Department of Education from last week. The occasion of this press release was the release of the 2011 NAPE exams. And what this calls for on the part of the Acting Commissioner is for the State of New Jersey to look very seriously and to adopt the Next Generation Science Standards. Dana has referred to the Next Generation Science Standards several times.

So there are a few features that I just want to highlight about the Next Generation Science Standards. They were released for public comment last Friday, and there are groups within the state that are now reviewing and providing input to those science standards.

The science standards really focus on what we call *core disciplinary ideas*. What we've tried to do is to identify what are the most important ideas in science. And there are a few ideas in physical science, life science, and earth and space science. And I've given you one example, and that is matter and its interactions. So these are ideas that are very generative, that will lead to very complex thinking on the part of the students.

Another really important part of the Next Generation Science Standards is the emphasis on the practices of science. And in our work with teachers, this is an aspect of the Next Generation Science Standards that I think they're going to embrace immediately because this is much of the kind of work that they're already doing. So if you were to walk into a lab at, let's say, Merck or any other science-rich corporation in this country, and you were to ask scientists to describe their practice, they would answer questions such as-- Well, one of the things that I do very frequently is ask questions. I'm asked to define problems. I spend a lot of time taking or generating data. I develop models. I use those models to describe nature, to predict. I explain the results of my investigations. I engage in arguments, and I communicate. So many of our teachers do most of those practices. They do them very well, but there are some additional practices that I think -- are some practices on this list I think are going to really be

very, very interesting for us to develop professional development programs around.

In terms of the -- where we are with the Next Generation Science Standards-- Achieve is leading the development, and Achieve is a Washington-based organization that is CEO-led, and also has a number of governors on the board and a very, very strong involvement on the part of New Jersey. And New Jersey is currently labeled a lead partner in developing this Next Generation Science Standards, along with 25 other states. As I mentioned, the first draft of the standards was released last Friday, and we expect that over the next 18 months or so we will be rewriting, revising the standards, and then they will be distributed 18 months from now.

So, finally, I think it's fair to really reflect on many of your comments, and that is, to a large extent, the standards are the easy part, even though the standards get 99 percent of the attention. It's what's there to support the standards that is really, really critical. And in many ways, that's what has embodied our work at the Merck Institute for Science Education, our work with teachers. So it's the impact of the standards on the curriculum. How do you write a curriculum? How do you develop a curriculum that supports the standards? How do you define instruction that is aligned with the standards? And then very, very important, as all of you know, and as Roberta showed us, teacher professional development to support those standards is really very, very critical. And then assessment that is aligned with the standards and assessment that really helps us to inform instruction.

So that's the extent of my comments, and I would be happy to answer any questions that you may have.

SENATOR RICE: Thank you very much, Mr. Parravano.

One question, as it relates to the Next Generation Science Standards and this national group that's coming together that involves all these wonderful governors that are going to get this thing in place with, I guess, some of the corporate counterparts and academics (indiscernible) such as those who are here: Do you participate with them?

DR. PARRAVANO: Yes. There are about 500 members around the states who are part of the writing team. And I would say that easily the majority of those 500 individuals are science teachers. So they're science supervisors and classroom teachers.

SENATOR RICE: And the reason I asked that question is because -- you say, "What are the implications," and then you started to talk about the need to have standards, how we have to address curriculum, how we have to address instruction, how we have to address teacher professional development and assessment. And I agree with all of those. And that's where you stopped.

Let me just say this: Not that long ago I was on a radio program -- my good friend and former colleague Senator Leanna Brown and Gerry Cardinale. And we were talking about education. But the reason I brought up Senator Leanna Brown's name is because we can talk about Republicans and Democrats. There are some of us down here who have our own independence in our parties, and she was one of those. She came to Newark -- I'll never forget it. This was when Senator Ewing was chair of the Committee. She came on her own volition after she had visited the

Committee, and we went to West Side High School and we did a tour. And what I didn't know, she went in and scolded everybody. She walked into the science lab and said, "This is not a science lab. My son--" And she took it personally because I think it was her son who was a researcher and very much involved. And because of her coming back here angry, working with the State we modernized that science lab. And so the reason I'm raising these is because it seems to me that people, though well-intended, with that kind of background -- there never appears to be anyone in the group to say, "This is wonderful. But if we're going to talk about the implications -- and particularly when we're talking about science education--" because you have your other education, but you're talking science now -- "then there is a capital side to science." And so if we don't talk about the environment in which science is taking place-- And that's why Senator Norcross and other members get a little upset. We can debate the money. But we get upset when facilities aren't being built. We can't retrofit some of the science areas. And when you go into most districts that are non-urban, you're going to find better science facilities.

And so I really wish that, as we try to take your knowledge and help formulate the kinds of legislation or whatever is needed -- resources here, that some people who are doing well now -- and not forget where they come from, and recognize that there are needs that go along with this. This is not in a vacuum. And that's my concern. That's why you hear me talking the way I'm talking today. Because it seems like people are looking at education -- the way our kids are doing in terms of remedial and failure; succeeding this way; and you do it this way-- There are so many other

elements that are connected to coming out and performing, and making more sense, and educating young people today.

So I just wanted to raise that.

I also wanted to -- when you talk about science education-- I'll never forget. I mean, this was a college project -- they tell me we should have done it before that. But I think a scenario was-- We're closing libraries throughout the state, and everybody wants to tell me about the Internet -- and here we go back to technology again. But I remember my first year at Howard University. And if you put that on a smaller scale it should be happening in grade school. We had to go back a number of years and actually do a paper on the most important science, or manufacturing, or technology (indiscernible) that year. That was a lot of research. I had to learn a lot of things too. But my point is that I wouldn't expect that to happen in grade school at that level -- you go back that far. It's just too much research. And our professor was criticized. We were doing a dissertation first year in physical science.

But we have to look at that. So I suspect-- I guess the question is: Do you have discussions about the capital needs to go along with this? Do you have discussions about programs that are being eliminated throughout the country, like libraries and things? And an expectation that everybody is going to run to a computer to do the research? Because every kid in New Jersey -- I know in Newark we closed libraries. But the libraries we have open -- if every student decides they wanted to go to the library tomorrow, they will be in line outside for blocks.

DR. PARRAVANO: Absolutely. And it's, I think, really very, very important you bring up the point of the need for facilities. I mean,

there are some investigations in science that we can do through simulations. So this is where I think the computer can lead us to some new things, as Roberta said earlier.

On the other hand, when an individual-- When you say that an individual has graduated and is career ready in science, he or she has to have some experience in an laboratory. And what we've done in the school districts where we have worked is worked very, very closely with the school boards, with the superintendent, with the science supervisors in order to try to ensure that the teachers have the requisite materials in order to do a very, very up-to-date and modern science program. And that program requires materials. I mean, for many, many years teachers went out and used their own money to buy instructional materials in science. The Achilles' heel of every science program is that they do not have the materials available in a timely fashion for the teachers.

So, for example, one of the districts that we worked with for a number of years is Linden. They have made it a priority to have what's called a *resource center* so teachers have the materials on an ongoing basis. The materials go out to the teachers in boxes, and then the boxes go back to the resource center and get refurbished, and then out to another teacher. And in the high schools we have developed some criteria for what high school labs should look like, what kinds of equipment should be in those labs in order to teach the particular kind of level of chemistry, physics, biology, environmental science.

There are a number of-- I mean, we've started to work with the Newark Public Schools. There are a number of labs in some of those schools that are very well equipped. There are a number of labs in those

schools that are well equipped and are not being used. And then there are a number of labs in those schools that I wouldn't even call labs. So the need-- So there is a real spectrum. But your point is very well taken. We have to pay attention to the facilities.

SENATOR RICE: Assemblyman Caputo.

Thank you very much, by the way. I appreciate that.

If you would also, through the Committee -- before you speak -- if you could maybe point us in the right direction or send us the information about what a lab should really look like and what it should really have to teach the kinds of things that we're talking about.

DR. PARRAVANO: Sure.

ASSEMBLYMAN RAMOS: Per grade level.

DR. PARRAVANO: I'm sorry?

ASSEMBLYMAN RAMOS: Per grade level. It's grade level (indiscernible) different things in science.

DR. PARRAVANO: Yes.

SENATOR RICE: Through the Chair, Melanie, would you make sure we get that for the Committee members? (affirmative response)

Assemblyman.

ASSEMBLYMAN CAPUTO: Dr. Parravano, obviously the Committee feels very similar about your presentation or they wouldn't still be here. They probably would have gone home already. But you have made some tremendous points.

What I'm interested in is how a district and how your company link, how they establish that link between the school district, the LEA, and your company. And what is set up-- How is it set up in terms of being

receptive? Are you invited in, or do you make an approach from the corporate office, or whatever? How is that being handled?

DR. PARRAVANO: The Institute is a separate, not-for-profit organization, and we're funded by the philanthropic arm of Merck, the Merck Company Foundation. And we've also been very fortunate to have funds from the National Science Foundation.

Initially, Merck's CEO was the individual who established the Institute. And the reason I bring him up -- Dr. Roy Vagelos -- is because he was a graduate of Rahway High School. And not only was Vagelos a graduate of there, but also Carl Sagan and Milton Friedman. So Vagelos has always had a very, very strong commitment to public education.

So the Institute is a way, as you put it, to link into the school districts. The commitment has been very long-term, and we started to work with four school districts that are in communities where Merck has a major presence; three school districts here in New Jersey and one in Pennsylvania. And since that time, we have expanded by an additional three districts. So now we work very, very closely with seven school districts.

So your question is: How do districts link in? What we've developed is what we call a *readiness index*. And what we do is we approach a school district and assess its science program and see whether they are ready, willing, and able to enter into a partnership with the Institute. As I mentioned, a year ago -- actually it's now two years -- we approached the Newark Public Schools, and asked the questions. We did an assessment of their science program, and we felt that by developing a partnership we could work with them to improve an already strong science program. School

district superintendents write to us and ask us whether we would be interested in forming a partnership.

ASSEMBLYMAN CAPUTO: That *readiness* word is very important.

DR. PARRAVANO: Yes.

ASSEMBLYMAN CAPUTO: In other words, you're being very selective about where you can win -- where you feel you can win. And I admire that because I think everybody wants to be successful.

But what I'd like to see is more of an assessment on need rather than winning blue ribbons in terms of what we're going to accomplish at the end, because we pick people who -- or students or areas where we feel we could be very successful. I think if we picked the hardest places -- you did in some cases like Newark -- and really made an impact, it would set a tremendous precedent for all the urban districts in the state and some of the suburban districts. Because once we're successful in these practices that need to be implemented in those areas-- As we discussed, every district is different, every school district is different, kids are different, cultures are different. So that seems to be the challenge, and it's been going on for many years -- the challenge of urban education. So I mean, I would like to see -- and I have no undue influence over where you go and what you do. But it's just my opinion that the toughest challenge should be the one that we want to take on. And when we show progress based upon the standards that we establish, and the assessment that we set up, and the way we evaluate from the beginning, I think it could be very, very helpful to teachers throughout the state and kids throughout the state. So it's just

something that I'd like to see a little more focus on. But that's not my decision, it's your Institute.

DR. PARRAVANO: Thank you for saying that. Our view of winning is not something that is immediate. We have made a long-term commitment to working with the Newark Public Schools. And if it takes 10 years, 15 years, 20 years to say, "We've won," we're there. The school district just prior to Newark that we began to work with was Elizabeth Public Schools. And there they have seen enormous -- enormous -- progress in not only the science education program, but much of what we do can also be applied to other disciplines. But your advice is, I think, really very sound and we do look at need in addition to readiness.

ASSEMBLYMAN CAPUTO: Thank you.

DR. PARRAVANO: That is part of that index.

But thank you.

SENATOR RICE: I'm going to let the Assemblyman speak, and then anyone else, and then we'll have closing remarks.

But let me just say this to you, because you mentioned a couple of names that put me on caution. I certainly know Merck for many, many years and the things you do. But there is also a privatization movement in this country that started back in 1955 -- to privatize public education. And so sometimes the help that we get from corporate America -- not from you as an individual -- is really with the intent to take over public education and taxpayer dollars. So I just want to be on record to say -- the question is -- you talked about Milton Friedman, the economist who came out of Rutgers years ago and worked for the Federal government and passed away about

two or three years ago -- lovely wife Rose, I think, is still around -- age 95 when he passed. Is that the Milton Friedman we're talking about?

DR. PARRAVANO: He was at the University of Chicago and won the Nobel Prize in economics.

SENATOR RICE: I think we're talking about the same guy.

DR. PARRAVANO: It sounds like it.

SENATOR RICE: He is the father of the privatization movement.

I just want to be on the record.

And you talk about Vagelos. He's the one who wanted to merge the institutions on the first Vagelos Report. Is that correct?

DR. PARRAVANO: Correct.

SENATOR RICE: Okay. I just wanted to be sure who I was talking about so I know who is coming into the City of (indiscernible). We will help them, but we've got to keep a good eye on them.

Assemblyman.

ASSEMBLYMAN WIMBERLEY: Dr. Parravano, I think Assemblyman Caputo hit it on the head. I know I'm a freshman Assemblyman, but for some reason Paterson seems to be falling out of the loop any time there is any type of innovation or anything that's going on. So I don't know if you've been contacted by them, but I know our facilities are antiquated. I taught for nine years at East Side High School. A majority of the labs were this -- didn't work.

Assemblyman Ramos could probably contest that the buildings -- we have a majority of -- a large amount of -- 18 buildings or something like that -- ridiculous -- that are 100 years old, so obviously they

don't have laboratories. So if you're looking for a challenge, I challenge you to come to the City of Paterson and work with one of the districts that are still under takeover. And if you want to accomplish something and really move something forward, I think we would be the perfect place for you to come in.

I have three sons in the public school district. And my fourth grader, I guess, is in the STEM program. And I'm very excited about it. But my concern, as somebody who is investing in my children and the public school district, is: How far behind is he from somebody who is just three miles away from us? And part of the problem is that we've broken down into a new experiment -- seven different superintendents over this whole takeover period. And what they've done is they've leased buildings all over town that are not really educational facilities. And in these facilities, obviously, they do not have science labs and facilities. So when you're saying -- Mr. Chair -- what the science labs look like, our kids have no clue what a science lab looks like.

Presently, we're going to take our most updated facility in our city, Roberto Clemente, and we're going to make it a grade 1-4, meaning that the kids who could probably most use this facility -- it does have updated science labs -- would not be used. We're not going to have kindergarteners utilizing biology labs and some of the things of that nature. And these are the things that are happening in the City of Paterson. And I think when you talk about innovation -- I think our kids are innovative because they get excited. When we have our science fair every year and I go and view the work of our young people in our town, it's probably the most excitement, academically, that I see during that period of time. I know as a

father-- I mean, my kids -- it's a big deal that they're competitive and that they are part of this science thing.

So when you talk about looking at places that will not get a \$100 million donation from anybody, or seems to be almost forgotten educationally -- I say we're kind of the nomads of this whole takeover in the State of New Jersey that -- consider us, come here. It's definitely a situation, like I said, where they're behind the eight ball. If you really want to see yourself develop and you want to do some good work for kids who may not get an opportunity, contact our superintendent or contact me, because I will be forwarding your information to him this afternoon when we leave here now. And I hope he's aggressively seeking your advice and your assistance right away.

Thank you.

DR. PARRAVANO: Thank you.

SENATOR RICE: Okay. We're going to end. We want to thank, first of all, those who took the time to come and be our speakers today. We learned quite a bit from you. Hopefully you learned some things from us collectively, as well as grassroots people who have to be the voice of the people. And we're trying to figure it out. We do not individually, collectively have a monopoly on brains up here. But we want to assure you that we're very much aware of the fact that those of you involved on the other side don't have a monopoly on brains collectively either. And that's why it's important for all of us to come together.

To the Committee members, if any of you feel as we move on -- once we get past budget and things like that -- that you would like us to come to the district and maybe take a look at some of the facilities,

particularly in areas of science and math -- because we have been told that this is what we have to do. I think we know that too. We'd be happy to do. I know we've had some wonderful experiences traveling to vocational schools and places like that. Because we talk about this stuff, but we have to be mindful of the fact that it's all connected to the vocational aspect of our education facilities as well. Some of the places we've gone, I thought initially it was the old vocational schools that came up during my time. "I'm going to vocational school." And I'm talking to the young men and young women, and they said they're learning this, and they're going to Georgetown University. And I'm like, "It's vocational school. Why are you going to Georgetown University?" Well, do you know what it was? They wanted to know more about Merck's science program, and they learned all this science stuff, but they're going to be a lawyer to come back and litigate. So there is a connection between what we do.

Why don't we start over on this side and have closing comments from anyone who may want to give them? And I really appreciate the members for being patient today.

ASSEMBLYMAN WIMBERLEY: Thank you, Mr. Chair.

Just briefly, I obviously have an educational background. I've been employed with the Paterson Public Schools for going on 24 years, 9 years as a special education teacher. In your presentation, Ms. Egreczky, you mentioned the special needs students, and that's an area of concern that I think everybody in the State of New Jersey -- when you talk about Chamber of Commerce and everybody -- every aspect. We have to really look at that area and how we can develop these young people -- be it vocational training, be it through a viable junior college track that will make

them good in our workforce. It's a major concern of mine because the experience that I have is that you have good kids that, unfortunately when they're special needs, are the same kids as the ones who are getting locked up because of their low educational function; because of their socioeconomic status at home; because of the lack of structure and support not only from family, but from the area that has caused these young people to be the ones who are at the forefront when you talk about gangs, when you talk about getting involved in things that they shouldn't be.

And half of it is part of their education. I found a lot of them to be embarrassed. And for them being embarrassed and being behind educationally, they'll be the ones to be the first to fight, first to steal something, be the first to drop out of school. There's an astronomical drop-out rate in the City of Paterson at 50 percent for black and Hispanic boys. Where do they go? You're saying that, on there -- the percentages that drop out -- 17 percent. Well, our overall unemployment rate is 16 percent for everybody in the City of Paterson. So I would beg to differ -- that we're probably close to 25 to 30 percent for those young boys 15 to 24 -- unemployed. So when you look at it from the Chamber's point of view, how do we get these guys back into this viable job production? And there are good ones. There are ones who do go and do the right things -- maybe vocational training, or go to the armed forces, or do other things to get the necessary training to be productive citizens.

So I think that portion -- when you talk about the educational system -- I just hope that they're not being neglected. There's a lot of money spent on them. There's a lot of attention put on special ed. Where do they go after they leave us? Where are they going? And that's my

concern. And I'm talking about those who perceptually appear -- the ones who can do something. Because I've had special needs students go on to get college degrees. If you're given the right tools and you're put in the right situation to be successful, you can, as a special needs person, move on and be a very, very productive citizen.

So I just think that portion of our student population has to have that attention, and particularly in the tougher situations. And I think it applies across the board throughout New Jersey, not just in the urban areas -- that where do they go from here when you talk about special needs. And putting so much money into the special needs students-- What can we do to make sure that they're successful after they leave our school district? Is it the junior college track, is it vocational training? Whatever it may be. But I think this is something that -- it just can't be a feel-good thing that we have. Teacher aides, special aides, individual aides -- and then when graduation day comes, it's just over. Where do they go from here? And that's my concern, and that's going to be one of the areas that I would be really concentrating on -- is our special needs population.

SENATOR RICE: I think that's a good issue: where do we go from here? And it's something that we'll be raising through Committee structure as well.

With that, let me go to Assemblyman Wolfe.

ASSEMBLYMAN WOLFE: Yes, I'd like to congratulate the Chairman for his reelection and the Co-Chair who is not here. I'm sure she'll do a good job. (laughter) She had to leave.

No, really, I've heard the three of you speak before several times. I really think it's very, very important. I think I'm going to say

something now which may seem kind of strange, but we need your help. You're the experts, and you're telling us what's really going on. And I think you need to communicate, perhaps through our Chairman or through Melanie, some things we could do legislatively to help you. I mean, you have some lofty goals. But it can't involve money. (laughter) No, no, I was only kidding. (laughter) I'm serious, I think we have these meetings, and we get a lot of input, and then we go away. But I think it's so important -- the kinds of things you've said -- really are talking about not so much the present, but the future and really where we're going to end up as a state. And I want to thank you because it was very comprehensive. And I certainly learned a lot, and I appreciate your input.

And, Dana, you're already on the State House State Wire.

MS. EGRECKZY: I am?

ASSEMBLYMAN WOLFE: Yes, you are, by the way. I don't think they got the other two. They're going to catch up with you out there.

Thanks again. I appreciate that.

Thank you.

SENATOR RICE: Assemblyman.

ASSEMBLYMAN RAMOS: Thank you, guys. I appreciate you guys coming here today as well. It's my first time serving on the Committee. I'm looking forward to my -- hopefully a couple of years here on the Committee.

One concern that I have is how it's-- You guys create the curriculum, but then when it's overseen by the State Department of Education -- and how it's translated to the classroom environment. I will give you an example of this. Over the summer this year we have our

professional development in Paterson. And obviously our Language Arts scores and our math scores are not where they should be, not where we want them to be. We want them to be much further, much better than where they are.

And over the summer teachers got professional development training, and it was redoing their lesson plans and how lesson plans should be color coordinated. Now, where do the students develop from teachers having color-coordinated lesson plans? That's just basically, in my eyes, show and tell. And when the State comes to visit your district, if you don't have demonstration of learning on the board, understand what's on the board, your school will get points subtracted from them -- or (indiscernible) be told that. There's no concern about the delivery of a lesson, all the things you guys spoke about today. Delivery of the lesson as far as the teacher goes. "Your DOL is on the board -- your DOL is on the wall today, but that's not what you were teaching in class." "Well, I taught it two days ago. I didn't have time to erase it and update it." And so there's a disconnect there between what we want our teachers to do in the classroom and what the State perceives as proper teaching in the classroom. Money was spent by the Paterson Board of Education on someone giving a professional development program on color coordinating your lesson plans. Red has to say this, blue has to say this, and black says that. And you have to meet those standards in the color coordination. That's where the disconnect is. And people are making money off of that. That money should be better diverted into creating the science labs that we desperately need.

I appreciate you guys coming out here today, but I'm concerned. I'm concerned about the practicality of what you guys are saying and the common sense of the Department of Education, or the lack thereof, in trying to deliver what you guys want to see in the classrooms.

I appreciate you guys coming out today.

SENATOR RICE: Assemblywoman.

ASSEMBLYWOMAN DeCROCE: Thank you.

And I thank the speakers for being here today. As you know, I am a junior Assemblywoman here, and I'm not a teacher or a psychologist. But I did work in government for 30 years, and I did teach many elected officials. (laughter)

With that being said though, I did work closely with boards of education, I oversaw many failed budgets. So I get it. Some of the areas that I look forward to working with the Committee and all of you involved is on the quality -- and I noted while we were going through today, some of them you did touch upon -- quality of teaching materials for the teachers; and the up-to-date materials that they receive is very important, and you did discuss that.

I also have a very grave concern and want to look very deeply into children with learning disabilities. That's very important to me. That is an issue that is in my own family. So it is very important to me, and I think that many children with learning disabilities get left behind because there is a lack of understanding. So that's something as an Assemblywoman that I will strive to work closely with.

Also, children's books and labs: We talked about that. And the fact that this body, as well as yourselves -- take a look at all of this and

make sure that there is fairness in the equality of books and labs across the state, whether it's urban schools or suburban schools. There are some suburban schools that struggle as well.

Also, discussing the core math, science-- I think the paramount -- you heard my comments earlier about electronics and computers. Remedial help, after school programs, I think, are very important based on all the statistics that show us--

And most importantly too, I think, is educating the parents of the different programs that are out there and trying to develop a stronger relationship between the schools and the families. I think that's very, very important.

I have two little grandchildren; one is 7 years old. And they moved in with me just recently while my son is moving, and I saw him struggling actually with math and how they were trying to teach him, with the little lines and the categories. So I do see that the core subjects are so important.

So I look forward to working on that, and I look forward to working with the Chair and the Co-Chair, all the members of the board. And we're all here to help the children of this state, because they are our future.

ASSEMBLYMAN CAPUTO: First of all, I really appreciate everybody's participation today, especially the people who have visited with us. It was very enlightening. And I'm also very impressed with the members of the Committee, even the new ones who have delved right into it very quickly.

What I see is public education is being so challenged because of the financial situation of the State. Because there are people here in government and outside government who want to see a shift of funds. The challenge is so strong. There are many people in the profession, and parents, and citizens, and taxpayers, and pupils who feel very threatened about their future. And anything that we're going to do in terms of making the system better -- we have to remove this tension and this competitiveness out of the discussion, because we can't get anybody to buy into change if they feel threatened, especially the teaching profession. We have to be able to involve them and the parents in the system. Right now parents don't know where they're going to send their children, whether it be a charter school, whether it be Opportunity Scholarship Act, whether they want their own public school. This all has to settle down, because this is not a battle -- this is something we have to solve. Because we can't be throwing our schools upside down because of politics. We have to rise above these differences and start to recruit people in the problem solving of making our schools better.

And I think you -- the participants who were here today -- really want to lead with that kind of intention. And obviously this is very impressive. So if we have more people like you who get involved, it's going to be a lot easier to settle people down and be open to whatever reforms that would probably be necessary once they understand that they're not being threatened, and that these court decisions and financing decisions are really having such an impact. And it's always been that way. For the last 30 or 40 years, there have been many court decisions that affected education. Now there seems to be the reverse of that kind of thinking. I

mean, what are we going to do? Have another administration four or eight years from now, and they're going to switch it again? We've got to have a common goal and objective in terms of where we want to go in education and stick to it and make it successful. We don't give things enough time, or enough focus, or enough ability to improve the system before we start tearing it up and throwing it away.

You can go into Newark-- And you say you were in Newark. You will find some of the best teachers in the world working in very difficult situations. I'm sure it exists in Paterson, and I'm sure it exists in Alpine, New Jersey. There are very good people out there working hard every day, and they don't feel very gratified at this point because they don't understand -- or whether they want to even take the time to understand -- why they're being challenged by the system.

So, thank you.

SENATOR RICE: Thank you, Assemblyman.

Senator.

SENATOR GREENSTEIN: I want to thank the speakers very much. I'm one of the people who are new on the Committee. And it really does seem to be a wonderful Committee. And I definitely look forward to working with our Co-Chairs and with all of you.

I really want to say hallelujah, because this Committee seems to be the one place that is talking about what is good about the public schools, what can be better, what is the hope of the public schools. As the Assemblyman was just saying, there are so many places trying to tear that idea down right now. Some of it is about money, but much of it is, I think, just giving up on the institution of the public schools.

I truly do believe in the public schools. I grew up in a housing project in Brooklyn, New York; went to the public schools all through -- I saw Brooklyn College there -- I went to the public schools all through and got a great education. I'm not positive if we were up to the types of standards that you're talking about, but we were the best standards that existed at that time. And I certainly always felt that I got a great education there, and went on to really good colleges and graduate schools. And I know that-- And I'm heartened by the idea that we can overcome some of the problems that these kids have and give them a great education in these schools. You see all these wonderful teachers here who have taught or are teaching in those schools. And so it gives me a lot of hope. And I think hope is the important thing -- to make sure that all of these kids have hope for a great career and a great future.

So I'm very anxious to learn more, and to work with you, and to tie the education in with the jobs. I think that is so important. And I think we can do that. It's a great mission for this Committee.

SENATOR RICE: Thank you, once again, all the members.

Let me close by acknowledging, first of all, to the friends of education -- one is an educator -- Montclair State -- just retired after 42 years. He comes out of a district that we call *SDA* or *Abbott* now. And I always find it very interesting that he could be so bright coming out of that district along with me, since we graduated the same year. And that is James Harris, the President of the State NAACP -- Conference of the NAACP. He's a good friend who comes from a technology background -- AT&T.

It was AT&T, right George? (affirmative response)

I come from the corporate side too, for those who didn't know that. And that's George.

It's good to have you here paying attention to this Committee, because we're still in that education struggle -- private versus public. And I wanted to say also that Assemblyman Wolfe is correct. We've been here a long time, and we've fought a lot of battles when it comes to education, and funding, and parity. We can't argue money anymore. We can argue that, based on court decisions and whatever other laws we put in place, we want those dollars there. But this Committee knows that we have to find direction, and we have to argue accountability now for the work we've done over the years.

Once again, I thank everybody.

This meeting is officially adjourned.

(MEETING CONCLUDED)