Committee Meeting

of

JOINT COMMITTEE ON THE PUBLIC SCHOOLS

"Presentations from specialists in the area of online/virtual education"

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Trenton, New Jersey

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11:00 a.m.

MEMBERS OF COMMITTEE PRESENT:

Senator Ronald L. Rice, Co-Chair
Assemblywoman Connie Wagner, Co-Chair
Senator Linda R. Greenstein
Senator Diane B. Allen
Senator Samuel D. Thompson
Assemblyman Ralph R. Caputo
Assemblyman Ruben J. Ramos Jr.
Assemblyman Benjie E. Wimberly
Assemblyman David W. Wolfe

ALSO PRESENT:

Melanie Schulz
Executive Director

Meeting Recorded and Transcribed by
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Hearing Unit, State House Annex, PO 068, Trenton, New Jersey

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ASSEMBLYWOMAN CONNIE WAGNER (Co-Chair): Good morning, everybody.

Will we all please rise for the flag salute? And please remain standing. I would like to have a moment of silence for Ambassador Stevens and all those who died in Libya today.

(All recite pledge)

Thank you.

Well, first of all, I'd like to welcome everybody back here today. And I know that, for me, it's like being the first day back in school. (laughter) So it's exciting; we're back for a new session. And we came in here today and many of the doors were locked. We had to unlock them and get ready to go. (laughter)

And also I hope that each one of the members of this Committee had a wonderful summer, a relaxing summer, and are certainly ready to get back to work.

Now today I just want everybody to know -- because I did receive many, many phone calls within the past week -- that the purpose of today's meeting is to define virtual learning. We need to understand what it is. I need to have a distinction between blended learning, hybrid learning, K-12 virtual schools. Hopefully today we're going to come away with an understanding of what exactly is virtual learning. Because you cannot have any regulations in place unless you understand the topic first of all.

So this will be the first session. What I hope to do in the next three sessions is as follows: The second session I hope to have different

groups in -- the NJEA, the NJSBA, and all the other groups that may see the world differently. So that will be the second session.

The third session I would like to go on the road and see what a hybrid, virtual school is like so that we can see it in action.

At the fourth session I would like to bring parent groups in and everybody else, and bring it all together. Now, this will be done every other month, and the members of the Committee and anybody else out here who would like to have a copy of the transcript of what happens here today receives one. Because I am sure that once you get the information you need time to digest it.

And one of the reasons that I thought that we would go with four sessions is that I don't know about you, but any meeting that goes longer than two, two-and-a-half, three hours -- I am not listening anymore. So therefore, let's confine it; we will ask questions today, but the goal is strictly to stick to the topic and find out what it is.

Now, I need to tell you that -- and I did express this to the speakers today representing virtual learning -- that I have lots of questions that I hope today we'll get some answers to. One which includes accreditation, funding, success ratio of virtual schools versus the brick-and-mortar schools, profits versus nonprofits, the monitoring of students, how do I know if the students are actually doing the work, the impact upon local school boards, and how does special education fit into the picture?

So these are the questions that I hope that we can address here today. We need to understand the pros and the cons and, most of all -- most of all -- how will our students best be served and how can they receive the best education?

So this will be a long journey; this will take us a while to get through. And I'm hoping that today we can get some of our questions answered.

We will hold off our questions on the panel until all three speakers have spoken and have provided us with a presentation here today.

So the first one who I'd like to call upon is Susan Patrick. She is President and CEO of iNACOL.

So Susan, it is all yours.

ASSEMBLYMAN RAMOS: iNACOL.

ASSEMBLYWOMAN WAGNER: Ina-- What is it?

ASSEMBLYMAN RAMOS: What is that acronym for?

ASSEMBLYWOMAN WAGNER: What is that for? Could you tell us? Here's your first question. (laughter)

S U S A N P A T R I C K: Thank you, Madam Chair, members of the Committee.

For the record, my name is Susan Patrick; and I am the President and CEO of a nonprofit organization that works in all 50 states and over 50 countries internationally, called the International Association for K-12 Online Learning, with the acronym iNACOL.

And I'm pleased to be here today. Recently I've been involved in a new commission set up by the European Union that's doing an inventory of virtual schools globally. And it's fascinating to see the growth in different models of education in the K-12 grade levels around the world. The things that are driving that growth are different in different countries, for different groups of students, and so there is a great deal of diversity in the kinds and types of programs that are out there. And I hope that my

presentation today -- and I look forward to your questions -- will help shed some light on the breadth and depth of the kinds of opportunities that are starting to emerge worldwide as different countries seek to prepare their citizens to be globally competitive and offer every child a world-class education.

So to begin: Our organization -- just to be transparent -- is a nonprofit with over 4,000 members. Over 2,000 of our members are teachers who are teaching online and in blended-learning environments. We are hosts to an annual award for the National Online Teacher of the Year. This year's Online Teacher of the Year is a science teacher, who is also a special ed teacher, in North Carolina, expanding opportunities in North Carolina.

We also work with traditional public school districts that are starting blended programs in all 50 states. And we work with the charter school community, independent schools, schools such as Sidwell Friends and others that want to start online programs. There are a number of universities around the country that are our members that are also offering online programs. So hopefully that breadth of the types and range of programs that are currently existing today will help shed some light on these terms and these ideas.

Our nonprofit is mostly funded by private philanthropy and we have three main aims. Number one is to help educate lawmakers on policy and advocacy issues, both in the U.S. and internationally. The second: We have a major focus on quality. We have published quality standards for online courses that are used in many states to review online courses; quality standards for online teaching that are used for hiring online teachers, for

helping to provide professional development, and also to evaluate and support those teachers. A number of colleges of education are using those quality standards for online teaching to create preservice programs to help online blended learning.

The third area is new learning models. And that is, as districts are looking at ways to help better serve students who may be far behind, to help serve students who are at risk for dropping out before graduation, and they want to use advanced technologies in their classrooms -- looking at new blended models, next generation learning models -- we have a group that does direct outreach to states and districts.

So that gives you an idea of the kind of work that we're engaged in. And I call this our *galaxy of members*. It shows you the diversity from full-time, online schools, to public school districts, to grantees for Next Generation Learning Challenges -- doing new blended models, etc., around the country and also around the world.

So I'm going to start -- taking a step back -- when I ran a distance learning campus for a university. It was really hard to know what was happening even across the state that I was in, in Virginia, much less around the country and around the world. And I think it's really helpful, as we strive to provide each of our students with access to a world-class education, which is the mission of our organization -- it is very student centered -- we have to keep in mind how other countries are looking at global competitiveness and what strategies they're taking to improve education across those K-12 grade levels.

And I'll start with a statement from the World Future Society, which has been collecting the most accurate set of data -- it is housed at

George Washington University -- from around the world. And it's been accurate 97 percent of the time in its predictions plus or minus 3 years. So this is a good set of data. You can see the top 10 breakthroughs, globally, that will change life as we know it on the planet over the next 20 to 30 years. Clearly, number one is alternative energy issues. Desalination of water-- When I was over in China, they're concerned about the Yellow River running out; in Jordan they're going to run out of water in the next 20 years. The only item that relates to education on this list is virtual education. Why? Because it is going to provide populations across the globe with access to the best teachers and internationally benchmarked content, and fundamentally change who has access to the highest levels of education. And this is already starting to happen.

So this is interesting: Back in 2004, I visited with the Ministry of Education in Mexico when I was with the U.S. Department of Ed. I was then the Director of Educational Technology. They had already digitized their entire K-12 content and curriculum. In every preservice university program for teachers, they taught those teachers how to use the digital curriculum in their classrooms and provided a laptop for every teacher. So this has been going on for more than seven years in Mexico.

In Canada -- in British Columbia -- 14 percent of high school students access online courses as part of their curriculum. In Ontario, the government has created four versions of every high school class and digitized that. There is one full version of every class that's in English, one full version of every class in French, and then a version that's modularized in English and a modular version in French. Why did they do this? It's so

teachers can personalize instruction in the classroom with those resources, learning far beyond a single textbook.

But the biggest users of that curriculum are actually students at night going back and getting extra help for reviews, looking at videos that are placed online, accessing a range of curriculum to help them understand.

And so going quickly across the Atlantic Ocean and the European Union -- really interesting. Back in 2006 one of our members, the International Baccalaureate Program, got a grant from a foundation and said, "We want to be able to offer the IB program to any student who is ready for that rigorous diploma." So we think we're going to take the best of the curriculum and we're going to move it online so we have rigorous, gold standard online courses for IB, and we're going to take what they call their *master teachers* -- their best teachers -- and give them the skills to teach online, interacting with students. They started with 26 countries; they're now in 125 different countries. And what happens is that these students still need the fluency of multiple languages, but now these students are collaborating in groups -- globally, online -- sharing their ideas, reacting to each other's essays, questioning thoughts. And this idea of providing our students with a global perspective, a global collaboration in that cultural awareness is really important.

When I speak around the United States I ask, "Does every student in your district have access to the IB program?" Because, literally, we could make that happen tomorrow through online learning.

In England -- really interesting. E-learning exports to China are 29 billion pounds annually. And what that tells us is that not only are the Chinese hungry for access to some of the best educational resources

anywhere in the world, but education is also becoming an export in many other countries, too. It's no longer a cottage industry -- even in K-12.

So in the Middle East our organization was invited to go to the Gulf States. We met with nine ministers of education and they are starting a new online school for students who are currently not being reached -- and that is girls. They're starting a new program providing great teachers and digital curriculum, to start reaching young girls who have never had access to education in their communities.

In India -- I think this is one of the most interesting developments -- they have a goal to provide universal access to K-12 education in the next 20 years. In order to do that they would need to build 200,000 new school buildings; they don't have the money to do that. So what are they doing? They are internationally benchmarking academic standards and curriculum; they are digitizing that as part of a project called Educomp; and they are training their best teachers -- they have teacher shortages -- training their best teachers to teach online.

When I heard Shantanu Prakash present this in 2006, they had a goal of working in a public-private partnership with the Ministry of Education in India. I saw him at a Harvard conference last fall and I asked him, "How's that going, Shantanu?" And he said, "They're reaching, in just six years, 12 million more students already," through the digital resources, through teachers and community centers. Where they don't have physical locations, they are bringing school to the children as a service.

And so looking at how you're leveraging teachers, using technology to reach kids no matter where they are, and this idea of a world-

class education and global competitiveness. And how other countries are reaching the strategy I think is really important.

What else in India? There was a project that was funded by the government five years ago to provide a $10 laptop or tablet for every student. They're down to the price point of a $35 Android tablet and they are starting to deploy them to thousands of schools in the rural countryside for students who do not have access right now.

In Hong Kong they've digitized their entire content and curriculum and they teach this in the schools as an effort for continuity of learning. It started with SARS, but if you think about the H1N1 virus and what happened in the U.S., if a student was sick, if a teacher was sick, you physically shut down the school for five days. In Hong Kong, they were able to continue teaching with a continuity of learning plan and do blended learning throughout the year. So the teachers used those digital resources, the students have their technology devices, and they learn every day using this dynamic curriculum with their teachers. But in the case of a disaster -- H1N1 -- they have this backup so that students can learn any time, any place.

South Korea -- very interesting -- has a national virtual school for teachers who are teaching online for students. They do a lot of tutoring in these programs. But as a nation, South Korea -- which is one of the top-performing nations in the world in terms of K-12 education -- is doing a full digital conversion. So they are moving away from paper-based textbooks because of a number of issues, that include the breadth and depth of the curriculum and the kind of engaging resources, and moving to full digital

content so their teachers will have those tools to better personalize instruction and help their students accelerate.

And last, but not least, is China. When I went in 2005 and worked on an e-learning initiative with the Chinese Ministry of Education, they have a goal in the next 10 years to reach 100 million more of their citizens through e-learning, especially in the rural countryside. How are they doing this? By 2004 they had also digitized their entire K-12 content and curriculum. They are working to train master teachers to teach online and looking to expand access across K-12 and higher ed.

China -- this is reported by the World Bank -- China may be the first country to succeed in educating most of its population through the internet. So it's not the computer teaching students in any of these cases, it's highly trained teachers who know how to use the new technologies to facilitate the personalization of instruction -- just like what's happening in many universities here in the U.S. One in three college students takes an online course. There are faculty members who are trained to use a learning management system and have moved those instructional materials online. Every time you move the content online you have to rethink the content and the curriculum that you're using; you have to rethink your assessment model in terms of essays, having students react to each other, doing project-based learning, building virtual teams and communities.

Susan Lowes, who is at Columbia University, is a researcher. And the kinds of collaboration and discussion boards that are possible online means that you can take those discussions, flip the classroom, use the classroom time with your teacher to have deep discussions, but also post and comment to other students' discussions. So we're getting into deeper

learning and a more mastery-based or competency-based model where students need to demonstrate their skills.

So in 2007 this article came out about the Chinese. And this is what I found in my conversations with the Ministry of Education. Its middle school in Beijing was encouraging their students to go online and use the internet to challenge what was in their history textbooks. The teachers were being trained to grade the students not on whether it matched what the textbook said, but to judge them on the quality of their arguments. This is the kind of rigor and creative thinking that I heard so much about when I was in China and how the education system is trying to change for that global competitiveness. You see, 87 percent of urban youth in China use the internet, and we're looking at numbers -- as we've seen in the Olympics and otherwise -- the ability to scale and compete in ways that are going to be very difficult for the U.S. Or put another way: The U.S. has 50 million total students in K-12 education -- 50 million. China has 60 million kids who are labeled as gifted and talented. So we need every one of our kids to be successful in order to compete in the future.

Singapore is probably the most advanced. Actually it's interesting; members from the Ministry in Singapore came to the U.S. on a study tour in the early 1990s. They visited schools in Poway, California, where they were piloting the first online AP courses using digital resources like curriculum pathways and discovery education in the classroom, and went back. Singapore has the unique ability to scale in a way that very few places do; I'll just put it that way. And they digitized their entire content and curriculum. But they have a 100 percent of their teachers learning how to teach online and blended. In the classroom, in their schools of

education, 100 percent of their secondary schools use online learning every day; their lockers have plugs in them to plug in their tablets and laptops. They hold e-learning week one week of every year where they physically shut schools down and ensure that teachers can teach and students can learn any time, any place. And they do that for disaster preparedness and continuity of learning. So had we had something like that in Louisiana for Katrina or others; regardless of where the people in the community ended up they could have reconnected and stayed in touch.

So it's really about using the technology to do what it does best, which is communicate, collaborate, and interact with people.

Seymour Papert, who is at MIT in artificial intelligence, has this analogy: The U.S., in the early 1950s-- So after World War II, the U.S. felt like it was entering an unprecedented era of global competitiveness. And the government put together a huge project and it had to do with trade with Europe, trade with England -- that England had faster cargo ships than the U.S. The U.S. invested a lot of money in making their cargo ships faster, bringing in their best engineers, and in 1952 they launched the pilot of their prototype new cargo ship. That same year, in Europe, the first cargo plane flew over the Atlantic Ocean in a fraction of the time. And in 10 years, that ship was pretty much put aside. And that analogy is, in our education system, are we building or tweaking the cargo ships of today, or are we providing for our kids the airplanes and the rocket ships for tomorrow to get them the skills that they need to be globally competitive in this world?

And so I'll turn to a quick national perspective. This is from the U.S. Department of Ed study -- the National Center for Education

Statistics, which surveyed the 15,000 school districts across the U.S. And 55 percent of U.S. public school districts are using online learning to offer courses that are otherwise unavailable for students; 1.8 million enrollments nationwide. So if you consider that there are 55 million students, 1.8 million enrollment is a small percentage compared to a lot of those other countries. But it is very pervasive and more in the main stream than many people realize.

What was interesting is the providers of these online courses -- 50 percent of them are in universities in higher ed. We work with programs at Northwestern, and Stanford's gifted and talented program, and Indiana University -- there are a number of programs and community colleges and other universities that are serving K-12 students, both in high school classes that are rigorous, but also in dual enrollment programs. Forty-seven percent of those courses offered in districts -- and districts may choose to use a university partner and a vendor partner -- are from private vendors; and then 33 percent are state virtual schools.

When I talk about online and blended learning, we talk about the definitions and understanding it. There are a wide range of programs that range on one side from being purely virtual, where 100 percent of the instruction is happening over the internet. When I'm talking about online learning, I'm talking about a teacher-led learning experience where the teacher has those skills to teach online and is working with students and doing the assessment on the work. So I created this graphic on some of the work that we do with our philanthropic partners, which is the student is at the center of this picture. And in designing high quality, online and blended learning environments we want student-centered -- meaning that

students have some control over the pace that they're working at so there's a little more flexibility there. But the four elements that are critical is what I call the *TPAC model*. The *T* stands for the technology, and the platform, and the infrastructure.

The *P* is for the people, which is the most important part of any online learning environment. The *P* are the teachers getting the professional development and having those pedagogical shifts that happen when you have new delivery models, new tools to personalize instruction. It's also the *P* in terms of the people running the programs -- the administrators, the principals, the people working in supporting the teachers; and the students in the programs.

The *A* is assessment. There are new assessment models that are really interesting and emerging in online and blended learning where you have formative or embedded assessment providing more data to the teacher, and teachers getting the skills to use that data to better personalize instruction. I like to think of it as *systems* of assessments. We're in this assessment box in this country for a lot of reasons. When you talk to our international colleagues-- When we think about assessment we need to be thinking about systems of assessments, and other countries that are high performing look at performance-based assessments where students need to demonstrate that knowledge through, like I said, projects, essays -- demonstrate "I know how to know and do this."

The kinds of data and the embedded assessments can help provide teachers with feedback on a lot of the basic skills, but we have to have the teachers there understanding what high levels of rigor and mastery look like across the curriculum. And this is why one of our biggest pushes is

for competency-based education and moving away from this one-size-fits-all model; and I mean in traditional, and even in online and blended. We really need to think about the whole picture, and how do we provide the best services and the most personalized learning environments for every kid with the best teachers.

So the *C* is the last piece, and it's the online content and curriculum. And sometimes when people talk about online learning they talk about one of those pieces but not all of them together. And it's really important that all of those elements are there in a strong and structural design that is teacher-led for it to be a high quality program. And our quality standards reflect this. But wrapped around that is the management and the administration of a program, and wrapped around that are the policies that allow programs to do what they need to do to best serve kids. And I'm specifically relating to policies around seat time versus competency-based education.

And so there are actually a number of states right now, including New York, Maine, New Hampshire, Ohio, Kentucky, West Virginia, Wisconsin, that are part of this partnership -- Oregon and Iowa are the other two states -- part of this partnership, called the Innovation Lab Network, where a number of districts are really working at student-centered personalized learning; mastery-based, high-level, world-class knowledge in schools that are shifting what next generation learning looks like through the competency-based models. So I'm excited about what the future holds in the U.S.

Here's a quick map of, specifically, online learning opportunities in the U.S. And the blue states are states that have state

virtual schools. So that's defined as a -- sort of the darker there-- The darker states are the bluish ones, and then there's the gold, and then there are ones that have the bars of both of them. New Jersey doesn't have either of those, so it's blank. It's one of the few that doesn't have either of those. But you can see that depending on where a student lives in the U.S. really depends on what kind of opportunities they have.

So if you're in Colorado you have access to both supplemental classes and full-time, online schools. If you're in Texas, there's a statewide program that's -- It's called the Texas Virtual School Network. It's for districts in Texas and other providers-- They get approved by the state. It allows students across the state to take individual courses, but not full-time programs. So Virginia has a state virtual school that only offers AP courses.

So there's a range of the students served; there's a range in whether they're offering individual courses or a whole program or a whole online school. And across all of these 50 states, in districts and in charter schools, there is a range of blended learning programs which Michael Horn, my colleague here, is an expert in and I know he'll talk about those models.

But there's just a lot of diversity in the kinds of innovative programs that are emerging. And we have an annual conference every year. It has 2,000 people; 47 percent of them were from public school districts looking for new ways to better personalize instruction. So I feel like there's a groundswell of interest coming from the districts themselves that's really encouraging in trying to do things differently.

Again, these circles relate to the number of enrollments in online schools, in supplemental programs across the country. Florida has over 200,000 individual enrollments in the Florida Virtual School, which is

the state virtual school program. North Carolina has over 80,000 enrollments. So depending on what state you are in really determines how many opportunities you have. I mean, that's the bottom line of these graphics.

This graphic is for full-time online schools, so more than 30 -- 32 states and the District of Columbia offer full-time online schools. If you look at Arizona, at Ohio, and Pennsylvania, all have much higher enrollments than many other states. So it really depends on the different types of students, and what their needs are and the kinds of flexibility that they're looking for -- whether they want an individual course, or a full program.

So this is just another graphic showing the differences in the size of enrollments from state to state, and their state supplemental virtual schools.

And to me what's so interesting-- When I'm traveling and talking to students and talking to teachers teaching in these programs, one of the things I find so encouraging is the teachers expressing how great it is for them in the 21st century when so much of the workforce has many options. You can choose a job that's full-time where you drive there and have to go in and clock in an office every day. But you can also have, for teachers who have taught-- Teachers who teach online have an average of eight years of teaching experience. Those who are caring for parents that may be getting older, those who have had children of their own and want some flexibility now have opportunities to teach individual courses in some of these programs. And others have the opportunity to, essentially, telecommute like much of the 21st century workforce in full-time, online

programs. And that is a really interesting perspective on thinking of the new employment opportunities that are available for teachers in these different settings.

What's probably most exciting though is the range of needs for students that are being met. And someone who I work with on big issues -- working with overage, under-credited youth, at-risk youth -- talked about how can we think about not just school as a building, but school as in learning opportunities for kids. And kids are really hungry for having their needs met and need different environments to do that sometimes. Online learning may not be for everybody, but it may work really, really well for some kids in different settings; and blended models may work much better than fully online for some kids, too -- having that range of opportunities open where students are able to access those services when and how they need it. And that's starting to happen and emerge in a number of states -- really trying to think and challenge ourselves to what we can do to provide these opportunities to kids.

A lot of the online schools started by serving students who were homebound, who were ill, who were performing artists and athletes. We had a number of Olympians this summer who were in full-time, online schools around the country. So it's not like it's one-size-fits-all; it's really different reasons why students are enrolling in these programs. And the supplemental programs are most often driven by that course being otherwise unavailable to the kid. So we have major gaps in our system.

Let me just wrap up here by saying we have surveyed the students, and I even find these survey results surprising. According to students, the number one benefit of learning online from a teacher is that

51 percent says it allows them to move at their own pace. If we know one thing about kids, it's that everybody's different and everybody moves at a different pace. And you may have a really gifted, smart kid who gets stuck on something and needs to take more time. You may have a kid who has been struggling for a long time and needs extra time, needs extra support, and it's really hard to do that for a single teacher in a classroom with a single textbook.

So learning online can give teachers the tools to personalize instruction and give that kind of support. But the kids love the ability to have that flexibility and work at their own pace and get extra help when they need it.

See that 35 percent felt like they got extra help taking online courses. And even 19 percent said they took online courses to get more attention from teachers.

And I think if you talk to anybody who is teaching online, they feel like they're interacting with their students more than they ever did even in a face-to-face classroom. And kids are so adept in this online environment, maybe we have to worry about not burning the teachers out because they're constantly interacting with everybody. And that's all a good thing, in my opinion.

There is so much interaction in these high-quality programs, and you're really giving kids access to the best teachers. So this pent up demand is really driving the growth and the future of online learning.

Let me wrap up there, because I think that's a pretty broad international and national perspective, and turn it over to my colleagues.

Thank you.

ASSEMBLYWOMAN WAGNER: Thank you very much, Susan.

Our next speaker will be Michael -- Michael Horn from the-- Author, and co-founder and Executive Director of the Innosight Institute.

M I C H A E L B. H O R N: Thank you so much, Madam Chair, and thank you to all of you for the opportunity to speak this morning with you.

Thank you also for the moment of silence to start off this morning in light of the events yesterday overseas.

I've come to this perspective from a different one from my colleagues here. I've worked with a professor at Harvard Business School over the last many years, Clayton Christensen, who has become the father of this body of work known as *Disruptive Innovation* -- and innovation more broadly. And the pursuit of those studies that he has been engaged in has been around: How do you make innovation far more predictable and successful in sector after sector?

And when we approached public education, the question that we had and that we came to was -- using these theories from our research that had been borne out in lots of sectors, from the for-profit realm to the not-for-profit, and to governments around the world -- could we help apply these principles and allow public schools to really harness them to make great strides forward in the ways that they were educating students, and to handle some of the problems they were facing in their midst? And as we were doing so, one of the things that we keyed in on was this process of disruptive innovation in particular, which I'll define briefly for the Committee as the process that's transformed, sector after sector, from one characterized by complicated, expensive, deeply centralized inaccessible

products and services that could only serve a limited few; into ones that could serve many, many more people with things that are far more affordable, convenient, accessible, decentralized and, therefore, far more beneficial to many people who otherwise would not have access to these services.

This is the process that's transformed the computing industry over time, for example -- just to give a concrete example. If you went back some 50, 60 years ago, mainframe and minicomputers would have dominated the landscape that literally cost a couple of million dollars, would have filled an entire room. And then the personal computer came along as a disruptive innovation to allow all of us to have computing at our fingertips.

Similarly, we've seen it transform the car industry; we've seen it transform the way we receive mail and communications. You can go, sector after sector. And what was interesting to us was that we were seeing online learning in K-12 education as having the same principles of disruptive innovation that we had observed in so many other sectors.

And what interested us in that was, that because it was exhibiting so many of those characteristics, it ought to have a lot of those transformational principles, as well, with it to really allow the public school system to educate students in ways that had not been possible before. And that's how we've approached this question and, indeed, online learning has been following those patterns from disruptive innovation in very key ways.

So a fundamental observation from our studies of disruptive innovation was that these innovations start by serving areas of what we called *non-consumption*, where the alternative is literally nothing at all. And

so if you went back to personal computers, the first personal computers were sold as toys to children and hobbyists who couldn't afford the $2 million machines that IBM was pushing, and so forth. But for them this was a great way to get their start. Similarly, Toyota, which was a disruptive innovation in the automakers market, first offered their Coronas to people who couldn't afford the gas-guzzling cars coming from Detroit.

And we saw the same thing in K-12 online learning; when Susan was talking about how, in developing countries in particular, online learning was being used to level the playing field for all students. It's a classic area of non-consumption where literally 200 million students around the world do not have access to any secondary school, period; 70 million students do not have access to primary school, period, around this world. And so online learning is a huge way for them to start to get access to education, and a high quality education to boot.

In the U.S. it's a little bit more challenging because schooling is largely compulsory. We've largely had everyone have access to it. But it turns out that if you look at the course level, the class level itself, we actually see lots of areas of non-consumption in U.S. K-12 schooling.

And so I've just put up a list there of a lot of those areas in non-consumption that we've just seen in our research over the last many years as we've been out in the field talking to educators. And, basically, if you read *Disrupting Class*, the book that we initially put out on this, we had maybe four or five of these listed, and then we just got another bullet point every time we traveled around and a teacher came up to me and said, "You know, you missed another one, buddy." So I add another tick there because they tend to be right.

I just thought I'd talk through a couple of these, briefly just to illustrate the point.

Credit recovery is a huge area of non-consumption in our public school districts, particularly in urban school district where students will fail a course and have no meaningful way to recover the credit. And often in the past, what's happened is a student would continue to progress with big gaps in their learning, which would put them further behind. And by the time they got to graduation without the requisite number of credits to graduate, we had big problems. Credit recovery is a big area where online learning has been planting itself to allow students to get back on track.

Dropouts are another huge area; it's a rather well-known area. New Jersey does far better than the rest of the nation in terms of graduating its students. But there are still about 14,000 students a year who do not graduate on time in New Jersey -- a big area of non-consumption where you can start to wrap in alternative school models to start to serve these students in different ways and based on their different needs.

I'll just do one more on this, which is the AP and advanced courses. Advanced placement courses-- It's fairly well known that there are 34 of them; I haven't come across a school yet that offers all 34 of them, and yet there tends to be students in those schools that want access to that learning. And online learning has been a great way to give them that access.

The story is actually far bleaker than that. I think Susan would tell you that 40 percent of schools don't offer an AP course; 26 percent of our high school students attend a school that does not offer an advanced course, period -- defined as anything above biology -- so forget about chemistry, forget about physics; defined as anything above geometry -- so

forget about algebra II and calculus. And defined as any honors English class, period. So there is huge opportunity. And what we're seeing is that a lot of the looming budget cuts and teacher shortages that are facing different localities across the country right now in different ways are actually increasing these areas of non-consumption and increasing opportunities for innovation. And we're seeing that the online learning is growing in the classic way that a disruptive innovation does, which is to say it follows an S-curve.

And I'll go through this rather quickly, but in the early years, an innovation creeps in, it's not particularly good in the early years so there's a fair amount of iteration. At some point it really figures it out and people rush in to adopt it, and then it levels off at the top following an S-pattern. The challenge, obviously, if you're in the early part of that S-curve, is how do you know if one is, in fact, developing or if it may be a straight line to nowhere? Or it could be a relatively fast S-curve or a slow-moving one.

And it turns out that there's a way to forecast the flip that linearizes this S-curve in the very early years of its adoption. And what we've seen is that that's exactly what's happening with online learning adoption across this country in high school.

And so in 2008 when we wrote *Disrupting Class*, we made this prediction that by 2019 50 percent of all high school courses would be delivered online in some form or fashion. It drew a lot of attention at the time as people said our public schools could never innovate that fast, and you guys are being way too aggressive.

Within about six months, people started coming back to us and saying, "You know, we still think you guys are crazy, but for a very different reason. We think you're now too conservative with your prediction that public schools are actually adopting this significantly faster than we had appreciated."

I tend to plead the 5th on it. I think that we're going to be right, plus or minus a few years on either side of that prediction. But I also think it misses the point. And the point is that there's a bigger opportunity with introducing online learning -- which got us really excited with it -- which is to handle this fact here: which is that we know that each individual student has different learning needs at different times; all of us do. What I've put up here is a list of the academic food fights that professors play around the country over what these differences are. But what no one disagrees with is that all of us enter a learning experience with different levels of background knowledge -- that's, of course, true here, too, as we explore online learning. We all absorb information at different rates, we have different working memory capacities, and so forth. And if you think about that, you would assume that if our goal, as it is now, is to educate every single child successfully to compete in the knowledge economy and to be a citizen in our democracy today, that we would have an education system that would customize for these different learning needs at different times.

And yet, quite literally, our education system was modeled after a factory model in the 1800s and the early 1900s to literally process students by batching them together in what we call a classroom; add value to them in the same way, at the same pace, every single day, and then ship

them out the other side. Now, teachers know that this is not the best way to educate students, and they fight against structure; but it's the system that we've put in place. And interestingly enough, the system produces the exact results that we would expect it to, because it's literally designed to sort students out at various intervals and not have them pass at various intervals, and so forth.

Now, what we're seeing is that online learning is really breaking apart that structure and really turning this on its head, because it's inherently modular and, therefore, is inherently customizable for different learning needs.

What I've put up here is a screen shot from the Khan Academy. I'm not sure how many of you are familiar with the Khan Academy, but basically this guy, Sal Khan, out in -- now in California -- started making YouTube videos for his cousins in New Orleans to tutor them in math, and it just took off virally. It now gets 5 million unique users a month going to the site around the world. And it's being translated into 8 or 12 different languages now.

This is a screen shot from Los Altos school district in California that has adopted the Khan Academy in a blended learning model in all of its 5th grade classrooms, and even in 6th and 7th and 8th grade now, as well. And you can actually, literally see the individual different trajectories of the students moving through the material. And if we were able to focus in, the student highlighted in blue there actually started the 5th grade class at the second to the bottom of his class; and as you can see, he actually finished 3rd from the top. But the progress wasn't even; it paused at certain times, struggled with different concepts; and the online learning, by

being inherently modular, was able to adjust for these differences and really create the student-centric experience which I think is really, ultimately the purpose of this.

Now, the big question to me then is, will online learning fulfill this promise? The potential is huge; will it actually deliver on it? And I think there are some optimistic notes, and then there are some very open questions, if we're being candid.

The optimistic notes are that, just like in every one of our other disruptive innovations we've studied, the technology and the solutions are improving very predictably and very quickly. So just as the personal computer -- when it first came out, it could barely do word processing and now it way overshoots most of our needs; and we have a disruptive innovation of the phone in our pockets to tune boring speakers like myself out when need be -- we're seeing online learning predictably improving.

If we had come here six years ago or so, we would have largely talked about online learning as a distance learning phenomenon. Increasingly, that is not the case. Online learning is really about a blended-learning phenomenon. And I know that there has been a lot of attention on the full-time virtual schools in New Jersey. We've done some calculations on the growth on full-time virtual education in this country, and our very clear conclusion is that it will only be a niche offering at most, at its height. And the reason is that most students need a brick-and-mortar place to learn. Their parents need that, given the realities of the home environments from which they come, and the students want it because they want the social experiences and so forth of being around their peers.

And so the bulk of online learning is growing in blended learning environments. We think full-time virtual schools are absolutely an imperative option for those students for whom the brick-and-mortar experience does not work, and it's very clear that a clear percentage need those experiences. But we're not talking about a huge number that is going to overrun the public school system that we know. This has led us to a lot of work in blended learning out of our think tank over the last several years -- in defining blended learning, trying to bring some definitions so that we can talk about it in a coherent way. Because everyone sort of has their different model of blended learning, which makes it an interesting conversation when you're talking about it. And I'll clarify upfront that when I use the words *blended learning* I'm using it as a synonym for *hybrid learning;* and I prefer the term blended learning. I think it's a more accurate depiction of what's actually happening, but I treat them as synonyms.

And our definition is really online learning in brick-and-mortar schools; but just to get more technical: It's a formal educational program in which a student is learning at least in part through online delivery of content and instruction, where they have some element of student control over the time, the place, the path, and/or the pace of learning. So the thing that really changes is the pedagogy, and makes it student-centric; and at least in part in the supervised brick-and-mortar facility away from home -- in other words, a school with a teacher. Those are the critical parts of blended learning.

Now, importantly, I'm not talking about-- When I'm talking about blended learning I'm not talking about what I'm doing right now: just putting an electronic whiteboard in front of the classroom and beaming

online curriculum at students. We haven't actually fundamentally changed the pedagogy itself to allow for that time, place, path and/or pace. And I'm not simply talking about putting in digital textbooks or one-to-one laptops. Those may be important enablers of blended learning, but just because you have the technology does not mean you're, in fact, doing blended learning. It's really that important shift to that student-centric nature, where students have some element of control over the time, the place, the path, and/or the pace. And, as a result, the teacher's role changes to working much more one-on-one with students in small groups rather than delivering one-size-fits-all lectures. It's a much more personal job, which is what teachers consistently report in these environments.

Now, I've cut this out of the slide deck just to be brief, but there are lots of different blended learning models exploding across the country right now in district schools and charter schools. We're seeing an unbelievable amount of diversity. And we've categorized it in a report called *Classifying K-12 Blended Learning*. The four broad categories we're seeing are *rotation models,* which are, largely speaking, where students are rotating between different modules, one of which is online learning. The others tend to be project-based learning or small group instruction with teachers. We're seeing what we call a *flex model* where students are maybe learning a lot of the content from the online delivery, but really the teachers are there to help pull them out as they need different experiences -- whether that's a tutorial with a bunch of students who are all stuck in the same place; or to create a great group discussion among a heterogeneous group of students who are all in different parts of the curriculum, so with those you

can have those robust Socratic discussions and so forth where you add value.

And we're seeing self-blend online learning where students are just taking one, two, or three online courses and the rest in the traditional environment.

And then finally, in a little bit of cases we're seeing what we call an *enriched virtual*, which is really where full-time virtual schools have added a brick-and-mortar component for students to come in on one, two, three times a week to check in with their teachers in person and to have some of those collegial experiences and so forth. That's probably the smallest implementation of blended that we're seeing.

Now, the second way that technology is predictably improving is the communication vehicles are improving significantly. If you went back and looked at the best research on how to construct great online learning or e-learning experiences from 10, 15 years ago, the manuals all talked about asynchronous online learning. Basically, synchronous -- actually working with teachers live and students -- it was sort of a bit part of the landscape. That's really not the case anymore. We're seeing virtual classrooms be created with more and more robust features to them that allow unbelievable communication from students to students, students to teachers, and teachers to teachers.

And it's pretty exciting where that's going. Just to think about where this could go in the future: If you went back some seven, eight years ago and remember the AOL instant messenger -- where I used to work, at America Online -- and there's a little video button you could click. And I'm guessing that the majority of people in this room would not have ever

clicked that thing, because it wouldn't have worked or would have crashed your computer. But now the majority of us have Skype on our computers and it allows us to literally have ubiquitous communication with anyone in the world, anywhere at anytime through video. And with 3D and touch screens coming online, where this could go and the communication possible for socialization could be unbelievable in the future.

The third way we're seeing a lot of improvement right now is in the content itself. Really, the key to becoming a student-centric system is to make this highly engaging and motivating. And so this is just a screenshot from the first-ever video game-based American History course from the Florida Virtual School. In it, students run 10 missions to save American History from becoming corrupted. (laughter) Yes, many people joke that it's too late, but-- (laughter) But for many students-- They actually did an enormous amount of research on this with the University of Florida system -- with brain scan technologies and pre- and post-assessments of different sorts, and saw huge gains in various populations of students. The important thing is that it didn't work for everyone -- and that's actually the point, which is to offer those customized learning opportunities rather than seeing that as a bad thing.

The question about whether this will ultimately produce the student-centric system really gets down to the policy implications of this work. And in my opinion, if we continue to -- and from our research we've seen this as well -- that when you continue to regulate things or have people innovate based on input or process-based standards, you tend not to get the innovation that really leapfrogs the current system, because you've defined

the solution before they can even get their start. And so our school system has largely been beholden to the old metrics based on inputs.

And the second part of this is that if you were to regulate, say, the personal computer by the metrics that made the mainframe computers tick, it just wouldn't have made any sense and you would have created another mainframe. So just to make the analogy complete: In mainframes, larger was better; more expensive was better. Personal computers were the exact opposite: Smaller was better; simpler, easier to use -- those things were better. It wasn't, "Could you create the hardest thing for an engineer to use?" anymore.

And so a lot of our metrics were built around the old system which made a lot of sense then, but aren't built around student learning and every student succeeding. And so we talk a lot about moving beyond the seat-time based system and a lot of our geographic bounds to really an outcome-focused, student-based system where you're looking at the growth of each individual student. And I'll say that from my perspective, we ought to, at the outset, be actually putting a higher accountability bar on the online learning providers in the sense that -- really looking at student growth and paying based on student outcome. Florida has done this with its Florida Virtual School where, in the best manifestation of the bill, they paid, in part, based on the actual student successfully completing the course. And so some portion of funds were actually tied to that. And because time is variable, this makes sense in this sort of a system.

The last thing I'll say on this point, and then I'll make the big point that I think is the biggest regulatory issue -- is on a couple of just quick things to run down. One of the things that I think is really

interesting-- And this is the role of the teacher. You heard from Susan how critical it is, and I absolutely agree. Online learning is actually a huge opportunity to give much better professional development to our teacher workforce. Because the reality is that the way that professional development has been historically done is someone has come in two, three, four times a year and delivered some sort of lecture about a book that they had just written -- sounds like me -- and teachers would often sit there in the back, grading homework or something like that, tuning out what was not exactly relevant for what was actually happening in their classroom.

With online learning we can now deliver just-in-time professional development tailored to the exact problems that teachers are actually facing in their classroom or with individual students, which is a really exciting opportunity.

The other piece of this is that we're seeing an unbelievable array of possibilities for new teacher roles. And really what I liken it to is what Susan said, which is that we're allowing the computer to do what a computer does really well -- to create more room for teachers to do what humans uniquely do well. And that's to really work with students, to motivate them, to help them find different pathways through the material to unlock them. To figure out what's going on that may have nothing to do with academics, that's tripping them up in their lives; because we know a lot of students don't learn for reasons having nothing to do with cognitive capacity but other outside influences.

I'll say a line about funding as well, which is the-- So with full time virtual schools, it seems reasonable to create a different funding model that takes some haircut off of the full-time students -- maybe 15 percent or

so off of what you would typically pay for a full-time experience because they don't have the brick-and-mortar overhead. But they of course have different overhead in terms of the technology and doing their own teacher training and stuff like that. So it's not like you can totally shortcut and just make it the reduction of courses, because these schools still have to provide full-time, wraparound services to really help the students. But it certainly is less expensive, and that's something that New Jersey should look at as it explores that area.

The second part is that insofar as we're looking at blended learning schools, it's really a nonsensical categorization to regulate it differently from traditional brick-and-mortar schools. Because what we're seeing is that school districts around the country right now are just actively doing this. Teachers are grabbing onto it, flipping their classrooms, creating rotation models, creating flex models; and to regulate it differently would actually be to basically crack down on teachers themselves doing what they think allows them to better differentiate instruction for students that makes their lives easier. We had a state in the Midwest that wanted to create a pilot program to study blended learning and they were going to initially create a 25-limit cap on the number of blended learning schools. And it would have been ridiculous, because literally it would have stunted the progress of districts across the state which had been doing blended learning for years.

And so having a different categorization scheme or funding scheme just doesn't make sense, because you're still in a brick-and-mortar environment with teachers providing all the services of transportation, food, and so forth that you otherwise would be.

And then one point on socialization -- because this has been the biggest shock for me -- which is that I visited a lot of blended learning schools. And one of the things that I was worried about was that you would sort of walk in and it would be kind of the *Night of the Living Dead,* where you just had students staring at the computer screen, clicking, watching a video, clicking, watching a video. And it's nothing of the sort when it's done really well. And that's what just has blown me away. When you walk into Los Altos, California, the school district that I've taken some of my friends to visit as well, students there are working in peer groups with each other, only now the peer influences are no longer on "it's not cool to be smart," but "How can I get you passed this problem you're struggling with in the Khan Academy Challenge you're on right now?"

I was at a school in Morgan Hill, California, where students were working in groups to unlock a problem they had all faced, where they tackled something bigger together. And teachers were really able to set up these personal experiences for the peer-to-peer tutoring in some really neat ways, which then freed up even more time for the teachers to really be spending time with the students who needed it the most -- where they couldn't do so before, because they were worried about behavior problems and things of that nature. And that's just what stunned me so much about it. There are videos online of Carpe Diem, which is a school I'd recommend checking out, where students talk about this in pretty eloquent terms. But it has blown me away.

The last part, I'd say, is really on the seat-time issue that Susan raised, and I think is the number one policy issue for iNACOL. And I would agree with this, which is that we have to move beyond the seat-time

system because, as she is so fond of saying, we've been measuring the wrong end of the student for the last 100 years. And I'll let that sink in for a second. (laughter)

But right now we have a system that's fixed-time variable learning. So the factory model system -- we deliver content to students, we test and assess, and then students progress to the next body of material, the grade, the subject -- whatever it might be -- regardless of how they've done. And we get the results only afterwards and see what they've done. And they have what we call the Swiss cheese problem in education: big holes in their education.

And we need to move to a competency-based learning system where time is still important -- we still need to make sure students are making progress -- but it becomes the variable so that they move on once they've truly mastered a concept. And learning becomes what we're really interested in. And so we still offer learning experiences for students; we certainly still test and assess. But now the testing and assessment, the job of it, is actually to get the feedback right away so that we can go back and remediate and help students right away with what they struggled with, or allow them to move on and figure out what they should move onto next. And then afterwards they progress to the next body or subject of material once they've truly mastered that material.

And so we have a big opportunity right now to innovate with this before us. And I just applaud all of you for taking the time to study this over the next several months, because there is a big opportunity. But really setting up the right outcome-based processes that really focus on student learning above and beyond is really the critical thing here. And

then allowing students to get the different options for their different needs -- given that one size does not fit all for a student, and certainly doesn't for a school experience or a teacher experience either.

So thank you very much for the opportunity.

ASSEMBLYWOMAN WAGNER: Thank you very much, Michael.

Our next speaker will be Jeanne Allen. She is President of the Center for Education Reform.

All yours.

J E A N N E A L L E N: Thank you, Madam Chairwoman, members of the Committee.

It is a delight to be back with you again. And let me just commend you as well, along with my colleagues, for taking an important, needed, in-depth look at this issue. Senator Rice, good to see you again. Thank you for being here and listening hard to these important issues. I know you hear a lot about it on a regular basis.

Very quickly, about my background: I'm President of the Center for Education Reform which, since 1993, has been the leading advocacy group for substantive structural change in U.S. education, very much influenced by my upbringing and public school education in New Jersey.

Upon leaving New Jersey and finishing college in Pennsylvania, I worked for two New Jersey members of Congress -- Jim Florio and Marge Roukema. I later worked for the U.S. Department of Education, the Office of Higher Education, before founding CER. And also, I'm happy to report, I think I counted -- this will be about my 20th time in the State capital over

about the last 10 years, including a stint working with the great, wonderful Jack Ewing, Joe Doria, and Dave Wolfe on charter legislation in the early days. So I don't come here--

ASSEMBLYMAN WOLFE: Thank you very much. Thank you. (laughter) I love this lady.

MS. ALLEN: In the not-so-early days. (laughter)

So I don't come here with a lack of knowledge about the challenges and the issues that you're facing; nor do I come with a lack of knowledge, because I hear consistently from friends, family, and, in fact, members and supporters we have in New Jersey -- both pro and con -- about what's happening across the state.

And we are not a one-size-fits-all reform operation. On a very modest budget of roughly $3 million -- which comes from private individuals, private foundations, and no one with an ax to grind -- we take money for things we believe should happen; if they don't want to pay us to do it, that's okay, we'll find it elsewhere. But I'm also an equal opportunity taker, and so sometimes when you hear about people who come and have an agenda -- let me just say that my agenda is actually about great reform efforts. And one of the things that I think is tremendous about this debate is both your hearing it, but also, Chairwoman, to your point about going to see it next time: There is just no one you could actually hear from unless they've actually seen it and watched it happen.

I made the comment earlier that I've said to advocates -- and we advised the mom-and-pop groups who are trying to develop these ideas, we advise teachers and parents when they call us and want to know what to do, we advise nonprofits, we advise for-profits -- all free. Whoever wants to

know what's happening, we support them. And I say to all of them, "You all need to put this under glass and transport it around on a truck so people can see it, because you simply don't understand the concept." And I personally did not until I actually saw it in action.

So I've actually been a virtual school parent. When my son Teddy missed, or I should say messed up -- he'll be angry at me for saying this publicly -- on a 10th grade English course, his only choice in order to make sure he went to the 11th grade English course was to actually make up a course in the summer. Not a stupid kid by any means. But he actually took an online course. And I had to be the parent who said, "Go online, do this, do that; look what happens." It turns out the teacher was there before me doing that.

Since I've actually seen that happen with many people -- I've actually visited a lot of blending operations, as well as Michael and Susan have -- and it's really extraordinary to see.

And I'll say one comment just as a starting, and I'll take you through some data. You've heard a lot of this, and I know you've got lots of questions, so I won't take up tons of your time. But teachers actually end up teaching more and having more time. More teachers teaching more with more time. It's a concept that you don't tend to hear a lot when this is being bandied around the press. But the classroom I was in with the Alliance for Excellent Education-LA -- which was a largely disadvantaged school that was on the same campus with five other traditional public schools in Los Angeles -- piloting a blended learning charter school this year-- There were 35 students in a classroom, in a science classroom, broken into groups of 10, 12, and 12, respectively -- or 11, respectively; a

full-time teacher; a graduate student getting her student teaching work; and an administrator who floated through that and other classrooms at the same time. And 10 kids were in a self-paced area doing lab work on the computer; another 11 were in a lab area being monitored and managed by the master teacher; and then the others were actually having that information that they just got reinforced. And then they switched.

The math class we went to -- the same thing happened. I leaned over and said to one of the students, "So are you allowed to, like, go ahead if you have already gotten this and you have already figured it out?" And, literally-- I mean, you're looking at these high school students who are completely self-paced. Talk about blowing your mind. And she said, "Yes, we do. I don't like to do a lot, because sometimes I stop and I help my friends if they're not going ahead." (laughter)

And that conversation was happening, as a bunch of us were visiting, over and over and over again. So I've just become not a fan of digital learning, but a fan of us having opportunities for teachers and parents to try to realize the kinds of things we're talking about.

What do I mean by they're teaching more? It meant that because you have that opportunity, that the teachers aren't having to go back to their lounge or at night or in the morning grading papers on paper. They're actually reporting their assessments and their data. Some of those schools are doing it in a really sophisticated way, like Rocketship in San Jose -- which I'll talk about in a second -- it's almost automatic, the feedback loop. And so the teachers then have time to discuss the students. The teachers have time to go to the other people in the environment and talk about what are our needs here. The teachers actually can show a

parent online what it is the student learned that day, right? And then the parents get engaged.

So it is not for everyone. But the kinds of opportunities and the kinds of schools, both in traditional districts as well as through charters around the country, that we're learning are useful -- and can happen moving from the seat time to the mastery -- is really extraordinary.

The total enrollment of virtual and blended charter schools nationwide, over time -- just as a little example -- has grown from -- and most of this is in the written comments you have -- from 37, serving roughly 29,000 students in 2000, to 229 schools serving approximately 151,000 in 2011. Now, not included in this were the state virtual schools that you've heard alluded to. These are more traditional public schools that use non-traditional delivery methods. They're large and small, like the Florida Virtual School, which through its own programs that they create, as well as programs on contract with different providers that have to meet the Florida Virtual School in Florida standards, are providing schooling to 100,000 part-time and full-time students.

And then you've got something like a Virtual Virginia which supports approximately 4,000 students. In total, 30 states plus D.C. have statewide, full-time online schools; another 10 states have others kinds of statewide initiatives. As you know, there is New Jersey Virtual Charter, which is under development and taking a planning year, that actually modeled itself after Florida and uses its award-winning courses, which are aligned to both national as well Garden State standards.

The New Jersey Virtual School website says that it hires only New Jersey-certified, highly qualified teachers in subject areas, which is the

case with all of these schools that hold a standard endorsement. They're experienced in the New Jersey core curriculum; they follow the same hiring practices, interviews, orientations, application, résumé reference checks, credentials, and so on. And yet New Jersey is only one of 10 states that does not yet have a statewide virtual school.

All of the state virtual schools today boast student achievement gains. I'm going to share just one with you. Arkansas Virtual Academy, compared to its traditional public school peers -- a University of Arkansas study found that their literacy and math scores surpassed the schooling of traditional public school peers.

So who are these people? You've heard about what they are, you've heard a lot about the data, you've heard a lot about what our international counterparts are doing. I think it's fascinating. Some of us might say -- no offense, Susan -- "Who cares? Who cares what's going on in China? Who cares what's going on in India? What about Camden? What about Bergen County? What about Essex? What about the Oranges, right? What's happening here?" Well, the reality is students all across the country who are in learning and blended environments we actually know more and more about. This is from NCES statistics. This is Education Department data. In fact, the Education Department looks to people up here to help them populate their data, and then they actually go out and they do their own student and staffing survey work with data.

A student enrolled in a full-time virtual or blended learning environment is 20 percent more likely to have a special need. He or she is 10 percent more likely to have been lagging in his or her previous school. So why? What are some of those problems? They may have been -- this is

a small number of people but, regardless, it's an incredibly important national issue -- bullying. Personal difficult situations that are apparent to everyone. There might be a physical issue. They might have been behind -- many of them may have been ahead and considered eggheads, quite frankly, because they want to do more and learn more. Many of them are language deficient. Some of them are homebound. And as you heard, some of them might have specialized needs.

Students have reported that they love the flexibility. There's a gymnast who talks about -- that being born with one hand does not feel like a disability to her when she's actually learning online.

I spoke to a teacher recently who actually happens to be someone who got in contact with the Center for Education Reform recently. She's a teacher at Virtual Virginia, and she shared a couple of stories with me that I won't read to you in detail. But this one I just thought really captured it.

She said, "Kevin called me." This literally came out of her e-mail. I'm happy to share the actual original e-mail with you. "Kevin called me when phone service returned to his house, but his power still wasn't on. He wanted to let me know that even though he and his dad had been chopping wood most of the week to keep the wood burning stove heating the house during the blizzard, he had been able to submit his lab report. Shocked, I responded 'How?' I knew that the mountain counties were buried in snow, out of power, out of school, out of fresh water, and out of luck. In fact, his school was out for 15 consecutive school days that winter. This call came during the middle of that.

"He responded that his sister, a doctor, had to drive to treat patients nearby and he walked there, turned on her car at the end of the long driveway, tethered her BlackBerry to his laptop, all powered by her 4-wheel drive, and painstakingly submitted his entire lab report. Kevin was in the 10th grade. His rural school system did not have the funding, or much of a need, to hire many AP teachers, and Kevin wanted to take AP classes -- lots of them. He now has over 20 college credits and is just beginning his senior year as a veteran online student. His success is not limited to online learning. He won several competitions, etc., etc. He's now a candidate at Harvard."

So Mrs. Sparr (phonetic spelling) told me this when she also told me that her AP bio classes online surpassed the scores of Virginia AP bio tests in traditional public schools. And many of you know, like New Jersey, Virginia has an incredibly proud history of great public education. That's just one area and just one student. And some students came here a couple of years ago when Governor Wise and others of us came here and talked to you about these issues.

And it might sound small. Again, Michael mentioned there are 14,000 dropouts who have not returned to the classroom in New Jersey. I mentioned, Assemblywoman, earlier -- I mean, there are people who are not successful or who are just average across the state. We don't know where, or how, or why they get to where they get to. And many adults work on a regular basis -- and we know that. And even the advocates and the opponents -- no matter where you are on this issue -- recognize we're all trying to solve the same problem. Why not throw this into there?

So we say, "What are the parents and teachers thinking? What does this have to do with it? Is it just people like us walking around thinking this?" According to some of the teachers we've interviewed, online learning is not for every student, but it does work for most. They talk about the self-pacing; the studying when students choose to, allowing for live, synchronistic teaching; as well as this idea of the flip-style classrooms with recorded lectures followed by labs. They work together in groups, they do make friends from other places.

These parents and teachers we've talked to are not alone. The Leading Education by Advancing Digital Commission -- LEAD -- co-chaired by Columbia University President Lee Bollinger and many, many, many other distinguished people -- clearly not a fringe group or "just advocates" -- did a survey. They thought this was important enough to realize. Ninety-six percent of teachers and 92 percent of parents believe that schools' integration of technology in teaching and learning is important to American students. Fifty-four percent of teachers, 64 percent of parents believe the role of technology in educating students will become much more important. You go down the list of things I've written here -- that a survey (indiscernible), and it strikes me that as you're doing these important hearings, you might also consider having somebody do an objective survey of parents and teachers in New Jersey rather than just take our words for it. Rather than take the words of people who want to protect the status quo here. Let's find out what peoples' needs are, let's find out what their wants are. It's great to say *surveys*, but what is it locally?

The reason that's so important -- not only knowing the research and the science, and the personal intervention, not only seeing this actually

work in real-live time, not only thinking about the assessments and the data that actually traditional education can learn from those and that kind of integration -- but really understanding how that money flows and really being able to kind of help debunk some of the mythology that's out there.

Look, I get it. This is really, really scary. There's no one philosophy out there, but it's really scary. I mean, I grew up here. Many of you have taught in these schools. You lead them. You hear from people every single day. You grew up in a community where there are three or four schools that are succeeding, and someone comes and says, "We want to start a virtual charter school. We want to start a charter school online." I think that's kind of freaky too. I can imagine why all these people are calling you, and screaming, and yelling, and saying stop.

But the reality is, without really having the data, we really can't say stop. Because you don't know who is in those schools. In some of them -- they might look great on paper, but when you desegregate the data, even the best kids -- even our best-performing kids in the State of New Jersey -- and I know this is heresy to say in a school (*sic*) that values its public education -- are being outperformed by the lower performing kids in other nations. And that is why there are people trying to push these efforts.

You move over to the lower-income areas, and the disadvantaged communities, and the places where there are bars on the doors and are bars on the windows, and where we're spending tons of money and trying to change the way we're doing things on a regular basis. And if we could just start focusing on what's happening in the school, at the same time what's around the school-- Think about what technology would provide for a child in Camden or Jersey City when you turn on that

computer technology in the back of a classroom, like the one in L.A., and you actually get to hear from professors and teachers all over the country. What if you had the kinds of programs that were created -- Singapore math -- it actually came from Singapore -- being beamed in from somewhere else, and a master's of education teacher, who's student teaching, learning a different and new way to teach math as her professor or teacher is in the front of the classroom teaching in a different way. What if you could evaluate how one student responds differently from another? Are we ever going to actually give access to our poorest and most needy students to the things that some of us see and read every single day, that we take for granted, without opening them up to what is outside? If they can't leave Camden because they can't leave Camden, wouldn't it be amazing if they could leave Camden by having technology in front of them? Those are the kinds of things that are opened up by even having this discussion.

And there is no one way to do it, which is the phenomenal thing about it. Just like all these reforms, there might be a New Jersey way to do it. There might be a Bergen County way to do it. But there is not necessarily one way to do it. And what we've seen is, these teachers and parents, when they get a hold of these kinds of opportunities to deliver learning in a different way, they create stuff that they've wanted to create.

I find it incredibly ironic that many of the very well-intentioned and smart people -- some in this room, and some elsewhere in this state and around the country -- who oppose standardized learning and standardized testing don't recognize that the creativity and that competency-based learning that you can accomplish when you have this in front of you is actually happening. The reason we even have a debate today in this

country-- And I lived through the NCLB debate in Washington, D.C. I had a front-row seat. And I used to say, "The only thing good about having that debate come to Washington was it was the first time in my 20 years in Washington the debate of quality and how we spend Federal money ever came to town." But it was a result of states not doing the job that many people in Washington, whether we agree or disagree, thought they weren't doing -- that we weren't measuring the standard of learning. We weren't measuring the competency, we weren't demonstrating how well we're using those funds. And so we have this, now, very standardized top-down thing that's been interpreted and used by districts in defending themselves to this day, that yours and many other states are rebelling against.

Well, the reality is that if you could show learning in such a more streamlined way, we wouldn't even have had to have that debate. And that's one of the things that technology can help prove.

So the fact that perhaps the myth, I would say, that online learning has no real accountability is simply not true. They function as public schools. They're held to the same state and Federal standards, including participation in whatever tests or mastery learning comes about. They are aligned to the same state standards. Active participation is required. You have to show up for class, even if you're in a virtual or blended learning environment. You have to have attendance taken. Teachers have to demonstrate that work was done. You can actually see them logging on in real time. And it's not just like you can log on and walk away from your computer. You actually have to see action and activity occurring. There are teachers checking in on a regular basis.

The accounting operations of these schools have to be well-documented and audited. Concerns of cheating online -- we've heard about that. It's no different than the use of paper and pencil tests. If we want to do bad things, let's face it, we can do bad things in any kind of environment. This isn't about doing bad things; this is about how we can actually do good things.

Another myth is that online learning is only for gifted students. Some of -- all of us have actually addressed this. The data you'll see talks sometimes about how fluid the movement in and out of these schools is. Well, the realty is, people who aren't successful do, in fact, shop. They do find reasons to come in and come out. But we have to get a hold of data in a very different way for all of our schools in order to make evaluations about what's important. We have to start looking at where the child came in, where the teachers' started, and using that data to gauge progress.

I would argue that you can't look at any definitive data today on any of these schools unless you actually do apples to apples comparisons. Where were they before? Where are they now? Where was the teacher before? Where is the teacher now? And as you know, as you're struggling with your state standards, with the discussions of Common Core through assessments, no one is doing this really well. And so you have to look at whether the school is reporting that information out. You have to look at surveys. You have to look at whether students stay in, and then you have to look at their mobility and their retention, and where they go on from college. It's a long view. There are no easy answers, but there are also no easy or valid criticisms of this. We simply don't have that kind of data. The data we do have is collected -- individual schools' surveys, government

data collected from each state that is doing this; and the charter sector -- if the data is collected from the charter authorizers and reported much the same way as traditional organizations.

Another myth also that we hear often -- and we've talked about this, and it's a very serious and important issue for anyone doing this in policy making -- that online learning is only available to families with computers. As we've talked about, if you are in a blended learning environment, you're in a school, there are computers and technology. Any organization that creates a virtual school, whether it's a charter or noncharter, has to provide these things -- absolutely has to provide them. And the technology is provided, which is one of the reasons, as Michael alluded to, the costs go up. But the organizations that actually supply students virtually with their information send the kit. You have to see these kits. They're amazing. They have computers, they have books, they have rocks in a box for labs. There are actually computerized science programs. You're told, "Open your rock. This is an igneous rock. Split it open." At the same time there is a computer program showing what happens when you actually dig into the breaking up of the igneous rock. They send these things out. These are costs. There's research behind it. There are assessments that then go out. And if the child leaves, they're supposed to send it back, and that doesn't always happen either. And so these are costs that a lot of these organizations and companies, in fact, incur, along with the insurance.

The myth that online learning is cheaper-- Again, I agree with what you've heard. This is a huge issue across the country. The online learning providers -- those people who create these schools -- understand

that they're not also paying for bricks and mortar. At the same time, everything else is a constant. And so while there might be, as Michael says, a haircut with virtual learning -- blended learning -- it actually, over time, we believe, can save money because you have a lot more happening and you're lowering, over time, your remedial education course; you're lowering your mobility course issues; you're raising retention; you're actually raising graduation rates. But right now you have to look at it. We have to pilot it. We have to learn from what's being done in order to actually make some definitive concepts. But we do actually know that blended learning models are occurring in many states with less per pupil costs, and they're having to do more with that less. And that's particularly the case, as you well know, in charters, which are funded at about between 70 and 80 percent of the traditional per pupil operating costs in most states, minus facilities.

A couple other quick things-- We talked about online learning getting positive results. You've heard about the 2010 Department of Education study that, in fact, did find that the face-to-face instruction versus online learning -- that there was actually a net positive of 20 points in terms of online conditions. Florida Virtual School, and all the other virtual schools, reporting out tremendous data-- They all had independent performance audits that they had to comply with. Florida Virtual students outperformed the rest of the state with 45 percent reading above average scores compared to only 35 percent of kids in traditional bricks and mortar schools.

I talked a little bit about AYP and the challenge of using today's data to evaluate kids who are coming and going on a regular basis. This is a problem in all of traditional education.

You've heard also about online social interaction and the pros and cons of that. There is no question that socialization is a huge issue. And the reality is that families, and parents, and schools that deploy blended and online learning modalities find opportunities for their kids, and groups of parents, and their communities to engage and interact. They don't just do it online, they do it in person. And I argue, any one of us who has ever screamed at their child to get off the computer and stop doing stuff knows that they're doing it for socialization as well as they're doing it to learn something. And so keeping up with the way students learn and their access to technology on a regular basis is really fundamental.

These important considerations -- funding, the equity, the standards, accountability are absolutely critical. We take them very, very seriously. But again, as scary as it might seem, talking to the teachers, talking to the students, understanding how it works in a low-income community, a middle-income community, an advantaged community where many people are fearful that somehow standards will be lower and money will leave -- are just simply besides the point. How do we employ and deploy this in traditional education? How do we open up these models? How do we create the real partnerships and the real collaboration across all these reform things? These things are here to stay. You have a charter school law. You're having debates and reforms on teacher quality. Digital learning has now been presented and is being piloted, and you'll see that soon. And at some point in time we'll see the next mandate coming back from Washington on these issues. Wouldn't it be nice to actually have hit that before we get to that problem?

So I thank you for your time and your work in looking at this. Again, I would just urge you to really not worry so much -- not you personally -- but don't take the -- worry so much about who we are, where we come from, who we represent, why we're in this; and really look at it as what we know, and whether what we know and what we can learn from other places can benefit the kids here.

Thank you.

ASSEMBLYWOMAN WAGNER: Well, I want to thank each and every one of you for coming here today to give your testimony.

I'd like to open it up with questions. And I'm sure each one of us has tons of questions for you.

The first one is-- In my mind, I've been listening and I'm making a distinction between blended learning and the full-time virtual school. And what I'm hearing is that the blended learning is something which assists the teacher in the classroom, that it's a tool so that it frees up the teacher to work with the students individually. Well, in my mind I'm thinking, "Is this not an additional cost to school districts that are strapped?" Who is paying for this online learning? If someone could just answer it. I don't care who answers it.

MR. HORN: Sure. So what you'll tend to see in blended learning schools that adopt these curriculum is that they'll replace a lot of the textbooks and things like that with these new modalities, and they'll move to new arrangements of doing class to allow different students to cycle through -- with innovative staffing models and things of that nature -- so that in general it certainly doesn't cost more. Occasionally, as Jeanne said, we see it cost less in states that have lower per pupil, but it tends to be cost

neutral. The best study of this was by The Parthenon Group, that did work for the Fordham Institute, where they did a survey of all of the different blended learning school models out there and showed the range of costs depending on the different models, and showed that they tended to be-- If the average student was $10,500 or something like that across the nation, you were getting a range of everywhere from $7,500 to $10,500 per student. And they really broke down the costs. If you look at that report, which I highly recommend, I would not look at the headline of the report but instead look at the deep work that they did to unbundle where all of the costs were, where the different savings were, and then how it allowed them to fund the technology and so forth; to really get the sense of where that was. But basically you have districts reallocating resources from different buckets to make this work.

MS. ALLEN: And if I could just add briefly -- and I'm not sure how this would happen under existing New Jersey statute, outside of any kind of class size restrictions being lifted or charter operation. But in the case of the California school, for example, the 35 students in the classroom -- they were exempt from the class size requirement, not because the teacher was suddenly expected to teach 35 kids as opposed to 23, but because they had the additional aide, they had the technology. And so one of the issues they're addressing is overcrowding. So instead of adding all these portables, they're actually putting more kids, for briefer amounts of time, in a classroom using the technology at the same time. So they actually saved on facilities as an additional cost savings, which is huge in the area I currently live.

ASSEMBLYWOMAN WAGNER: So just let me get this straight again. Textbooks would be eliminated?

MR. HORN: It depends on each model. You don't-- I'm going to be wary of drawing a one-size-fits-all scheme here, because in Los Altos they kept the textbooks. And they were able to use other dollars from other buckets that they had from other funding to fill in the computers. For the curriculum there they used Kahn Academy, which is free. So we're seeing a lot of free resources increasingly being used in these environments, as well, that allow teachers and schools to do this without really thinking about it.

In some cases, the other thing we're seeing is that a lot of school districts are starting to move to bring-your-own-device environments where the majority of students have some sort of mobile or computer device. And then they just use funding for those who truly cannot afford it to level the playing field. And therefore they don't incur that cost. We're seeing a huge range of innovative models right now, which is why I'm wary to give one answer, because it's really different depending on the distinct needs of the population.

MS. ALLEN: But I will say it's interesting to show up at technology conferences and talk to the textbooks publishers who are trying to figure out how to grapple with this. Because as opposed to the 300-page history textbook coming out of Pearson or whatever, it's updated every year at a cost to the New Jersey taxpayer of $156, or something around there. Now they can be updated pretty quickly online if there is a factoid or something that needs to be fixed. And so those costs are plummeting if you multiply that by 25 high school students.

So how to deliver that -- spend money elsewhere. Training also is another issue. If you're doing lots more training online more quickly, as opposed to having teachers pulled out or additional time in the summer to do things-- So it is not a one-size-fits-all, but the variations become pretty amazing.

ASSEMBLYWOMAN WAGNER: Thank you.

Are the blended courses available in all subjects?

MR. HORN: For the most part, yes. We're seeing an unbelievably long tail of subjects getting offered, from the obscure foreign language, economics, or engineering that you wanted to bring in. And there are-- We did an Ed Tech map -- a look at the products and services that were out there last June, which we're now in the process of updating. But the number of math and reading products that are out there is just an unbelievable number.

I think the most challenging thing actually, as a district administrator or a charter school principal, is filtering through which ones you want to use for your population -- it's not finding things. It's, "How do I know which ones to use and which are good?" That's the biggest challenge out there right now, to be candid.

ASSEMBLYWOMAN WAGNER: The accreditation -- I'd like to get to that. The Middle States Association -- Schools and College Association -- Middle States, which is probably one of the best accrediting institutions-- Have they provided accreditation to any of the virtual schools?

MS. ALLEN: I actually don't know for sure. Many of the individual charters that are experimenting with this and using these are

accredited. I'm not sure which ones are accredited that also contain it. But the programs and services that these schools are providing are not -- some of them are brand new. But for the most part, they're relying on the same traditional programs that traditional public schools rely upon. And they're benchmarking them to the state standards and the Common Core, in anticipation of the Common Core becoming a fait accompli. So we can get back to you on that. My sense is that anywhere you have a public school that has been approved or required to be accredited by a state -- whether it's a charter or not -- that it's going to be accredited or has been. But we can double check that.

ASSEMBLYWOMAN WAGNER: Okay. Thank you.

One other question. I know that you pointed to the studies whereby the K-12 virtual schools have been successful. Well, of course, I'm going to point to the one that has a difference of opinion, and I'm wondering if you can comment on that. And that was the National Education Policy Center in Boulder, Colorado -- that on July 18, 2012, in regard to K-12 Incorporated -- which is the largest virtual charter school -- has said, "Computer-assisted learning has tremendous potential. But at present, our research shows that virtual schools, such as those operated by K12 Incorporated, are not working effectively. States should not give full approval until they have evidence of success. Most immediately, we need to better understand why the performance of these schools suffers and how it can be improved."

So I guess I need you to tell me: Should New Jersey be adopting a policy of no growth until we see evidence of success in the K-12 virtual schools?

MS. PATRICK: I think one of the biggest issues that we're looking at across the board is two-pronged. One is the approval of online learning programs and effective oversight. So there's this tension between wanting to expand access to online learning opportunities but needing to ensure that they are high-quality and they are serving our students well.

Right now, as I mentioned, we publish national quality standards. But I think there is a need in the field across K-12 education to be evaluating program effectiveness based on outcomes. And what I mean by student learning outcomes is that a lot of the quality standards that we have are useful, are used by accrediting agencies, but are very inputs-based. And those inputs are important in terms of critical success factors, and the skills for teaching, and the instructional design of the courses.

When we start to talk about outcomes-- And I think what that study pointed to is that when you're measuring effectiveness of a program by a single, end-of-year test -- and this is what's an issue in the traditional system in how we measure effectiveness -- and you're getting high populations-- In some of the virtual schools in states, we're seeing as many as 50 percent of incoming 12th graders-- There are some charter schools that won't take kids after the 10th grade because of the ding on the graduation rates. We're seeing as many as 50 percent of incoming 12th graders who are overage, coming in with three or four credits, who actually come into the virtual school for a shorter period of time while they're waiting for another environment to open up. So this concerns me because we need better data around why kids are coming in and what are their ultimate goals. If it's actually kids coming in, staying for two -- or doing a six-year graduation rate and being successful-- That's great if it takes them

a little bit longer if that's what they need. But if it's data showing (indiscernible) for other reasons, then we need to be really transparent about the proficiency level on entry, the proficiency level on exit depending on that modular of time. And maybe it's the right amount of time for a kid to move through a transition to another environment where they will still graduate and be college- and career-ready.

But I say this: We've just been funded by the Gates Foundation and will be releasing our report next month, setting up recommendations for quality assurance based on outcomes with new performance metrics and indicators. Because as Michael pointed out, new models usually require new performance metrics, and I think we really need to focus on the student outcomes for this. And we look forward to working with states and with accrediting agencies to do both ends -- both the approval and the authorization -- and those recommendations, but also the ongoing monitoring for outcomes.

MS. ALLEN: Let me also just add, what the NEPC did is it took, as Susan alluded to, end-of-course tests from throughout a sample of, I think, this one company's students. And yet each of the schools managed by any of the organizations that have charters are actually evaluated individually by their charter authorizer in each state and held to the same performance standards. And there are actually complete records in each of those states. But they didn't look at the performance standards as reported to their boss, whether it be the school board, university authorizer, or state education department. They took individual data, put it in a big Cuisinart -- as I like to say -- shook it out, and aggregated it. So it would be like

saying that everyone who goes to Camden public schools are bad as opposed to, "Some kids gained, some kids didn't. Why didn't they?"

And so going back to the issue, until we can get to where we're actually measuring kids and individuals from where they started and where they were, we simply can't take that or a lot of other evidence that is out there. You have to look at the individual school and the individual school's data and measure from there. And I think the two schools that are now open here will give you a great opportunity to do that.

ASSEMBLYWOMAN WAGNER: Thank you.

I'm going to get to that good old question of cheating, because I happen to have a daughter-in-law and she teaches in Florida. And I know you mentioned Florida quite a bit. And there are a large number of students who are in the K-12 virtual schools. And she out-and-out tells me -- and this was long before this discussion even came up here today -- about how the students brag that somebody else is doing there work. How do I know that the person sitting at the computer doing the lessons is the person? And how do I know that that person can't -- obviously can take the test. They may have mastered the material. But we know that learning is a lot more than taking a test. So how do I do that on a K-12-- And I know we're not there yet. But these are some of the pitfalls that I wouldn't want to see New Jersey fall into, because I do not think that Florida is an example of a state that has achieved educational success. (laughter) So convince me.

MR. HORN: You're right to look at this. The exciting thing is that there are several steps you can take to be far more robust in the online environment around checking that the student is actually the student doing the work and representing. And not everyone has put in place those

opportunities by any means. I'll talk about a few of them and then just distinguish among a few environments.

Blended environments are obviously very similar to the traditional brick and mortar. So to the extent that we do well in catching cheating in brick and mortar, it's not much different in blended environments, if at all. I'd probably argue we don't do as well as we should in any K-12 environments. But that's one group.

And then obviously the full online experience is a different one. There are several ways to deal with this. In talking about the assessments themselves, what most programs of high quality will do is require that you still come into an independent proctoring center where you have -- where you verify identity and you can actually make sure that the person doing the assessment is, in fact, that person.

Secondarily, to the extent that you're using online technology to do these assessments, there's an unbelievable way of checking student work to (*a*) make sure that they're not plagiarizing from around the Internet -- through using online checking algorithms. And there are a number of companies that have popped up around that. Equally so, you can start to see variation from their work product themselves -- both in the assessment environment, but also in essays and things like that that they would be doing as a matter of course -- both from an automated scoring perspective; but also teachers themselves, because they know the students so much better in these environments because they're working one-on-one with them, tend to say -- pretty quickly pick up -- as my experience in talking with them -- "We knew immediately that that student was not

doing the work anymore because the characteristic of their writing conversations and so forth was just different."

In many cases in these online programs, they're also talking on the phone with the students. So they're having conversations that allow them to check, "How does the student talk about this material?" And if it's widely divergent from the way they're writing about it, they might have questions about what role mom and dad is playing as well.

And I guess that covers it. So you have both the proctoring solutions, you have the technology solutions, and then you have the teacher-human solutions where you're getting far more feedback on what these students actually know and do.

ASSEMBLYWOMAN WAGNER: This will be my last question before I turn it over to my colleagues.

As I understand it, at the K-12 virtual schools you have your profits and you have your nonprofits. Can you tell me: How does the profit company make money, and what do they do with their money? Are they spending it on advertising? How do you make money off of education? If somebody could comment on that.

MR. HORN: I'm happy to dive in--

MS. PATRICK: Harvard MBA.

MR. HORN: Harvard MBA, yes; although Harvard, obviously, is going through its own cheating scandal right now, for those watching the headlines in the NCAA. It's going to create some interesting ramifications there.

I'm actually working on a book right now about this question of for-profits in education, more generally, with Frederick Hess of the

American Enterprise Institute. And so we've been looking at this question. The answer is: In the online environments you start to have economies of scale with the technologies that allow you to have savings in some traditional areas. The interesting thing is, if you look at the for-profit providers like a K12, Inc., they've actually never done a disbursement of funds to their shareholders. Instead, they're reinvesting it in the product. And they've spent over $2.5 million to this point in improving their product, and their technology, and their platforms itself.

In terms of the advertising question, it's obviously a very different apples to oranges sort of question there. Because when you're in a school district, there doesn't need to be a heck of a lot of advertising. They already know. You know who you are. There is an expectation that you go to the district. So they are spending funds on advertising really to inform students of different choices that are out there and so forth. And you do certainly hear radio announcements, or billboards, or things like that that you wouldn't before. What's interesting to me is that districts now increasingly are doing advertising themselves and trying to do effective communication with parents to try to make them and help them understand why they're the best choice for their students. And to the extent that is built around accountability and transparency, I think that's a good dialogue to be having. It's why I think the State's role in setting up those outcome metrics is so critical, because right now it's very hard to have that honest conversation on either side of the ledger.

MS. ALLEN: Could I just add one very quick thing, and speak to you about a company I've actually talked to a lot about this -- I'm very friendly with -- called Charter Schools U.S.A., which is not doing business

in New Jersey nor does intend to? They're in four other states. They cut their teeth in Florida. They're a charter school management firm. I've been to several of their schools, and they actually support an extensive -- what you would look like as a lean district office. They have their own curriculum and professional development people. They've actually developed their own standards and benchmarks. They have development people, they have HR people, they have facilities people. They actually build their own buildings. All of those schools -- the brick and mortar ones at least -- most of them, the facilities funds are not separate. They don't get construction dollars in taxes, so that's part of it as well.

So what they've said to me is, "The way to look at this, Jeanne, is that nonprofits don't reinvest it, but it doesn't mean nonprofits don't make a profit. I have money in my reserves now. It doesn't mean I've done something wrong; and it's not in my pocket, and I run a nonprofit." But as a company, they're required to -- as a for-profit, they might take money in. They're required to do what they have to do to show an outcome, and the money goes to build more schools and to build a company. It doesn't mean that people aren't necessarily making more because they have that ability. But it's not as if they're stretching it out, pulling it, and putting it somewhere else. And so the way it's been described -- and most of them are happy to come talk to you about their balance sheets and how they do it. But they do reinvest a lot of the funds that they receive. It allows them not to go out and look for philanthropy, quite frankly.

ASSEMBLYWOMAN WAGNER: Thank you.

I'm going to start with Assemblyman Wolfe, and we're going to go right around. We'll each take a turn if you have questions.

ASSEMBLYMAN WOLFE: Thank you, Chairwoman. It's an excellent hearing.

Thank you for your presentations.

And I especially thank Jeanne for commenting on my prowess. (laughter) Thank you very much. I was very impressed.

However, probably other than the Chairman -- he and I have been on this Committee for a long time.

How many years, Chairman?

SENATOR RICE: Twenty-six -- since they started.

ASSEMBLYMAN WOLFE: We've heard it before. We did have a hearing, and some of you were here, about a year-and-a-half ago on the same subject.

I don't know if Diane was here. You were probably here. And I know the Chairman was here.

We heard this, and I'm very glad we're hearing it again. But being a former professor who was so good that they made me an administrator, I'm no longer a professor-- We heard a lot of information in a very short period. Two hours -- it was a lot to absorb. You had some very good graphics here. So I will keep my comments, hopefully, very short.

One of the things I was very impressed by -- all your presentations -- was talking about what other countries and other states were doing, and how appalling it is how far not only the United States is, but how far New Jersey is. Several of you commented on -- we have no -- virtually no -- no virtual charter schools in New Jersey. And I think that's very upsetting.

We went through a situation here a couple of months ago where there was a delay put on some of the charter schools -- virtual charter schools. And I'm sure you are aware of it. I was asked to be on the board of one of the virtual charter schools. It was going to specialize in dealing with dropouts, which was one of the things you talked about. And it was very deflating for me to see the possibilities.

Now, years ago our Committee -- maybe 10 or 12 years ago -- put this big push on to get wiring in the schools so they could have computers in all the schools in New Jersey. And now they all have them. But it probably took 10 years to do. That was, like, light years ago. And now we've moved to the moon and beyond that. And from what you're telling us, we are still so far behind. I don't know how long it's going to take us to catch up or how much money it's going to take to catch up.

But when we are told by you -- who I would assume you have different approaches to the same issue -- how far behind we are in terms of our commitment-- Most of us have been very supportive of innovation, new things. But there just seems to be a group of folks in New Jersey, who any time something new that has not been done in New Jersey is proposed, put out massive efforts to either derail it, slow it down, or just make sure it never gets done. And I would hope that if any publicity comes from this meeting today, it's going to be to educate the public. You've educated the legislators -- but to educate the public on really the status of where we are and where we should be. I'm not trying to talk about this as Republican or Democrat, I'm talking about this as a legislator who is looking at the quality of education we have. And it's pitiful that we don't take advantage of the opportunities we have.

I work at a college that thinks they're doing great because they want to go to one town in China and offer e-learning. I mean, from what you told me today, get in line. That's what I'm saying. There is so much knowledge that's not being-- And when you tell us we have 50 million kids in America in school and they have 60 million gifted and talented kids in China, we have a long way to go.

I don't have any questions really, but those are my comments.

I want to thank you again. I know all of you have some extensive backgrounds, and you do really offer a different perspective for us. Please don't give up on us, and I really would hope you'll be available to come back and assist us.

I want to thank the Chairwoman for offering this type of testimony for us.

Thank you very much.

ASSEMBLYWOMAN WAGNER: Thank you very much.

I have to go out of order, Assemblyman Caputo, because Senator Greenstein has another appointment, and I know she has a few questions.

SENATOR GREENSTEIN: I have about 20 minutes. I appreciate you taking me so I can just ask a couple of questions.

First of all, I want to thank all of you for presenting your perspective here. It's very interesting.

I just want to give you a couple of perceptions I have, and they're tied in with questions. I'll just read these off to you because I just scribbled them down here.

First of all, the thought I have here is that I'm not really sure what's new here because, just as Dave said a few minutes ago, these are issues that we've talked about for years. For example, back in the '70s, there were the open-classroom concepts, trying to open it up, make it a lot less structured. In fact, I think there are schools out there that are not that structured right now. I think we have a lot less of that. And then, of course, the use of computers, generally, has been frequent throughout the schools when they could be afforded.

It does sound to me like you -- and I need to understand this a little bit better -- that you're talking about a slightly different role for the teachers, particularly in a full virtual school. The blended ones don't sound that different from a good classroom that has computers right now, to me. The total virtual -- could you explain how the teacher would function in there? I don't get that. Is that a kid sitting at home and communicating with a teacher through the computer in some way? I don't know.

MS. PATRICK: It's a great question. And I think there's an evolution from the ideas from the '70s and open classrooms, and the experimentation with competency education then. And what's exciting is these ideas that are right around student-centered learning that we can do now that we couldn't do before. When I was growing up there were still those phones where you did the rotary, and now we have this ability-- (laughter)

SENATOR GREENSTEIN: I still have one.

MS. PATRICK: I go into schools and tell kids how I had three channels on TV, and to get the third one you used the aluminum foil. They don't believe me, but it's true.

SENATOR GREENSTEIN: There have been a lot of changes in the last couple of years -- the last 30 or 40 -- that's for sure.

MS. PATRICK: So these changes are really around personalization. But I think the thing that I was concerned about as the prior -- being the former ed tech director where-- I saw $60 billion in the U.S. over the last 10 years being invested in computers in schools -- is what Michael, actually, in his book-- And Innovation Theory has been really helpful just in understanding-- What is the frustration is that you cram it into the classroom or there are four computers in the back that collect dust because it takes all of this effort. Where if you can rethink the instructional model first to say, "How do we increase interaction between teacher and student, and teacher and content, and teacher and outside experts" -- and that does take a lot of PD.

Now, the spectrum is -- which you're getting to -- is really from the blended to the full-time virtual classroom. And when you go back to 15 years ago when some of the first fully virtual programs started, they're starting a problem -- like what Michael was talking about, is the student -- the traditional classroom doesn't work for them. So what does that look like? And it starts with having to train the teacher. And the teacher's role, I guess, changes -- is that they're not standing in the front trying to personalize instruction to a group.

SENATOR GREENSTEIN: In a totally virtual, is the child at home or in a classroom?

MS. PATRICK: In most cases, for the full-time programs, the child is at home.

SENATOR GREENSTEIN: Okay. So the teacher is interacting through the use of the computer.

MS. PATRICK: Right. And so to the--

ASSEMBLYMAN RAMOS: Is that in real-time?

MS. PATRICK: It depends on the program. Many of them will have a set of hours that it has to be in real-time, and then the rest of it is asychronous. Some programs were designed to be asychronous. So, again, there is not a one-size-fits-all answer to that. It really depends on the program -- the kinds of students that they're working with. And we have a publication that's called *A Parent's Guide to Looking at Online Programs*. And there are a whole series of questions to ask. And a lot of those questions drive into what's the instructional model of a particular program and how much the teacher role can be different in the different programs too. So I'm not trying to not answer the question. I'd be happy to follow up with you with those publications.

SENATOR GREENSTEIN: In a blended, the child is in a classroom more. So that's closer to-- Again, I'm talking about classrooms that work well where the teacher is using the computer. So the more the classroom now works well, the more the blended would be somewhat close to that.

But I did notice here -- I was just looking for the page -- you said something about practical implications. This was in Mr. Horn's thing here. And it says, "Not beholden by the old metrics, including teacher certifications." To me that does not sound like a positive. Could you explain that a little bit for us?

MR. HORN: Sure, absolutely.

So what we're seeing in a lot of these blended learning models is that the teacher of record is still a teacher certified. But you're bringing in a lot of teachers in new roles, as well, into the learning environments. I tend not to call them *classrooms* either, because they are sort of those open lab environments in the most interesting manifestations. But a lot of them are still classrooms. And so as Jeanne described, you're having the paraprofessional, you're having the student teacher, you're having the teacher certification-- You want to make sure that the code allows all of these to be able to work in there.

The other thing is, for the full-time virtual perspective, geography need not be a barrier anymore to reaching the best teacher no matter where they live.

SENATOR GREENSTEIN: That I understand.

MR. HORN: So a lot of state code -- what you will see is, they make it very hard for a teacher in, say, Pennsylvania to be able to teach someone in Delaware or something like that.

SENATOR GREENSTEIN: I just have to say, again, I love the idea of talking about new ways of doing things and trying to improve. But we want to make sure we don't confuse those two. New ways don't always improve.

I can see this the older you get. I can see it for adult learning. And I love some of the examples you've given here on your nonconsumption chart -- some of the special situations where I can see using these programs. I think when you're talking about younger -- the younger you get -- when you're talking certainly about special ed, kids with behavioral problems-- The more you go in that direction, the more chance

they're going to need supervision. I just can't picture plunking all those kinds of kids down in front of a computer, and they're just going to learn. And, again, it depends on what metric you use to measure that learning, what the goal is.

MS. ALLEN: Great point, Senator Greenstein. And the virtual learning organizations require a learning coach. It might not be great comfort to you -- who is monitoring the learning coach, whatever. That's one of the criticisms. The learning coach is actually there to certify and help make sure things happen. But there is a child at home, there is a learning coach, and the schooling rarely happens from 8:00 to 3:00. It may happen from 8:00 to 12:00, and then you can do it in the evening. It may happen in different shifts. It may not be just the seat time -- eight hours at the computer. But the reality is the synchronistic, the asychronistic -- the reality is it's still a teacher who is either, under state law, qualified or required to be certified. New Jersey is actually one of the earliest, as you know, alternative certification states. And we're bringing in people from all over. The former Bell Lab scientists, the people who were actually history professors--

SENATOR GREENSTEIN: Who are now becoming teachers.

MS. ALLEN: --who are now teaching. And so they are teaching-- Many of the teachers are teaching either from home-- But many of the organizations also require them to actually check in at an organization and a place. And so increasingly there are work places where they teach from. So it does depend-- But the reality is-- I don't want to have anyone obfuscate your question. You're saying -- and I'm hearing your perception -- there is a child at home. Where is the teacher, and is that

okay? And the reality is, yes, there are hundreds of thousands of students right now being taught through official public schools that are virtual and sanctioned by their states, where there are performance metrics in place, certified teachers, standards of accounting, etc., and they are passing tests, and they are demonstrating progress just the way someone who is showing up is.

SENATOR GREENSTEIN: Does that include the kids with the behavioral problems, and the special ed needs, and all of that? I mean, who is helping those kids sit at the computer and concentrate?

MS. ALLEN: Those organizations report that they are serving just as many special needs kids. And many of them are physically in need and have physical ailments, not just learning disabilities. And who is helping them is not just the curriculum and the program, which is more tailored to them than to sitting in the classroom, but their learning coach could be a parent, it could be tutor who is hired, it could be someone else in the family.

SENATOR GREENSTEIN: And then the last question I'll ask is, since -- and I think you acknowledged this earlier -- New Jersey has a pretty good public school system. Certainly there's always room for improvement in any system, but we have one of the better ones among the states. How would you describe the problem we're trying -- either the problem we're trying to solve by these new methods-- I know you've already sort of described how you think it will make things even better, even if we're pretty good. But are there problems that you feel we're trying to solve here and that your system will solve?

MS. PATRICK: I would just say it's a real equity issue. Even in a great state like New Jersey, there are lots of kids where there are equity issues. There are issues with having huge gaps in their system. And if we can find ways to pinpoint those gaps and then start to really rethink how to bring services around them-- It is really hard for a single teacher, in a single classroom, with a single textbook to be able to address gaps that may be holes. And that's why I love that graphic from Kahn Academy. If we could really start to get to a next-generation model that looks at collecting data down to the individual academic standard, but identifying those gaps first and then giving credit to schools that do the most with the most challenged youth. And so one of the biggest issues right now is around looking at teacher effectiveness. But everything is still age-based, grade-based. And if you're looking at teachers who do this incredible work -- if they get a 9th grader at a 3rd or 4th grade reading level and they bring them up what we think of as one-and-a-half grade levels or two grade levels in a year, they're not getting credit for it. And so using the technology not for the technology's sake but to start to get this better data around growth -- whether it's virtual, or whether it's in a classroom, or in blended. I actually am much more concerned with -- let's use the tools that can get into the hands of teachers to be able to do this effectively. Because it is a really tough job that's getting harder. And I think that's the problem that we're really trying to fix. But it's also true for gifted kids to be able to move ahead.

Stephen Heppell, who is in the U.K., who is a big leader in something called *not-school* -- they are schools, but it's called the -- building schools of the future -- he says there should be no limit to how fast and how

far our students can go. And if you look like-- In a state here that has so many great things working for them, there is still no limit to how fast and how far our kids can go. Let's make that the learning environment they have.

SENATOR GREENSTEIN: Thank you.

SENATOR ALLEN: May I just do a follow-up on that one question?

ASSEMBLYWOMAN WAGNER: Certainly, Senator Allen.

SENATOR ALLEN: Thank you.

You're talking about the access, you're talking about the youngsters who have the holes in their education. I look at my district, which is a relatively poor district -- and it's not just the poverty, but it's poor in so many other ways -- it's children who are not self-starters, and it's parents who are unengaged. How do those children fit into your system?

MS. PATRICK: I will say that in my system, based on the work that I do, is the public education system, and it's having a variety of opportunities that meet students' needs. And students who have a really difficult time at home where their parents aren't engaged probably need to go to a bricks and mortar location. So that's probably going to look like a flex model or a blended model where there are more resources.

We're getting ready to put out a paper next month on really rethinking what student support services look like. And when you start digging into that and the kinds of interventions that different kids need -- and there is not a lot of literature about that in the field -- you really start digging into what educators need as supports too. So I hope that having these extra tools and asking these questions let's us ask these fundamental

questions too for all kids. Those students are going to need to use the best of the online tools in a blended model, most likely.

MS. ALLEN: And if I could also add, Senator Allen, there are grandmothers in East L.A. who pulled the kids they were guarding -- their grandchildren -- out of traditional public schools out of safety, and signed up for a K12 or Connections Academy, and they're still doing quite well. There are people in Washington, D.C. -- over 100 of them -- in Ward 7 and 8 who are using similar programs.

There are people who have needs who are nontraditional and who are in environments that you would think they need to be in a traditional school, where their parents, or people around them, or guardians recognize that's not good enough for them, not safe enough, and they don't want -- for whatever reason -- that it's not personalized. And whether the need is greater in a Paramus, or an Orange, or a Paterson, or we're just not happy that 42 percent of the kids in New Jersey -- which is true -- in 4th grade are reading proficient. Even though we're doing better than a lot of states, we're still not nearly where our kids need to be. And those parents make those decisions. It's not anyone here advocating that we need a digital learning component in every community. We're saying that if there was an opportunity to have a digital learning component, virtual, online, blended, whatever it happens to be -- if you make it available, you can cater it, and move, and shift with peoples' needs. But not to have it because we fear that one of these things might lose out is not necessarily the way we would recommend you going.

SENATOR ALLEN: I understand that. But you're still talking about a grandparent who is engaged. And gosh, we just have so many

family members who are not. And these are the kids that I'm most worried about.

MR. HORN: If I could just make a brief point, because I think Jeanne did a good job of being careful of the one-size-fits-all assumptions. But to your point -- and to where Susan just spoke -- one of the things that I'm excited about -- and we're working on a paper on it. And sometimes some of my friends in the online learning world who create these content engines and so forth are not thrilled with me with saying this. But if we could start to commoditize some of the technology pieces of this -- much lower cost on the content and device side, and so forth, we'll actually free up funding -- it's my belief -- to do a lot of these services that are nonacademic in nature that trip up these students. And so you'll commoditize some pieces of it so that you actually have larger buckets of funding to put in those wrap-around support services. And I can imagine learning environments in the future where you'll actually have three roles for a teacher in that environment. You'll have the content experts; you'll have mentors and motivators; and you'll have nonacademic workers who really look like caseworkers, who are way more high-touch than the guidance counselor system that we've tried to put in place -- which we know has unbelievable ratios and doesn't work particularly well -- but would be able to deal with a lot of these problems that trip students up, even before you can ask the academic questions. So I think it opens up a whole range of models in those ways.

SENATOR ALLEN: I love that you're looking toward that. I think that makes all the difference.

Thank you.

Thank you very much.

ASSEMBLYWOMAN WAGNER: Assemblyman Caputo.

ASSEMBLYMAN CAPUTO: First of all, I want to thank the panel for being here today. I think it was very informative. I think there are a lot of questions that not only legislators have, but educators have about this particular movement.

Over the years -- I was a former educator -- I'm a former educator, myself. There have been so many attempts to improve education. Every once in a while we get ideas that we want to spread. And the fact is that there is failure. There's lots of failure out there. Obviously you wouldn't be attacking this problem if it was a total success.

One of the things that disturbs me is that when things -- when ideas are presented, there is so much resistance to these ideas, and there are reasons for it. In your research or your experience in trying to sell this as part of the solution, what are the major reasons for that resistance. Can somebody speak to that?

MS. PATRICK: I'd be happy to. I think one of the biggest reasons is people not understanding what it looks like, and that's why it's really helpful to do some school visits to different models, because you really do see how different models work very differently too. But it's complex when you really start looking at the different instructional models and the differences in synchronistic and asynchronistic, and you see, "Okay, there are benefits in that one, and this one, and there are benefits in others."

I think the biggest resistance that we've seen -- and this is interesting -- but it falls along the lines of the traditional resistance across

the board. So I will say, obviously, in some states -- and New Jersey is one of them -- there has been push back from some of the professional educator groups. In 2006, I worked with the NEA, the National Education Association, and partnered on a guide to quality online teaching. They did a really thoughtful piece on looking at online learning, and it's very, very supportive. But the NEA doesn't support all models. They support supplemental models, they support teachers getting the professional development to teach online. They don't support full-time online schools. And I think that just falls in line with supporting some models over other models, but it's not actually about the delivery system. In the past 12 months, the NEA put out a very supportive piece on blended learning in terms of recognizing the promise.

I think everybody across the board wants to look at models that are not only equally effective, but more effective. And so this piece on looking at outcomes is really important about getting transparent. But we have to be careful not to completely shut down the innovation. I think while some groups may oppose some models -- and a lot of that has to do with funding models and it has to do with traditional boundaries -- the idea that this delivery model can really serve some kids incredibly well and opens up opportunities, as we've seen internationally, is something to really keep in mind and be thoughtful about -- the quality issues.

ASSEMBLYMAN CAPUTO: It seems to me that the blended version is much more acceptable. I think that has been some of the remarks that have been made here, and I agree with that.

When you talk about these concepts, this innovation-- When people begin to distrust a movement like this, or whatever you want to call

it, it's not going to work. You have to be-- These ideas have to be sold to local administrators, teachers, community groups, and children -- students. Otherwise, if you think the Legislature is going to be in a position to mandate this without that kind of local support I, for one -- I'll speak for myself -- will not be supportive of that unless I can see certain districts where they feel a tremendous need -- and the fact that we've documented that -- where innovation has to take whole -- and it fits. Then we can support it. But to go out and mandate this kind of change without that kind of investment from local districts where they understand the change in the funding -- where it may cost them, may not cost them -- whether it would be virtual, whether it would be-- Because no one is going to tell me you're going to be able to put these programs in without a cost. Somebody is going to pay for it, so there are going to be winners and losers here. And hopefully the winners will be the children. But the fact is, these are the bureaucratic, political things that you have to surmount. And I don't know what-- We don't want to cut off children, obviously, from having the best opportunity that they can have in our public schools, but I think it has to be up front in terms of where we're going, in terms of privatization -- what is this all about. And I think other members here will be able to discuss that even more so than I can.

MS. ALLEN: If I could also just add, as well, Assemblyman, I don't think anyone here is suggesting or came to suggest that you all mandate anything. It's allowing. And currently the only opportunity -- well, there are two opportunities. One is, there is nothing in law, charter or otherwise that prohibits a district or a charter school from using or deploying online deliveries. And I know there is consideration in trying to

ban that. But currently it exists as an opportunity to do something. And so I think we came with that in mind. And I think that having an innovation hub that allows you to see that is something we're simply suggesting, based on experience and where it's happening elsewhere, is to consider--

ASSEMBLYMAN CAPUTO: What would you need from us then? What do you need the Legislature for?

MS. ALLEN: Nothing. We were invited to come and share with you thoughts about how this works.

ASSEMBLYMAN CAPUTO: What do you need from the State of New Jersey -- let's put it that way. What kind of approval do you need to proceed with your concepts?

MS. ALLEN: In order for virtual or blended learning to occur in New Jersey public schools, be it a traditional public school or a charter school, it simply needs to be approved.

ASSEMBLYMAN CAPUTO: What does that mean, *approved*?

MS. ALLEN: Either a district superintendent and school board, as some of them have throughout the State -- doing digital learning in many ways; or, in terms of the existing authority for charter schools, the Commissioner has to approve it. The Commissioner has approved two blended learning models, they've delayed others.

ASSEMBLYMAN CAPUTO: So what you're saying is that the Commissioner of Education has the authority to grant it to the local schools.

MS. ALLEN: To grant a charter.

ASSEMBLYMAN CAPUTO: Charter.

MS. ALLEN: To grant a charter that involves it.

ASSEMBLYMAN CAPUTO: Okay.

MS. ALLEN: Absolutely. And a superintendent and school board, to your point, has the authority to approve, as they have, digital learning.

ASSEMBLYMAN CAPUTO: Where is that occurring in New Jersey?

MS. ALLEN: There are at least a dozen districts in New Jersey that currently use online learning.

ASSEMBLYMAN CAPUTO: Why isn't everybody jumping on the bandwagon?

MS. ALLEN: That's a good question. I think it's probably because, one, Susan's point, that it's still a mystery to a lot of people. They haven't seen it, they don't understand it. When we talk to community colleges and public school officials doing it, they certainly think it's a good thing, but they're also not in the sales business. They're doing it for their own community. So it's incumbent upon people locally to share best practices.

And two, I think it's because there's fear. And, frankly, if I may be honest, there are a lot of people running around the state saying, "Teachers are going to be out of a job if you do that." It's simply not true.

ASSEMBLYMAN CAPUTO: Finally we got to the truth, right?

MS. ALLEN: Is that the truth?

ASSEMBLYMAN CAPUTO: Some of this is job security, correct?

MS. ALLEN: No, that's what we're hearing.

ASSEMBLYMAN CAPUTO: Thank you.

SENATOR THOMPSON: In response to the Assemblyman's question, of course there also were applications this year submitted to the Commissioner of Education for several State charter virtual schools. And they were, I think, withdrawn and going to be resubmitted for whatever reason.

ASSEMBLYWOMAN WAGNER: Assemblyman Wimberly.

ASSEMBLYMAN WIMBERLY: Thank you, Madam Chairwoman.

Most of the questions I had have been addressed. I'm not sure if they've all been answered, but at least addressed. And I have an idea of what's going on and, more or less, just a general comment. I think innovative learning is definitely something that I'm in favor of. I just have concerns for my school district. I represent Paterson, Garfield, and some other school districts that are lower-performing. The reality is that I would say a majority of our students do not have Internet access, and that's just from dealing with-- I now run after-school programs. That's definitely -- the question where it asks, "What is your e-mail address?" -- that's almost a foreign question.

And the other point you brought up was about the grandparents in Los Angeles. We have a large amount of grandparents who head households and take care of their children's children. Unfortunately, I don't think they're as involved in the process as L.A. appears to be. I would like to learn a lot more about what is going on because I think the pros of this would be, when you look at our drop-out rate in the City of Paterson, how can this benefit those students in the 9th grade who are dropping out? Maybe they do need an alternative learning opportunity. Unfortunately,

many of our males -- incarceration. How can we keep them up to speed academically via online education?

And also credit recovery: I've worked in credit recovery before. This is definitely a plus. And I know now, in the Hackensack School District, you have to pay almost $400 or $500 for credit recovery for online classes. But my concern, when I first found out that they were paying $400 or $500 for the credit recovery, is the whole security issue of cheating. And that came about -- how do you make sure that the student who is paying that $500 -- now, our kids are very innovative -- is the person behind that screen doing that? And as a former educator, I can understand how many of our educators would be very -- I mean, for lack of a better choice of words -- *offended* with some of this process. Because as a former classroom teacher, you sit, and you teach, and you learn, and then you have a student who may be better off financially or in a better household situation, and they could do these online courses. And it does have an impact on their collegiate career and their academic standing at the high school or grammar school level.

No questions, just comments.

Thank you.

MS. ALLEN: Just imagine a Boys and Girls Club in Paterson having -- because we've actually talked to people who are talking about actually providing virtual schooling through an intermediary group. But imagine the Boys and Girls Club having set up and hiring learning coaches and people who are paraprofessionals to guide them through fully certified, approved, accredited course work so that they have the option to do or go somewhere else. And imagine that that also involves adults and young

adults in family literacy as part of it. I mean, something like that potentially could be explored and created if there were an appetite.

What my concern is, sometimes there is not an appetite because we've said, "No, no, there are too many problems, there are too many concerns. We're worried." But there have been facilities and organizations who have talked about doing just that, and some who have actually started piloting it. So there may be a way to address some of them. I'm not saying it's the easy answer at all.

ASSEMBLYMAN WIMBERLY: And I understand. And the Boys and Girls Club and other groups like that are fine. But a district like Paterson, with a 29,000, school district, you're talking about a Boys and Girls Club of 250 kids. So you're talking about a very small percentage, even if you did open it up to that type of program, who have the opportunity to take advantage of the system.

ASSEMBLYMAN WOLFE: Madam Chair, if I could just chime in there, I think the New Jersey Virtual Charter School application was for five school districts in the state, and Paterson was one of them for dropouts -- definitely for dropouts.

MR. HORN: So that, in that case, would have provided, obviously, Internet access and computers to the students who enrolled in that option.

One quick thing that I think may need legislative action is on the funding models. And so on two fronts -- one we've talked about -- the full-time virtual schools -- setting up a separate funding stream so that it's not-- I'm not quite sure what New Jersey levels are, but they're high compared to the rest of the country -- and with that 10 percent to 15

percent hair cut. And then the second one is what Minnesota and lots of other states have done -- is allow fractional funding down in the online course so that if you're a student in a particular district that does not offer that online credit recovery, there is still a funding mechanism to allow you to have access to that online course. Those credit recovery courses will often take place in the school itself to handle the cheating issues. And then they often -- what we've seen Utah, Louisiana recently do -- they give 50 percent of funding up front for the student taking the course and then hold back 50 percent of the funding until the student has successfully completed the course. And if there's an end-of-course exam component of that, that's part of that, or whatever the state requires -- and a general experience overseen by the teacher in that school.

ASSEMBLYWOMAN WAGNER: Thank you.

Assemblyman Ramos.

ASSEMBLYMAN RAMOS: Thank you very much. I appreciate the testimony this afternoon. I mean, I'm looking forward to the visit of the actual virtual charter schools themselves, because I'm an educator myself. I'm a little confused as to the actual delivery -- what the teacher's role is, the students' role -- as when things are getting-- When the instruction is taking place is the teacher actually there? Is it real-time, not-real-time? Who is grading the instruction? And the reason why I bring that up -- and to his point -- our kids are very ingenious when it comes to getting around certain things. And parents -- we have the STAR assessments, where our kids would not be promoted or had to go to summer school if they didn't reach a certain benchmark in their STAR assessment. We had kids throughout the school year not reaching that benchmark. And

once the superintendent sent that letter home, all these kids -- "If you don't reach that benchmark by next week-- You have one more chance to take this test. If you don't reach that benchmark--" And the kids had the opportunity to take that test home on a computer in their homes. A lot of kids started to get flying scores. (laughter) One hundred points higher in some cases. And I'm not kidding.

You witnessed it yourself.

ASSEMBLYMAN WIMBERLY: Yes.

ASSEMBLYMAN RAMOS: An older brother was taking it, an older sister was taking it. So there are some concerns when it comes to those issues, as far as online goes.

And another concern I have is, I look at K12, Inc. What would they have done today. Maine was having the same conversation in their legislature recently as well. And there are investigations going on with their teachers being certified in the state of Florida -- when one in seven students who were getting instruction in Florida were not getting instruction by a certified teacher. The same thing in the state of Tennessee.

MS. ALLEN: I'm sorry, it's not one in seven. It was actually one teacher who had students -- was supposed to be teaching 121 students--

ASSEMBLYMAN RAMOS: We're not (indiscernible) her name, correct.

MS. ALLEN: One teacher. But there's an investigation and the jury is still out.

ASSEMBLYMAN RAMOS: An investigation going on right now, still out. That's what we've read. And Maine has held off because of that. In Tennessee, the same thing -- K12, Inc. there -- a school came out in

the bottom 4 percent. So this isn't the panacea by any means. But I do see a need for -- especially when it comes to credit recovery, when it comes to our dropouts for night school -- summer school especially, because it could help restrict costs there as well. So there are positives to this as well. But I do not see it as the panacea and this is going to change education.

The reason I say that is, we've seen other reforms before in our country. No Child Left Behind was passed in 2001. All of Congress were patting themselves on the back in 2001, 2002. "This is great. It's going to reform education. By 2014, every single kid is going to learn how to read in our country. Every single kid is going to learn how to do mathematics in our country." And the birthplace of No Child Left Behind was the state of Texas. And over 400 schools in the state of Texas are looking to go away from standardized testing. That's what this has become. I heard earlier -- one of you guys mentioned -- when someone asked the question before -- 27.7 percent -- that study out of the University of Colorado was brought up, and they said, "We're looking at our standards, not the state standards." Well, teachers in our classrooms would love that. We'd all love that right now -- look at the progress it would make on my student. "Maybe they came into my class at a 3rd-grade level and left at a 5th-grade level." Do you know how the State of New Jersey looks at it when they look at my test scores? "Not functioning properly." Not meeting AYP with my students in my classroom.

So there are a lot of concerns when it comes to that. So that's part of the fear aspect when it comes to education in the classroom every day. Why are the rules different for someone else than they are for me in the classroom every single day? Why are these *X* factors allowed to exist

out in the subuniverse -- do we know that the work that's actually being reported is being done by that student? I mean, if it's older students I'm fine with that. My daughter goes on Kahn Academy every now and then. She's in the 4th grade. We can explain something to her every now and then. But I also looked at that chart-- And that helps her out. But I also looked at the chart -- you point out that one student, and that graph went up and up and up for that one student, but the rest were pretty much flat. A lot of that chart was going up a little bit, but that curve for that one student was pretty high compared to the other.

MR. HORN: But they were all going up.

ASSEMBLYMAN RAMOS: They were all going up, but you pointed out one student. And that one student was really doing well, and it worked for him. So it doesn't work for the whole majority. Everyone is different. Students aren't widgets. And that's the only thing I want to leave here today with -- students aren't widgets. We're dealing with emotions that Senator Allen was bringing up. When they go home-- There are a lot of distractions for them sitting in front of a computer all day long. My kid will turn around and turn the TV on. "Is Ninjago on?" So there are a lot of distractions to this home-schooling environment that concerns me.

So there are a lot of concerns here. I do see positives. I do. I do see positives to it, but I also see plenty of concerns. But that's why I say, "You know what? Texas was the guinea pig in No Child Left Behind, and now they're asking for a No Child Left Behind waiver. Florida wanted to be the guinea pig with that too. They've applied for a waiver as well for relief from these mandates." Let's let other states be the guinea pig first, and

we'll pick and choose what we like here in the State of New Jersey. That's my suggestion. But I'm looking forward to going to visit schools and things of that nature.

I appreciate it.

MR. HORN: Can I just make one very quick, small point, because you brought up a lot of good ones? You're right. This is not a -- there is no one-size-fits-all solution here. And anyone who tells you that any of these programs are universally good or universally for everyone is wrong. And what my number one recommendation is, setting up a structure that prioritizes the individual student learning growth for each student, and then you help them figure out the right options for each student based on what they need.

ASSEMBLYMAN RAMOS: And this is-- I want to make just one last point. I don't know if anyone knows Benjie Wimberly is a phenomenal football coach. He walks the hallways of a high school. He sees a student who is struggling -- maybe they have a physique or an outgoingness a gym teacher saw in a classroom -- and says, "You want to go talk to Johnny. Johnny could do something over here for you, maybe." And Coach Wimberly has that conversation. That's not going to happen behind a computer. We still need some physical contact with students to try and take them to the next level and break them out of the box a little bit. Maybe someone -- a student sulking in a corner that day -- and they see -- that pat on the back -- "Hey, what's going on, Connie? How can I help you today?" It's that little (indiscernible)-- We still need human contact. And I don't want us to get away from that as well. But I do see the positives to it as well.

MS. ALLEN: And I want to just second that. This information here -- we work on emotional, academic, and social intelligences. Any reforms that address needs -- and they are great, no matter what your state or community is. They are great. And you can have the best and most affluent community, and the best and most affluent child -- or the complete opposite -- and they might still have deficiencies. I don't take anything away from Coach Wimberly or you in the classroom. This is not to sell you on it. We work on all of these issues. If I had five hours you would have gotten my whole spiel about everything we should be doing in New Jersey. (laughter) But the reality is, it is individually needed for many people to have options and personalization. It's something we are losing more and more every day. And all any of us, as advocates for having something like this on the table as one of many of the options available-- If parents, educators, and students can benefit on some level-- It is not a replacement for all of Paterson or all of any district. It is an add-on or potential option that is already being guinea pigged lots of places. So that's all we're saying. And we don't take away anything else about the importance of what you're doing.

Thank you.

ASSEMBLYMAN RAMOS: That's what we're here for. I don't mind it at all.

MS. ALLEN: I'm going to have to scoot right now.

ASSEMBLYWOMAN WAGNER: The next person to speak is Senator Rice, who is the Co-Chair of this Committee.

And I want to just comment on what Assemblyman Ramos has said. I think what I'm getting out of this is, we want to be able to pick and

choose what's best for New Jersey and what's best for our students. So we're going to go out there and take a look and see who has done it right, who has done it wrong, and what we want to do. What's best for here?

Senator Rice, it's all yours.

SENATOR RICE: Thank you very much.

Let me also thank you for taking the time to come back and visit us here. The questions that are being raised are not an attack on you, but it's to establish some reality for the record. Many times the speakers come and do not want to tell the truth about who they are, what they represent, even though the substance of the information is information we can use. And we do take that into consideration.

Now, having said that, I'm going to ask a few questions in a few moments. But I want to put some things in perspective. I don't think that any of the three of you are naïve about the privatization movement in public education -- the attack on teachers. You know that this started back in the 1950s -- you know, Milton Friedman, his wife Rose; the Ward Foundation (*sic*), the Bradleys, and all the rest of those folks -- the Koch brothers. So I don't think you're naïve about that.

I don't think you're naïve about the movement today. After they changed the strategy, it's really nationally and internationally implementing their strategies and using the tactics to get it in. And because of that, there is a lot of distrust throughout the country, particularly here in New Jersey -- a targeted state of privatization.

I don't think any of you are naïve about who our Commissioner is and where our Commissioner of Education comes from, and those relationships -- the relationship of the Governor and other people in part as

it relates to that movement, including local government people, etc. And so there is a reason to have some anxieties about what it is that we do here by way of legislation, and who is providing the legislation or the concepts of the legislation for us. And so you just need to take that as real. We can document that. And that's important primarily because if you take the districts where we need these tools--

First of all, this whole issue of virtual -- this technology -- is not new to us. There are those of us who represent struggling districts who have been yelling for virtual. We just didn't call it *virtual* because it wasn't virtual then. Every time a new piece of technology is developed, we have enough intellect and life experience to see where it can benefit us differently in different parts of the state and in different systems where we are. And so virtual is not new. What's new about virtual is that it's the hedge fund people, the privatization people, the Bradley Foundations, the E3s of the world, the Manhattan Institute that are promulgating this privatization. And so some of the things that are being promoted in education we can do ourselves. We don't need nonprofit organizations that are indirectly making profits or linking it back to profit groups. We don't need that. So don't take it personally.

But I do have a question for you. (laughter) And one of those questions is: Did the relationships that you have-- Your funding, your research -- who actually does your research? Who actually writes your scripts? Who actually interprets your data? And be honest with me. Is that linked back to the privatization infrastructure -- organization infrastructure of research -- others that have been built that work out of the Berkeleys, and the Harvards, and all those other places -- through the Cory

Bookers of the world -- and people come from? Because that's important to know.

You look real confused to me.

MR. HORN: There were three chains there that I probably wouldn't know the answer to. We're funded largely by private foundations.

SENATOR RICE: Are they private hedge fund foundations?

MR. HORN: No, no. I mean, this is all public record on our website. We put our 990 up there as a complete open book for everyone to see. They tend to be -- and are extremely transparent about that. All of them are funded by nonprofit foundations that are -- like the Gates Foundation and others. So that's the answer.

SENATOR RICE: Well, Gates is part of the hedge fund movement.

MR. HORN: Then the answer for you would be yes. I don't see it that way.

SENATOR RICE: That's all I need to know.

MR. HORN: But that's the answer.

SENATOR RICE: Eli Broad Institute?

MR. HORN: What's that?

SENATOR RICE: Eli Broad?

MR. HORN: We have not taken money from the Broad Institute.

SENATOR RICE: But you know who he is, right?

MR. HORN: I know who Eli Broad is, sir.

SENATOR RICE: Do your organizations interact with his organizations?

MR. HORN: Sure. We interact with everyone.

SENATOR RICE: And Joe Klein and the Murdoch family?

MR. HORN: In the sense that we've had conversations, yes.

SENATOR RICE: That's all I need.

MR. HORN: Sure. Absolutely.

SENATOR RICE: And the reason I say that is-- There is nothing wrong with it. But my point is that--

MR. HORN: It's a good point.

SENATOR RICE: It brings in the problem we're having trying to do the kinds of things that you're articulating -- we should be using virtual form. And how we make it work subjectively in our state, because of relationships that we -- not yours, but people who have those relationships, who have different intents once we do the research on them. But that's why I need to know that.

MR. HORN: Can I give a full answer then on -- a fuller answer?

SENATOR RICE: Sure. Because I'm asking questions about what you talked about up here.

MR. HORN: We work with every group. We speak with administrator associations, unions, teacher groups, parent groups all the time because we think it's important to engage in those dialogues. And that's why, to you-- Because I'm very sensitive to what you're saying. I think that outcome framework -- so that you're not letting in someone who is just trying to make money without educating kids is really important.

SENATOR RICE: I think that's important too, and that's why I wanted to know the relationships. Because I know that the teachers and

others aren't paying you necessarily to write books, and do things, and become the authority. That's part of the tactics of the privatization movement. I can document that. That's why I don't want to debate it. I just want to make sure that I'm right on what I'm identifying in terms of the authority -- what the books say, what the data says, and how it's marketed.

But getting back to your presentation here-- Maybe I missed it because sometimes-- I've been here a long time. I'm a little slow sometimes. I'll be doing this, I'll be doing this. (indicating) And sometimes I don't hear as well so I have to repeat things. Did we talk about a teacher ratio as it relates to the students? Can you talk some about the teacher ratio and these relationships with the virtual?

MR. HORN: Sure. We're seeing-- Susan will probably have a slightly different answer, but we're seeing an unbelievable range of different models in the student-teacher ratio, so it's hard to generalize. When you see student populations where the parents are very active, and the technology is good, and the students are already succeeding, you can do higher student-teacher ratios. And when you have students who are struggling, and so forth, you need more individual attention.

One of the things that's fascinating is that in these new models-- There was one model in -- I'm trying to remember which one it was now. There was one school I visited that was a blended-learning school where there were maybe six teachers for 250 students. So it was a very high student-teacher ratio. And we talked to the students, and they said, "We've never been in a school that has had such a low student to teacher ratio." And the reason was, every time they interacted with a teacher, they were

interacting with them in no more than a group of 10. So for them, personally, it felt like a smaller ratio. It's just very hard to generalize across the field though. And it's incumbent based on what you will pay. So if the per-pupil is higher, you'll have a lower student-teacher ratio. And in states where it's lower, you'll get higher.

SENATOR RICE: Was there any discussion that I missed about teacher certification as it relates to the things that we are required to do here in the state?

MS. PATRICK: I'll just make a comment on that, because I did mention, on the iNACOL quality standards for online teaching -- and those standards include many different skills and criteria. But the first is that they are a certified teacher teaching. In my opening remarks, I said that in my definition of *online learning*, we're talking about a licensed, certified teacher that's leading the instruction using the web and these online tools.

SENATOR RICE: And what about background checks for the workers in the virtual? We require those things here -- and for the teachers as well.

MS. PATRICK: That's a great question. Most of the states that have the full-time virtual school -- so as of this school year, starting this fall, there are 32 states and the District of Columbia. Most of them ask their virtual teachers to go through the exact same regulations. Even if they're at a distance from their students, they have those same regs. So fingerprinting, background checks, all of those.

SENATOR RICE: One of the issues -- I'm going to end on this and tell you where I see -- where I've always thought there was a possibility

for these types of programs. And it was mentioned here more than once -- which means that if we are mentioning it, maybe there is something more to it the State should be looking at. Which you can do -- you can sell the State. I think the State, depending on what side of the spectrum you're on -- privatization versus inside-- I know the Governor listens to privatization people and those who articulate some of those objectives of them. But the one area we can't seem to get the legislators to move on is the dropout bill. We set up a whole piece so we can really take a look at dropouts and what we have to do in legislation. And I'm still going to get that bill to the Assembly some kind of way.

The point is that the dropout areas-- We're very much concerned, because we have a legal obligation to do all we can to educate inmates. We hope they don't go to jail, we hope they don't go to the youth houses. But there is an obligation there. And we can see a need there. But the problem is that we have, in this state -- to be quite frank -- some elected officials who have some real, serious integrity problems -- I say that publicly all the time -- and commitments to the things we're doing. And to be quite frank, this is one of the most corrupt states in the country, as quiet as it's kept. It isn't even kept quiet. It's in the newspapers every day.

And so the distrust -- we're trying to take information that you have, regardless of whether you're part of the privatization movement or not, to supplement the information that makes sense to us back to our communities, to the taxpayers and voters -- is that this whole movement is about taking taxpayer dollars to privatize education. And meanwhile, we're dictated to as to what we want. For example, when Assemblyman Wimberly was speaking about his district-- I mean, for 21 years Paterson

has been taken over. So when you go and say all these wonderful -- not you, third person. That's what you all say in school, third-person-- But when folks go in and say, "We're going to do these things," they grasp to-- And it's almost like those of us who try to do the best we can believe that the only reason some of our districts are failing as it relates to the public -- rather than measured by progress -- is because there are those in this country, not just in this state, who are part of a national network who want the districts to be identified as failing districts -- particularly urban districts -- not just here, in other states -- so they can come in with these kinds of, what we see as, privatization programs and say, "These things work."

And parents are so hungry for something, because everybody is convincing them that the kid is failing when the kid may not be failing. They're failing on paper, not up in here. (indicating) And that's the problem. And then when you get someone who comes in -- as the Commissioner says, "Well, our rules are faulty under QSAC and No Child Left Behind. And that's why we're going to intervene in 107 school districts that are failing in one aspect." But if I have 107 school districts failing one aspect of QSAC, do you know how many students we can say, "Okay, this district's going to fail programs and instruction. Virtual works well there"? Do you know how we could use that stuff if it was really valid? But nobody is going to trust anything. And that's one of the roadblocks you're running into. And I think we need to take a look at that.

But I do believe, in closing, that dropout and inmates -- as it relates to the correctional facilities and youth houses -- we need to take a real good look at that. And then there's another area out there where people assume that folks leave and go out to school every day, but they

don't. And that's some of the halfway houses, where we do have people who are staying there, like Integrity House and elsewhere, to really get cleaned up. So there is a need.

Beyond that, I think we need to stick with what we do best. And to exclude an education model -- an Education Association model that has experts -- we rely on them, and they have community input and government input -- not to have a model that they suggest, that we can measure, weigh out versus some privatized model, to me doesn't make any sense. Because certainly the educators in New Jersey, contrary to what people are saying -- they're bringing everybody else in from another state in my city -- differ -- know more about New Jersey than they know about South Carolina, they know about North Carolina, they know about California. And so we have to listen to them to some reasonable degree, whether the Governor likes them or not, or whether the government likes them or not. We have to listen to them. That's what we send them to school for. That's what they live here and pay taxes for -- to be a part of us. And so we see it every day.

I just want to thank you once again. Once again, this is not personal. We are very sensitive up here -- most of us, if not all of us -- about what has been taking place in this state long before we met you. And unfortunately you have to ride -- be a part of that, because it is an international movement, and you're a part of it. And I respect that. But you're doing a good job selling your piece. We don't have the marketing money to sell ours, but we'll find it.

Thank you.

ASSEMBLYWOMAN WAGNER: Thank you.

Senator Allen, did you want to add anything before--

SENATOR ALLEN: It's always a thrill to follow Senator Rice. Let me just say that right off. (laughter)

MR. HORN: I've missed a couple of trains at this point. I apologize. Thank you so much.

ASSEMBLYWOMAN WAGNER: Everyone has to leave. (laughter)

SENATOR ALLEN: I just want to ask one quick question. I think it was you, Ms. Patrick, who brought up that there is no limit on how far and how fast. So it's really great for advanced students.

How does the teacher deal with having students at so many different levels? There was a discussion about possibly kids were helping others and not so much doing their own thing. But the reality is, if you have a number of very bright students, they're going to kind of just go off and -- hopefully go off and learn, and learn, and let it just keep going.

How does the teacher in that situation interface with everybody and make sure that it works for everyone?

MS. PATRICK: The really short answer to that question -- because I have to catch a train too, so I apologize -- is, the use of data and data-driven instruction, the personalized education. And so actually a lot of the schools that Stephen Heppell is setting up are designed for a lot of disenfranchised youth and kids who are struggling, and it's not the high-flyers. And one of the great things is just how they're looking at those different student supports and the teachers having access -- again, not to a single textbook, but to a whole range of engaging content and tools to help those kids.

SENATOR ALLEN: But I'm looking right now at the really bright kids, at our best and our brightest who, in our more traditional settings, honestly don't get what they need, aren't able to expand and go as fast as they can. In this situation, as it's been described, that could occur. But the teacher must be able to deal with students at very different levels. How do you have the time and ability to do that?

MS. PATRICK: Well, I hope that you do have the opportunity to do some school visits. There is some amazing work going on in Maine in the customized learning cohort. And when I walked into a classroom with students, one of the students pulled me aside and said, "I want you to see our capacity matrix." I said, "Oh, okay. Let's go check it out." And on the wall -- this was paper -- the teacher had built this big matrix. And there were, literally, 16 different levels. So this was students of the same age. But most of them were at seven or eight different levels of their lessons. And each kid just had a Post-it note on where they were. And the high-flyers were up here moving through things faster. But there were kids sprinkled all throughout. And I thought, "How do you manage all of this?" Well, Maine does have the technology with the laptops and all of the digital content. And the teacher said to me, "I've never been able to personalize learning more. But it takes a lot of work up front. In the summertime, we have to work really closely with the teachers in the same subject area. We almost have to have this. So it's not doing the lesson plan the day before." But it's planning out and a lot of PD. So this is really focused. But the students were showing me where they were in the chart, and they said, "Look, I know when I'm here, this group of students and this group of students just did that. And this is the student I like working with." And so

they're asking each other questions as they're getting caught up. But the teacher is really able to go in, and the teacher is asking them each day where their learning goal is, how they want to demonstrate that, and the student is picking what interests them to figure out a way that they're going to demonstrate it. And that, to me, was just-- This is what we can do. It's not about the technology. It's all about these teachers. It's not about that piece of paper -- the capacity matrix. But it shows how kids can really start to do that.

SENATOR ALLEN: Thank you.

MS. PATRICK: Thanks.

ASSEMBLYWOMAN WAGNER: Senator Thompson, do--

SENATOR THOMPSON: Senator -- and addressing part of your question there -- I think that the ideal teacher that you would want for these online courses -- whether we're talking blended or otherwise -- is very different from your typical classroom teacher you would want today. Your classroom teacher, with the conventional system-- The first thing you'll need is an excellent lecturer. They are conveying the information to the students. And if they can't get the general information through to them, they don't know it. But when the information is being presented online instead of by the teacher, they're relieved of that responsibility. What they need to do is be so attuned, so knowledgeable in their subject that in the same day they could be answering questions for this person who is six classes down the road, where this person is still six classes behind. They need to be able to individually answer specific questions more so than present lectures. So I think maybe for the teachers in these cases, you need to develop perhaps a different type of training system. I mean, the training

to stand up in front of a class of 20 students and lecture them each day, etc., has to be very different than the training for somebody-- "Okay. The material is being presented there." You just have to be available to address whatever problems they have and help them out in that respect. It's a very different requirement.

I'm also bothered by the overuse here-- Frequently, buzz words are overused because, boy, when people hear this -- "Wow, that's great." And I think in this case the word *virtual* is being overused. Virtual is totally inappropriate when it's applied to your blended learning situation. I understand virtual to mean something that doesn't really physically exist. If you have a blended learning situation it exists. Thus, a virtual school, I would say -- there is no brick and mortar facility, there is no class that people are sitting in, etc. You're doing it online, etc., and you're getting responses online. That's virtual. So I think that you really need to kind of separate it. Because when I heard we were going to be discussing virtual schools, I expected that was what we were going to be talking about -- there is no building, there is no teacher there in the class, the kids are not in a class, it's all done online. So to put the two of them together is misleading. I mean, hey, it's using a word that everybody -- "Hey, that's today -- virtual." But I'd suggest you use something a little different.

Several of -- the Chair and another one raised a question about cheating. Now, we've said that the students would be working at their own pace here. I assume that they would -- since they're working at their own pace -- take the test at different times; that is, when you reach a certain stage you're going to have an exam, etc. -- and people reaching it at different times. Am I correct there that the testing would be based upon

the student's pace as opposed to everybody taking the course is going to take it at the same time? (affirmative response)

If that's the case, this greatly increases the possibility of cheating. One person is taking the exam. They know what the questions are, and they may have found all of the answers. Certainly I know kids always say, "What was on the exam?" if you've taken it before. Even with the current classroom situation, I know there are cases where-- When I was in college I had one kid that missed virtually every exam in college, and then he came to others afterwards and said, "What was on the test?" And then he went and took the test. Certainly that opportunity would be increased significantly here.

MS. PATRICK: I think that's why we're trying to really focus on systems of assessments with performance-based assessments where students actually have to show the teachers they can know and do that. We really have to get away from this 1950s bubble sheet model. It's served it's purpose in (indiscernible) some information, I guess, over the last 60 years. But having teachers do oral exams, and projects, and performance-based assessments is really important for our kids to be 21st-century prepared.

But I apologize. I really need to catch the train.

SENATOR ALLEN: Thank you very much.

ASSEMBLYWOMAN WAGNER: Susan, I want to thank you very much for coming. And everybody who is still here, thank you. And that's why we're having four sessions, because we've been here over three hours just for three speakers.

Our next meeting will be November 28, and that is a Wednesday also. That's the Wednesday after Thanksgiving. So write that

down in your calendar. That will be when we will have the other groups here.

Listen, I know today I've enjoyed what we've talked about here. I think we had good discussion and heard lots of different information today. And you've certainly answered some very tough questions today.

MS. PATRICK: Thank you.

ASSEMBLYWOMAN WAGNER: Thank you very, very much.

Meeting adjourned.

(MEETING CONCLUDED)