

Keynote Remarks at 2013 Educational Technology Summit
“Connected Learning in the Digital Age: Improving American Education Through Technology”
LEAD Commission / Annenberg Foundation
September 10, 2013

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Thank you, Julius [Genachowski]. I’m honored to be here on behalf of President Obama, Arne Duncan, Cecilia Munoz, Jim Shelton and the rest of our Administration who are great believers in the ConnectED mission. As many of you know, Julius and Arne Duncan were the driving forces in bringing the LEAD Commissioners together and passionate advocates of this visionary plan to bring our classrooms into the 21st Century. I want to thank all of the LEAD Commissioners including Margaret Spelling and Lee Bollinger, but particularly Jim Coulter and Jim Steyer for their leadership and tireless work on this cause. This is a prime example of a Commission that is about not just doing a report, but ensuring that it leads to real and tangible and consequential results. And I also want to thank Geoff Cowan of the Annenberg Foundation for co-hosting, and for your great work on K-12 math education.

If I have a single message today, it is this: as exciting as new technologies are for education and the promise of universal broadband connectivity, ConnectED must be seen as so much more than just about wires, or wireless, or even the coolest new gadgets. The power of ConnectED is in what it can mean for the lives, learning, and educational future of our students — regardless of the accident of their birth, the education or income of their parents, or the zip code of their home. The end goal is not connectivity for its own sake: it is about allowing all students to have a more robust, individualized, and ambitious educational experience that better prepares them to be citizens, parents, and, of course, the skilled workers of the future.

This goal of a next-generation classroom – and this vision of transforming learning through advances in technology – is one that President Obama passionately believes in. It is a vision that is clearly shared by the bipartisan LEAD Commissioners, by educators and school administrators, and by app developers and other tech innovators.

Yet what is painfully clear – and what compels the need for ConnectED – is that a vision of students on individualized learning devices, getting the most up-to-date content, and reaping the benefits of stronger assessment tools is not possible in the majority of classrooms around the country today.

Why? Let me give two basic reasons.

First, even if educators and parents wanted their children’s classrooms to be classrooms of the future, with individual learning devices for every student at every desk, the connectivity just isn’t there. Consider the following: Today, the average American school has about the same bandwidth as the

average American home, but with 200 times as many people using that same connection. Even something as basic as streaming videos to multiple classrooms at once is likely beyond the reach of 80 percent of America's schools. Most schools have the connectivity for a computer lab – not a classroom filled with students learning on individualized learning devices.

What does that mean? It means that most of today's advances in education technology can't be used in the average American classroom. It means today, a teacher who wants to innovate in the classroom is largely shut out.

When it comes to connectivity, our schools are at the back of the pack. Connections are hundreds of times slower than our homes, our workplaces, and most of all, the classrooms of our top economic competitors.

The President said it best: "in a country where we expect free Wi-Fi with our coffee, why shouldn't we have it in our schools?"

The reality is that today we need more connectivity, not because we want to keep up with the Joneses, but because we have higher ambitions for what connectivity can mean for the learning experience and skills of our children.

We are also in a different era when it comes to technology, and what it means to use it.

When I worked in the Clinton-Gore Administration – and we joined with our colleagues on the Hill, including Chairman Rockefeller, to start the E-Rate program – "getting online" meant making sure every school had a connection to the Internet, and that every student had a chance to be exposed to computers in their computer lab.

Well, today, when more and more students have a smartphone in their pocket, all that sounds kind of quaint.

Today, it's not about a single Internet connection, or even having a computer lab.

Today, we know that the greatest potential for educational gains comes when there are connected learning devices for each student in their classroom – and hopefully at their desk and in the places they study. And it comes when there are teachers who are trained to use these tools in their instruction.

The second reason why ConnectED is an imperative is that today our lack of universal high-speed connectivity is holding back the entire learning ecosystem. It's creating a negative cycle that keeps our students behind.

These technologies have changed industry after industry across our economy – but not education. The question we have to ask ourselves is "why not?"

Here is part of the answer: If only a fortunate few schools have high-speed broadband, there is only a limited market for top-notch digital learning. This means that our nation's leading technology and educational content companies may not see a market of the scale to justify major investments in affordable individualized learning devices and interactive educational content for students. This means individual learning devices remain out of reach, discouraging school districts – or states that could have significant bargaining power – from considering a learning device on each desk as an affordable option, particularly in tight times.

I know you are all familiar with the example of Mooresville. Last year, out of 115 school districts in North Carolina, it ranked in the bottom 10 in the amount of money it spends per student. But after embracing the vision of education technology, they've risen in the rankings, and today are number two in the state for student achievement. Mooresville showed what was possible — but they were forced to lease individual laptops each year at an annual price of twice what an educational learning device might cost if there was true scale. And because very few districts have the right tools, educational content producers have less incentive to invest heavily in top-flight educational content that updates constantly, replacing clunky and outdated textbooks.

Simply put: if devices are expensive and relatively scarce, the number of software developers who devote the time and energy to creating high-quality digital content and producing better devices are going to be scarce as well. With a limited selection of tools on the market, there is less opportunity for education researchers to validate their effectiveness, and fewer apps and less digital content for schools to invest in knowing they will deliver better outcomes.

This is the classic vicious cycle, with one key factor – high-speed infrastructure – holding all of it back. That is why this is a market that has lagged behind others, even other highly-regulated areas like healthcare.

What ConnectED aims to do is turn this negative cycle to a positive one for our children. Connecting schools to high-speed Internet is the precursor to this whole market, which is why a federal investment in infrastructure can have a substantial multiplier effect. With the right incentives, we know we are going to see low-price devices available at scale, and teachers eager and prepared to use them. We know we will see an explosion of educational content, and of empirical data that will help districts and teachers know “what works.” We are going to help states and districts support their teachers as they begin to make use of these new digital tools and incorporate them into their classroom instruction. And we are confident that states are going to make those investments. That is why Julius, Arne Duncan, Tom Vilsack, Jim Shelton, Cecilia Munoz, James Kvaal, Roberto Rodriguez, David Edelman and those of us on the economic team, and most of all the President believe so strongly in the ConnectED Vision.

We believe ConnectED can be a tipping point.

It can be Field of Dreams economics – if we build this, the rest can come, so long as we are fully committed and do not assume that it will happen on its own. It is going to require sustained, bold action by the public and private sector at all levels.

What excites me most about the President’s vision of connected classrooms — with children learning from trained teachers, exciting content, and individualized learning devices — is the full meaning of what it can mean for all young people reaching their potential. I think too often, we talk about educational technology only in the simplistic version of MOOCs [Massively Open Online Courses] – as if it is all about letting a young person get a lecture from a far-away teacher. That is no doubt exciting, but the ConnectED vision offers so much more.

Let me mention a few areas that are too often overlooked when we talk about the ConnectED vision:

First, the ConnectED vision can help keep more of our children, from all walks of life, learning and living together. Educators often face the dilemma of how to let their more advanced students learn at an accelerated pace without distinguishing or separating their students in a way that can send negative messages that limit their aspirations or self-esteem or sense that they can be gifted. We all know that we should be sending all of our young people the message that the sky is the limit. ConnectED offers educators the chance to avoid this dilemma: when all students in a classroom are equipped with individual devices and adaptable digital content, teachers can let the student who is excelling to continue going further — and give the struggling student the chance to keep building fundamentals — even as they sit next to each other. This allows a student who might be struggling in math to be helped or inspired by the high-achieving student, while also allowing that high-achiever to see that his peer might be gifted in another subject like English or social studies.

We know that part of inequality is about social networks – and the signals we send our young people at an early age. The ConnectED vision shows that technology can, instead of increasing divides, help close them by keeping students from all backgrounds learning together and playing together. The ConnectED promise is the kind of personalized instruction that can eradicate negative forms of tracking – keeping kids at varying levels of mastery in the same room, all being challenged and all learning from one another. The result would improve everyone’s outcome, while avoiding stigmatization or hurting the aspirations of young people who are less prepared.

It’s also important to emphasize how the ConnectED vision allows students who are struggling to keep trying without feeling embarrassed or ashamed in front of their peers. My mother was a teacher for 40 years, and founded the very successful Family Literacy Institute in Ann Arbor for students who were two grades behind in reading. One of her insights was to allow students to get tutoring in small offices behind closed doors so that they did not feel embarrassed in front of their friends. But not everyone can find a building with multiple small offices. The ConnectED vision can allow the student struggling with Geometry to try and try again on his or her learning devices without classmates knowing, while allowing teachers to target help to the students who need it most. As the New York Times explained in detail about the student experience in Mooresville, “Three desks away, a girl was struggling with basic

multiplication – only 29 percent right, her screen said – and Ms. Holsinger knelt beside her to assist. Curiosity was fed and embarrassment avoided, as teacher connected with student through emotion far more than Wi-Fi.”¹

The same force that kept adults from improving their literacy keeps a third-grader in the back of a classroom from raising her hand for the third time to ask a teacher to re-explain fractions. The result is the same: when they don’t ask, they fall behind – and that can cascade to other subjects, and finally, to life and career. Individualized learning takes technology, and technology can take the fear out of learning in a group setting.

Finally, the ConnectED vision can also transform the way we teach and assess. My mother used to say that sometimes, if we train teachers to only assess a student’s progress by how they do on an end-of-year test, it is like only teaching a doctor to know whether a patient lived or died. Assessment at its best sets clear targets for students, teachers and parents and allows them to assess how they are progressing and what is working on a daily, ongoing basis. The ConnectED vision can help facilitate exactly that type of clear and ongoing assessment. Sometimes, the best data a teacher gets on whether a lesson has “sunk in” is the look on students’ faces. With the precious time they have for individualized instruction, they deserve better data. With this technology, if a student falls behind, a teacher can see it in real time, and is able to act before struggling in one lesson grows to struggling in a whole subject. It allows teachers to evaluate, day-by-day, student-by-student, how effective their lessons are, and students to honestly assess their own work more often, and in a clear and transparent way. In Mooresville, President Obama explained the value of ConnectED when he said: “[I]t gives teachers the ability to see in real time what students need help, who is falling behind, and then offer extra help.” On a recent *60 Minutes* segment focusing on Khan Academy, teacher Courtney Cadwell said that assessment software is changing the way she teaches. “I can track their progress over time,” she said. “I can see who’s rushing ahead, who’s lagging behind. I can see if they begin to stagnate. It’s kind of the red flag to tell me, ‘Hey, it’s time to step in and intervene.’” And the result? “I feel like I’m using my time more effectively with my students,” she said – and with all the time pressures we put on them, that is an opportunity every teacher deserves.

The ConnectED vision can also bring much-needed efficiency, and even cost savings, for schools and taxpayers. Take the case of Mooresville. As the President said when he visited, they “are spending less money getting better outcomes. And around the country, educators have started to take notice.” That can happen around the country. Even when it comes to schools’ existing spending on technology, the savings potential is huge. The Commerce and Agriculture Departments began what might be considered a pilot of this program under the Recovery Act, and through that effort, wired about 10 percent of schools to next-generation broadband. When we did, we asked schools, districts, and states to organize into consortia to raise their bulk purchasing power to levels never before seen in education technology. And the result was that some were able to bring the cost of the Internet connection down by half or more. We know we can do that on an ever bigger scale with ConnectED.

¹ New York Times. “Mooresville’s Shining Example (It’s Not Just About the Laptops)”. February 12, 2012.

ConnectED can also bring about radical changes in other fixed costs of education. As Secretary Duncan said recently, “We are still spending \$7, \$8, \$9 billion a year on textbooks. Beyond that, we have states that are on seven-year textbook adoption cycles ... We know information is changing by the minute, so the fact that we are spending so much money on something that is so outdated makes no sense to me whatsoever.” Consider this: by having broadband connections to their schools nationwide, South Korea is on track to eliminate paper textbooks by 2016. In two years, every child in South Korea will not just be reading course materials with rich content like videos and simulations, their entire curriculum will move online, customized to students’ needs and making the learning available “whenever and wherever.”

The potential for our students and our economy from the ConnectED vision needs to help us rise beyond normal politics. And it is going to require all of us to do our part. For just a few years, modernization of the E-Rate may cost us a few more dollars a year, but to achieve the cost-saving and, most importantly, the gains in education for millions of our young people, this is a short-term investment we can and must make. Education device makers and content providers should see this as an opportunity to do well by doing good – taking advantage of a new market opportunity to provide the next generation of devices, apps and content to students and creating more jobs leading a global education market. We need to support teachers as well, who often do not get enough training and support to integrate technology in their classroom and lessons, despite the importance of those skills. As the President said, “giving teachers the tools they need is a no-brainer” – and this is one of the most powerful tools we can give them.

We need to involve parents. Digital learning can’t stop at the classroom walls. We need to focus on how to bring parents and families in – first to advocate within their Districts that their kids get the very best in technology, and then once they do, ensure students are able to use those devices at home. There is a major opportunity here for Internet and wireless service providers to support the use of educational devices at home, in ways that parents feel are safe and appropriate.

And finally, we need to show students how they can take advantage of these tools. The value of ConnectED comes from the ability for students to learn in new and creative ways – and our challenge is to help students understand how they can use new technologies to better prepare themselves for college and for careers.

The President has chosen to bring these key actors together and push ConnectED forward precisely because he understands the importance of taking the classroom into the 21st century with a vision of individualized learning, sharper assessment, and students working together —helping us compete better for the jobs of the future.