



FUNDING DIGITAL INNOVATION AS A NEW PATH TO LITERACY

HOW NEW YORK CITY'S INNOVATION SECTORS CAN PROMOTE
BREAKTHROUGH LEARNING TECHNOLOGIES



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A Special Breakfast Meeting with James H. Shelton III, Assistant
Deputy Secretary For Innovation and
Improvement, US Department of Education

Hosted by:

The Steinhardt School of Culture, Education, and Human Development, NYU
The Games for Learning Institute, NYU
The Joan Ganz Cooney Center at Sesame Workshop

June 21, 2011

New York University, Helen & Martin Kimmel Center for University Life
Celebrating the 8th Annual Games for Change Festival hosted at NYU

An edited conversation by participants in their own words.





UNLEASHING THE DIGITAL PROMISE: HOW NEW YORK CITY'S INNOVATION SECTORS CAN PROMOTE BREAKTHROUGH LEARNING TECHNOLOGIES

On June 21, 2011, a gathering hosted by NYU's Steinhardt School, of Culture, Education, and Human Development, the Games for Learning Institute, and The Joan Ganz Cooney Center at Sesame Workshop stimulated the birth of a remarkable alliance. In response to a challenge from Assistant Deputy Secretary of the US Department of Education, James H. Shelton III, over 30 leaders in education research, teaching and learning science, venture capital, policy and philanthropy convened to devise a new approach to a collaborative educational enterprise. Shelton's challenge was, in a nutshell, how the resources of the greatest city in the world might be leveraged to generate breakthroughs in learning technologies to help transform educational outcomes and the economic trajectory of the City's vulnerable youth.

Responding to the well-established links between educational reform and the region's economic development strategy, participants considered opportunities in national education, innovation and R&D financing, as well as the City's substantial gains in educational performance as a down payment, to develop a "new learning and innovation cluster."

Leaders from the world-class New York University communities, the New York City and State school systems, non-profit media pioneers, high-tech and software companies, and private investors discussed the elements needed for such a cluster arrangement to help stimulate the 'smart growth' of a vibrant learning technology sector. These diverse stakeholders--ranging from the forward-thinking and cross-disciplinary Games for Learning Institute to the iconic Sesame Workshop and design revolutionaries such as IDEO-- agreed that a new mechanism should be established to create powerful pathways for the City's young people to compete and cooperate in a digital and global age. In light of anticipated national stimulus funding for innovation through both the federal *Race to the Top* efforts in New York State, and the creation of new R&D funding vehicles such as the *Digital Promise* effort recently announced by Secretary of Education Duncan, the convened thought-leaders explored ways to connect the exciting, but disparate efforts, in the NYC educational entrepreneurial space.

Among the issues discussed were:

- Building upon the great progress in basic skills to meet state and national standards over the past 8 years, how can NYC advance its leadership in the fields of STEM, global knowledge and skills, and digital literacy?
- How might current innovation funds be effectively deployed to tie educational initiatives to the entrepreneurial side of capital markets?
- How can the City's unique capacity in capital markets, content creation and tech innovation be best aligned to promote educational change? Can the NYC community proactively combine forces as an "innovation cluster?"

The meeting identified a rich array of almost two-dozen efforts across the City and region that could contribute to new progress in establishing NYC as a global leader in technology-enabled learning breakthroughs. Moving forward, several leaders have developed a planning group to integrate the data and lessons shared in June.

This report summarizes these rich and important conversations and is intended to stimulate specific follow-up action that will be documented by the Games for Learning Institute and the Joan Ganz Cooney Center in the months to come. Please share your feedback with co-hosts.

Kind regards,

Chair, Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

Mary Brabeck, Gale and Ira Drukier Dean, Steinhardt School of Culture, Education, and Human Development, NYU

Ken Perlin, Director, Games for Learning Institute, NYU

Jan L. Plass, Co-Director, Games for Learning Institute, NYU

Susan Stratton, Strategic Initiatives and Partnerships, Games for Learning Institute, NYU



**NYC****Department of
Education**

Division of Special Operations

David A. Wiener, Deputy Chancellor

September 12, 2011

Dear Colleagues:

The New York City Department of Education (NYCDOE) has worked diligently to make New York City a place that attracts education innovators of all stripes, a place where new ideas meet old problems and innovators devise solutions that significantly move the needle on student achievement. Two years ago, we created the Innovation Zone (iZone) to lead the development of innovative initiatives with the potential for large scale and high impact on student achievement. The main goal of the iZone is to personalize learning to the needs, motivations, and strengths of every student learning in an iZone school. Partnering schools with public and private sector experts has proven successful in the NYCDOE's efforts to develop and grow new high-performing schools, and we have full confidence that public-private partnerships will continue to translate into greater success for NYC students.

NYC's Innovation Zone is positioned to be a demonstration site for how large school districts can leverage their size and strategic partnerships to drive innovation with the market for education technology. In positioning ourselves this way, we will ensure that the market is creating solutions to meet the real needs of our schools.

We are proud to count the Games for Learning Institute as one of our many partners in this effort. In pursuing a world where digital learning is neither fad nor threat, but an integral component in an educator's toolkit available in various forms to differentiate student learning, assess student understanding, and increase student engagement, G4LI helps us to see the possibility of new ways of learning and paths to excellence in the classroom.

We at the NYCDOE are very committed to continuing our work with various partners in the public and private sectors to address long-standing challenges in student achievement. We look forward to discovering new partnerships to address those challenges in new ways.

Sincerely,

David A. Wiener
Deputy Chancellor

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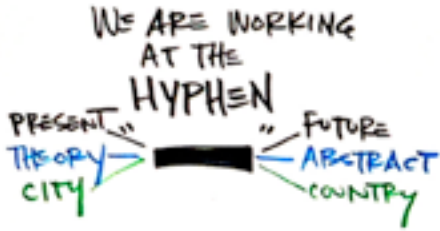
Acknowledgements and Notes



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I. WELCOME



I. Working at the Hyphen

Mary Brabeck, Gale and Ira Drukier Dean, Steinhardt School of Education, Culture, and Human Development, New York University

It's really thrilling to see all the people gathered around this room today because we're launching an important discussion that's bringing together non-profit companies with corporate partners, with game designers, with academic researchers, with practitioners and policy makers. It's fitting that we are convening this group here at NYU under the auspices of the Games for Learning Institute and the Steinhardt School because at The Steinhardt School we talk about working at the hyphen of theory and practice, at the hyphen of local, and, in our case, very urban and global, and at the hyphen of being present, looking at the needs in our city and in our country and in our world, in the immediate moment, but also in the future.

We are a mission driven organization in the Steinhardt School, and one of the central aspects of our mission is to try to enhance the teaching and learning in the STEME fields (Science, Technology, Engineering, Math and Environmental Sciences). And we will be launching, in the very near future—we're working with architects right now—to design a state-of-the-art STEME Education and Research Center that will study how children learn science, technology, engineering, mathematics and environmental science and how teachers can better teach it. Critical to this work we are doing and discussing here today is linking through technology to the NYC schools to study how children learn and teachers can better teach in the STEME fields.

I want to say a special welcome to a couple of people: Dianne Rekow, Provost at NYU Polytechnic, David McLaughlin, our Provost here at Washington Square Park, and our Senior Vice Provost for Research at NYU, Paul Horn. It's a special pleasure for me to welcome David Steiner who has joined us in his capacity as Dean of Education at Hunter College, and also as former Commissioner of Education for NY State. I want to say a very special welcome to Shael-Polakow-Suransky, the Deputy Chancellor for the New York City Department of Education. Our partnership

with the NYCDOE and the New York City schools is critical to the work we are doing and to the discussions we are having here today.

It's fabulous to host this conversation. We have such a wonderful group of luminaries around the table. So, welcome to all of you, and thank you from the NYU community. And, it's a distinct pleasure to welcome back Assistant Deputy Secretary Jim Shelton. I was here for the conversation with you a year ago, and I am delighted that you have rejoined us to continue this conversation about how we can further this work in gaming and kids' learning. So thank you, I'm going to enjoy this conversation.

http://g4li.nyu.edu/May28_2010/report/forReview-ByAttendees_May28_2010G4LI_Report.pdf



< click or scan to see report: *Gates Foundation Symposium, May 28, 2010: Games for Learning: A Discussion of the Potential of Video Games to Transform the Future of Learning*

II. STATE OF PLAY

2. Introducing NYC's Chief Economist: Steve Strauss

Ken Perlin, Director, Games for Learning Institute, New York University

Of course this is an amazing gathering of people! We're very lucky that this group of people can get into a room together because as Jim Shelton has been pointing out to us, very wisely, we don't actually get to transform education until all of the sectors—from the kind of research we do, to getting things into the school, to getting the commercial sector, to getting the government involved in the right way—all come together in an informed way. We hope that this kind of conversation will allow those connections to happen in the way that we need them to happen.

There is a strong, very direct connection between improving children's education and improving the economy. I feel as though by passing the baton here I'm sort of going directly from one of these pieces to another. Basically we're all on the same side: those of us who are in academia look toward the people in city government who look directly at questions of economic development to sort of tell us what can we do to help, in our part, to contribute to the larger picture. So here to explain that to you from his perspective is Steve Strauss, who is the Managing Director of New



York City Economic Development Corporation. We're very honored to have you here.

3. The Cost of Innovation in NYC

Steve Strauss, *Managing Director, New York City Economic Development Corporation*

So it looks like I have three minutes to solve America's education problems and explain how those will also solve our economic development issues. Oh, dear, I think I'm going to be a disappointment.

Let me offer a couple of high-level perspectives. If you look at the United States at a high level—by the way, by training I'm an economist, so I'm going to rattle off some numbers. We spend about 7.6% of our GDP on education. The OECD average is around 5.6%, so actually we spend a lot more money than most people do educating people. We spend more as a percentage of our GDP, and we also spend more per capita for the education of our students. By the way, most of that difference is in the higher education sector where the US spends about 3% of GDP on higher education vs. 1.5% of the GDP in most other countries.

How many people have spent time in a European university? While we've got a lot of problems in our higher education system, we're actually a lot better funded than many of the other schools. In my own experience when I came out of school with my Ph.D., I looked at educational opportunities in Europe, and had the odd experience of explaining to some of the faculty members that what they considered professors' compensation or starting faculty members' compensation was less than I had been making as a graduate student in the US. So, we do have some strengths. A Chinese university does a list of the world's top 200 universities-- and if you look at the top 50 schools on this list--the United States completely dominates it. So let's be clear that we do have some strengths.

Well, that was the good news, now onto the bad news. If you look at below higher education, if you look at the world that sort of starts with pre-school going through high school, the US is not really doing as well. Education rates at American institutions, just to take one random factoid--currently about 77% of American high school age population get a diploma, relative to about 90% in best practice countries such as Germany, Korea, Norway and other places. Then again, and you've all seen the statistics in the newspapers, if you look at our actual performance against what we see against the OECD averages as you go from pre-school through high school, we're, at best, the middle of the pack in many categories, and in others not even that good. So these are all areas we need to develop.

How many people are familiar with an Israeli edu-

cation company called Time to Know? The founder always likes to make an interesting point that if you took a teacher who taught English in 1910 America and dropped that teacher into an American school system in 2011, after perhaps three days of training they could do their job again. Think about it: the world has not changed that much in the way we do higher education. There's actually almost no other industry, I certainly can say no other industry, where you can make that statement. So, I suppose you can say we have a lot of problems or a lot of opportunities to develop.

Looking at things the City is interested in and how we view New York as a platform for growth, most of these are more observations about how we think New York City can help in these areas. We are a major education center. We're a major place for doing research. We're the largest public school system in the United States--something on the order of 100 colleges and universities. In the broader sense, we're a major platform for doing research and a major market for testing.



We do believe very strongly from an economic development point of view: education matters. It matters

on multiple levels. Again, another factoid for everyone to consider: the unemployment rate in the United States is about 9%. Anyone want to guess what the unemployment rate is for people who have four years of college plus graduate school? 4.25%. In effect, the recession is actually over for people with a college education. So, education is critically important to the future of the country. Look at where we're no longer competitive. It's in areas where the skill level is basically high school level. It's much easier to outsource those jobs. It's much easier to offshore them. Where we remain competitive are in high skill activities.

What is the City doing about this? We're certainly trying to make New York City much more of a hub for innovation, much more of a center for development. Working with NYU and Columbia, we recently founded the New York City Media Lab (<http://www.nycmedialab.org/>). We are working on programs to make New York City a center for software development. How many folks have participated or are aware of a program called NYC Big Apps (<http://nycbigapps.com/>)? So, it's a program for making the city's data sets available to the software community. We are very enthusiastic supporters of economic development. We're very enthusiastic supporters of fostering development in the EduTech sector. But, I confess I'm here today far more to learn than to provide anyone with any answers.

4. Technology as a Resource and a Tool to Rethink Teaching Practice

Shael Polakow-Suransky, Deputy Chancellor, New York City Department of Education

I wanted to start with a story of my first year as a teacher. Somewhere--about six months in--I was struck by the fact, that I had this idea that the 27 kids in front of me were all learning the thing that I was talking about. I realized one day that, that absolutely wasn't true. The conceit that it was possible to stand in front of a room and get everyone to think about and learn the same thing was only in my mind, and that in each of their heads, a totally different story was occurring. Some of them may have been interested in what I was working on with them--others were thinking about their mom, or their girlfriend, or their dog, or their sports events, but any number of other really important things in their lives were intervening, and sort of clashing with that moment where I was trying to shape that group into a community focused on a set of skills and new knowledge. And I think we often, as teachers, kind of overlook the complexity and the actual reality of what's going on in a classroom, because if you don't, it becomes quite overwhelming.

I think that what we've started to learn as we've engaged with the work around how technology can become a resource and a tool to rethink teaching practice, so that we don't have exactly the same model we had 100 years ago, it goes to the heart of that question which is that people learn in different ways, at



different paces, and need different things. And even if you segregate kids by academic ability, no matter what sort of constraints you put around it, you're still going to have tremendous diversity and a whole lot going on. And so, the challenge becomes how do we honestly respond to that fact.

I heard it from Harris (Polls) recently that being a teacher is closest amongst all professions to working in an emergency room. The number of decisions that have to happen in rapid succession, and the level of intensity with which those confront the teacher, are tremendous. And so, I think that, that actually is a context for people who've taught, who have a sense of what that's like. If you haven't taught, it's hard to

imagine just how much is going on. I think that what many teachers who become masters at their craft have learned is that using very low-tech solutions works. They need to break things up and create opportunities for kids to learn from each other, for kids to learn independently, for kids to sort of work towards mastery of a set of content, not to try to get everyone on the same page at the same moment.

And so, now we're at a moment where there are actually some tools and resources that present themselves as real solutions. And I think we should be honest that they don't exist yet for the most part. All of us are at the beginning stage of exploring what's possible here, and so the state of what we've been able to accomplish is very limited. It's important not to overstate what we've been able to accomplish thus far, but I think we can start to see what it might be and that's sort of the exciting opportunity that's presented itself by a conversation like this one. And so, we're very excited that the Department of Education is part of this conversation, and is supporting this conversation.

Over the past 10 years we've worked really hard to make NYC a place that attracts innovators of all stripes. We began by sort of engaging with many nonprofit partners around school design and development and have started over 500 schools, 400 of them are district schools, 100 are charters. And through that process, we've attracted tremendous talent and lots of really great ideas into the city. We see models of school design that are really different and are accomplishing dramatically different results. In the new schools we've created, the graduation rates tend to be 40 points higher than in the schools that they've replaced. There's nowhere in the country that has that kind of breakthrough gain to speak of in high school reform. And so we're confident that we've found some sort of solutions that are actually working.

But when you drill down beyond the structure of the school and into the classroom, it actually isn't that different, you know. The daily practice that's going on looks quite similar. And there are always interesting and innovative exceptions to that, but the norm has been to reproduce what people know and what they've learned to do over the years. Two years ago we started to create an Innovation Zone within the public school system. We now have over 100 schools involved in that work and it is an exciting space to test out projects and programs and models.

We are really interested in kind of creating an ecosystem that supports taking risks, trying new things, and working with new partners that aren't tested. As we see it, one of the big challenges is convincing folks who have resources to invest, whether they are foundations or private companies that there is actually a market for this work. And we're working hard at trying to articulate what is it that we actually need. What kinds of tools and resources are working or

where the gaps are that we're seeing, and also how do we create lower hurdles around procurement so that we can start to use public dollars to engage in some of these experiments.



Now none of it is simple. Until this year, for example, with David's help (David Steiner, former Commissioner of Education, NY State) we just got the law changed that prevented schools from spending any of their money that was set aside for books on software. There was actually a New York state law that said you could not spend textbook money on software. And so no digital content could be purchased with those resources. So that's changed. So small steps, incrementally, are starting to shift. As we engage in this work, we're hopeful that the work folks around this table are doing can push us, and that we can partner together as we start to kind of evolve and go to the next steps in this work.

I also wanted to introduce David Weiner who has just joined NYCDOE. He's the new Deputy Chancellor for Talent, Labor and Innovation. David's a former principal in New York City. He was Chief Academic Officer in Philadelphia until about a week ago, and has led similar innovation work there and is now taken on leading the innovation work here. So that's it. Thank you. Good to see you all.

5. Introducing a Model Innovator: Sesame Workshop

Susan Stratton, *Strategic Initiatives and Partnerships, Games For Learning Institute, New York University*

It's my pleasure to welcome you all here, and to really to say how very much we appreciate your time. You all have many other things to do, but there are some important issues for us to discuss together today, and just maybe, as part of these conversations, we can even find ways to work across our various sectors together to create something new.

It's my additional pleasure to introduce Gary Knell, who a lot of you know is the President and CEO of Sesame Workshop, to talk a bit about how to sustain innovation. And, I think of all the people here today, Gary's really very well poised to remind us that innovation comes in a lot of different sizes and shapes, some fuzzy and some in the shape of very big yellow birds.

Today, it's hard to imagine Sesame Workshop, which is the global phenomenon now, once was really just a start up. 'One' woman, Joan Ganz Cooney, had 'one' pretty good idea. She nurtured her idea with the help of the Carnegie Corporation, which was her latter day equivalent of an incubator. Joan had not only 'one' pretty good idea, but she had the good sense to hire 'one' man called Jon Stone as Sesame Street's first director and executive producer. Jon's first hire was 'one' little known puppeteer called Jim Henson, who was also my mentor ...and the rest as they say...is history.

The singular kind of innovation demonstrated by Joan and Jon and Jim are shining examples to those of us in the industry, and have been a watchword at Sesame Workshop for over forty years. The legacy of their largesse and innovation extends today to our friend and colleague Michael Levine, the Executive Director of the Joan Ganz Cooney Center at Sesame Workshop (<http://www.joanganzcooneycenter.org>) who helped corral a lot of you here today. Michael's like a compass: he keeps us all going in the right direction. So it's really with a great personal sense of pride that I'm able to introduce Gary to you this morning to nudge our discussion about sustaining innovation along in the right direction. So, without further ado, here's the President and CEO of Sesame Workshop, Gary Knell.

6. Sustaining Innovation, An Introduction to James H. Shelton III, Assistant Deputy Secretary for Innovation and Improvement, USDOE

Gary Knell, *President and CEO, Sesame Workshop*

I want you all to know that there's a documentary coming out about our master puppeteer. If there was anyone to follow in Jim Henson's footsteps, it's a guy named Kevin Clash, who does Elmo, (who is Elvis to three year olds, in case any of you haven't checked recently). There is a wonderful documentary that was at Sundance that's coming out this fall called *Being Elmo*. It's quite amazing. Done by an independent producer. Kevin has the same story as Jim Henson's--about cutting up his father's suit when he was ten years old to create a puppet, a puppet which went on to become a big hit-- in Kevin's case, Elmo. Kevin thought his father was going to be not all too happy about this, so he went into his dad's room. His dad looked at him, and Kevin thought he was really going to get a whipping, and instead his dad looked at him and said, "Next time, ask!" So, that's a little bit of what I want to say to introduce



today's discussion with Jim Shelton, which is really about the original vision of *Sesame Street*. It might not have been a digital innovation, maybe it was an analog innovation in 1969, but it was really trying to buck up against the conventional wisdom that television couldn't teach, that it was the 'idiot box' as it was known in my house.

We had an achievement gap back in the 1960s. It was a time when President Johnson launched the War on Poverty. We had Head Start kicking off around the same time. PBS and NPR were invented right around the same time by the Public Broadcasting Act. The idea that you could actually transform television at the time to try to be an educational tool for the masses was something pretty revolutionary. *Sesame Street* got a lot of these creative guys like Jon Stone and Jim Henson together with the Harvard Graduate School of Education (which knew nothing about television at the time), and threw them all in a room and came out with this multiracial, multi-ethnic, diverse cast with an African American couple and a Hispanic couple and big, tall yellow canaries and green grouches. They all came together. It was so revolutionary at the time, (it sounds a little ho-hum today), but it was banned in the state of Mississippi for the first year of the show. It was actually not seen in the state of Mississippi because the show was a threat, showing multi-ethnic neighborhoods where people could actually get together.

So, we've come a long way since the beginning of all that, but I think the idea of how the equation was changed remains with us today. The concept for the Children's Television Workshop was built on really three poles, based on a truly original idea.

The truly original idea about *Sesame Street* was taking a model of teaching that was called advertising. Even today when we talk about marketing to kids and the push back around food marketing and things like that for good reason, the fact is advertising works and advertising teaches. So why not teach or advertise the letter B instead of junk food or the number 6 and figure out a way to sell education to kids in ways that they're actually going to learn from. That was a really truly original idea. The show was modeled after that, and a show called *Rowan & Martin's Laugh-In*.

The second was creating a multi-sector team. What was really innovative about this model was that you had researchers. You had creative people, and you actually had business people who knew something about bringing revenues into this organization, which created the third pole, which is a sustainable model.

What Joan Ganz Cooney and her colleagues did, which was so brilliant at the time, was to build a licensing program around intellectual property that still to this day funds about half of all our revenues. Like the University of Michigan football team, not

the NYU football team, they bring all of the revenues in to pay for all the men's and women's athletics combined. So *Tickle Me, Elmo* brings in revenues that pay for the research and production of *Sesame Street*, and so much else that we do. So building a sustainable model in addition to having a multi-sector team and a truly original idea has really been, I think, the formula for success for *Sesame Street* today.

So, we're in 140 countries around the world. Now this model is being emulated in places like Pakistan where we're working now. We just launched in Nigeria two weeks ago. The USAID, the United States Agency for International Development has become a true believer in the use of media to educate populations and are funding those two productions--because it works.

When we look at where we're going forward now, we have to think about the framework of 2011. We see, at least from our vantage point, pre-school is kind of a mess in America. We see the Chicago longitudinal study coming out last week, which I'm sure a lot of you saw, as a pretty definitive study that shows that pre-education has a direct positive impact on high school graduation, health outcomes, higher income levels, less like to be incarcerated, alcohol and drug abuse, and on and on and on. This was a longitudinal study tracking kids in Chicago over a 20-year period of time.

At the same time, we know that young children today are digital, being born with all of these appliances, which are not great technology innovations to them, and they are just a normal part of their lives. They don't think about them as electronic or non-electronic, it just 'is'. It's like the way I feel about the refrigerator versus the way my grandmother thought about the refrigerator.

Today we have to learn from and learn to do what Joan did in 1969: take the 'idiot box' and turn it into a learning tool. Today we've got all these devices, and we need your brains to work in gaming platforms and with technology partners like Microsoft and others, where we can connect the dots and have that truly interactive experience for children that is going to make a difference for half the kids in this country where the public schools are just not cutting it for a whole variety of reasons.

So, it's with that, in conclusion that I want to thank NYU for hosting this breakfast meeting. New York City has been so innovative and people like the School of One and Quest to Learn and everyone else are doing amazing cutting edge work to make this happen. We're here to partner with you. This innovation revolution, that Shael Polakow-Suransky, Chancellor Klein now being carried on by Chancellor Walcott, we hope is going to continue to grow and we want to make sure that this passion spreads across America, that same quest that made it possible for



Sesame Street to cover this country back in 1969. Let's figure out a way to get some of these innovations and using the tools that we know teach kids spread across America to make a big difference.

I have to say that under Secretary of Education, Arne Duncan, the I3 programs, the Race to the Top programs, and the quite brilliant strategies to nudge a group of states who were so reluctant for so long to make reform happen--it is this truly brilliant carrot-and-stick approach, in my view, that has moved hundreds of school districts and states and not-for-profits to work together. The person who is probably most responsible for that is someone who we're privileged to welcome to New York today, really the "Chief Education Innovator" for the US Department of Education, who doesn't need a long introduction because you all know him. He is a fan of *Sesame Street* among other things. Please welcome Jim Shelton.

7. The Challenge of Improving and Innovating America's Educational System

James H. Shelton III, Assistant Deputy Secretary for Innovation and Improvement, US Department of Education

"Good Morning, Everyone!"

"Good Morning, Jim!"

Anyone who's heard me talk knows that I talk a lot, and I do that because I represent a lot of people who do a lot of work, including the present Secretary (of Education, Arne Duncan) who has a lot of vision and a lot of courage. I talked to Secretary Duncan before he even took the job, and he made it clear that if he were to become the Secretary of Education that he just doesn't like a lot of pomp and circumstance. I know Arne pretty well, and anyone who does, knows he doesn't like to give a lot of speeches—and a lot of things that go along with being Secretary (of Education) are not his kind of thing. Secretary Duncan told me: "I never liked getting a call from the Department of Education when I was the Superintendent, so I think we should turn the Department of Education into an engine of innovation instead of a compliance machine." And he said that before he got the job. And he set out to do that when he got the job, and he invited me along for the ride. And so, here I am.

It's a funny thing when you're the innovation guy at the Department of Education. People often look at you like you have three heads. You're a big bureaucrat, and a lot of people think innovation actually can't happen in the context of government. In some ways I have to agree that the role of the Federal Government is actually to create a context for great people, like you, to do great work, and by supplying resources, capacity and space and opportunity--we can. So, I'm going to talk about how we're trying to do that, and I'm now going to really talk to you about what you

have the opportunity to get done.

The reality is I talked last year at the inaugural Games for Learning Day at Games for Change 2010 at NYU and at Games for Change in 2009. And, in looking at innovation in education, what we realize is that we don't have a healthy ecosystem for innovation. When you look at the basic cycle of R&D and commercialization about investment and entrepreneurship, for demand and deployment, for adoption and use, the public sector has to layer on regulation and funding. At every point in that system, we've got problems. We're underfunding R&D. We spend 1-2% annual spending compared to utilities where we spend about 2-3%. Or if you talk about the technology sectors, you're talking about 15-25%. The sector of investment in entrepreneurship is a tough, tough sector. So, we wind up with limited investment. We count our investment in great entrepreneurs. This year it's an up year in the hundreds of millions of dollars, not quite 200 million. Whereas, we're talking about billions of dollars going into clean energy and billions of dollars going into the life sciences.

Demand. You know we have a highly fractured system. You want to talk about the institutional side, we know the procurement process makes it difficult to sell anything into the schools. In fact, people make decisions in our school system about what they purchase not with the best of information about what actually works. We know you might go into a school and anyone whose been in this work for a long time knows, you go into a great classroom and see something happening that looks like it's changing these kids lives, and you can walk down the hall and not see the same thing, let alone those next door or the next school system or the next state. So, we've got not only a problem with the creation of things significantly better than the status quo, but how do you actually take those things to scale.

How do we create a context where we can transform this ecosystem? Well, one, we can try to create the regulatory funding environment for that to actually happen. A little of that you can do from the federal level. We've got some money, a good amount of it, that in lots of ways we spent for the last number of years unintentionally in terms of the incentives that it creates. In the last couple of years we're trying to get really intentional about those incentives... whether it's creating the context and the foundation for reform, by saying, "Look, we can have meaningful standards for kids in southern Mississippi and kids in Massachusetts, and pursue the same learning goals. Reading should be something that everyone has in common and should accomplish and should be doing at the same level if you are an American citizen. If you live in America, you should be guaranteed when you graduate with a high school diploma-- that it actually means something.



And, we need a data system to tell us how we're doing. We need to know how our kids are doing, to be at the center of our conversations about whether we are performing or not, and that we've had schools in our country that have been failing for decades, literally. That is, we have knowingly sent kids into schools when we knew that more than half of them when we did not know what would happen when they came out. And we've done it year after year after year. We've got to stop doing that.



Pretty simple framework from a federal level,--which creates a context within states for much more dramatic change, and much more innovation, but 90% of the resources are within states. And, it's at the local level where we have 15,000 districts that make all the decisions about what actually happens with the kids. And what we don't have and never have had is a system by which we can actually drive into these local decision making authorities, a discipline around driving innovation in learning, or about transforming what is happening not only day to day, but systemically, year after year.

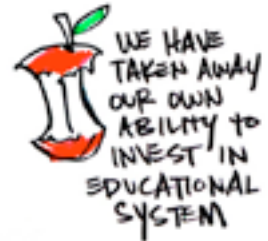


Steve Strauss, NYCEDC, has laid out a great context for us because *this education thing matters* on multiple fronts. It *matters* in terms of everyday, individual life opportunity of people. It matters in terms of our economic competitiveness worldwide. The way that we will actually sustain our lifestyles is completely dependent upon not only our ability to educate our best, which everyone agrees we do better than anyone in the world. We educate, in the best of our institutions, our best, better than everyone, but we've got to educate many, many more of them because the sheer numbers say that if China does the best with their top ten percent they will have replicated the equivalent of our entire population. The sheer numbers will overwhelm us. And, the same is true in England. And lastly it's actually, literally, *important* because one of the things that established America in terms of its leadership was our education system and the opportunity and the promise that it provided.

We've actually exported that in many ways around the world. Even those folks who don't admire the way our K-12 system is performing they admire the ubiquity of it. But, we've given up that leadership position. We've given up the opportunity to help shape the world by not saying this is the right way to treat your citizens, and these are the opportunities that you should give them. And we've done it in a way that

was slow.

When you look at education worldwide the numbers vary, but it's somewhere between a 4.5 and 5.2 trillion dollar sector. Here in the United States we have seen the largest decline in the K-12 system in productivity of any sector of the last four decades. Let me explain that really clearly so we all know what that means. What that means is we've increased our funding roughly 80% in real terms since the late 1970's in real dollars, but we have not significantly improved our outcomes, graduation rates, achievement rates, single digit improvement over that period of time. And we've done that on the backs of teachers' salaries, which in real terms, have declined. What did we do? Put more people in to get no better results. So, what we've done is not only not improved system, we've taken away our ability to actually invest in a significant way in dramatic improvement, and we now have a system, which along with our other public expenditures, we're figuring out that we can't afford.



Let me frame it another way. If we had held constant the adult to student ratio that we had in the late 1970's, our average teacher would make about \$120,000 this year. Think about that. All the conversations we have about human capital. All the conversations we have about valuing our teachers. All those conversations could be fundamentally different had we made different decisions on how we invest in innovation at that time to improve our school systems. Because what was said earlier is true, the classroom looks ultimately the same as it did a century ago, but what we've done is make jobs for teachers much, much harder.

I'll explain it in three specific ways. The first one is the diversity in our country continues to grow. What we used do is be very, very comfortable with the notion of I'm going to just sort you out. Some of you aren't going to get any opportunity and that's going to be fine. Some of you are going to get some opportunity, and that's good because we need some people to do those jobs. And, we need a few of you to do these professional class jobs. That meant, in the classroom, a teacher had a span to manage in terms of diversity of her students, the local resources they had, the best of correlations and the preparation to actually do that level of work.

We flipped the switch on that. Instead, we said we want all students to have that opportunity. We actually want to have all students reach those highest levels of performance. In fact, we need them to. And we have those students in the class with the teacher that has a variance in student preparation and capability that's much, much wider than it was before. And now

instead we've given them the great tool of multi-colored markers to manage that situation as opposed to one single colored chalk. They don't have real tools. They don't have the ability to understand what we ask them to do is understand exactly what each student needs and is interested in so that they can match it with the perfect content and constructive approach. That's what we ask teachers to do everyday when they walk in the class and see all this described without the benefit of any tools.

We've also asked them to take on a lot of the responsibility for the change of our social structure that the families and communities used to take care of. And we've not been thoughtful about the ways that we actually create the infrastructure to provide some of the capacity that families, need---not only because of poverty, but also because of the working dynamics of two parent households where both parents work, and because of poverty where the safety net systems are not working in a way that they used to, and on top of that, innovation is something that has to happen as well.

And, the third thing is that what we've done is that we've created a system of accountability that is very, very strong on the stick, and very, very light on the carrot, and absent on the support. We spent a bunch of money on professional development on things that we don't know actually work, in fact that most of studies say don't work. So, to say we support teachers with professional development is pretty much a fallacy.

So, I've laid out all of the bad things, here's the good news. The good news is that we can see in front of us now, and actually have examples in front of us of breakthrough opportunities in terms of outcomes. We're seeing them at the higher learning level where there have been core redesigns, where in fact they were taking courses where students passed at the rate of 42% to pass rates of 98% and doing it in half the time, with the same teachers, and we're getting much higher grading in engagement. Think about that: the same professor, same content, same student population, twice the outcome, half the time. Imagine if we can bring that down to K-12.

But what we have right now is a disconnected system where the R&D is fractured, disconnected. It is not connected to direct interventions and solutions inside the classrooms. It's not connected to a commercialization sector that attracts entrepreneurs and investment. We don't have the ability to aggregate the demand and have not aggregated the demand in a way that will actually create marketable incentives that then create solutions, and then get them into the system quicker with proper theory and prep without the accountability system crashing down on them.

In this room we have everything that we need to correct that problem. We happen to be in a city that is

large enough to actually be it's own ecosystem: NYC. Forget about the rest of the state, because if you're making it in NYC, all the better for the rest of the state. NYC has the ability because of the concentration of research, development, entrepreneurship, philanthropic and real investment capital, the kind of demand you can create, the technical infrastructure that can be deployed and in many cases is deployed and the context in which it has already created some space and is creating more to fix all those problems, and to create additional new funding in a regulatory environment where the incentives are in fact how to do things better, faster and cheaper.

Now I look around this room, and I say to you, "All the players that need to be in the room to make that happen are here represented." I would also say: "What have you done to reach the people who are not in this room?" We should leave here today with a pretty clear agenda about how we move forward if we're serious about creating that system.

Sesame Workshop stands here today as an example of innovation 50 years later, an institution that has transformed how we think about the opportunity for widespread education to lots of young children with a tool that has severe limitations as an instructional tool. Imagine the world where we can in fact create tools that interact, the kind of tools you can enable teachers to actually understand exactly where a student is and intervening in exactly the right moment and have recommendation for exactly the right resources.

This is not some ephemeral thing that is out of our reach. This is something within our grasp if we actually move on it. So, I'm glad to be here today with you so we can have this conversation, because in a year, I'm going to come back, and it's going to be done!

III. MODELS FOR INNOVATION

8. Comments from The Chair: Responding to Assistant Deputy Secretary Shelton's Challenge

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

I run the Joan Ganz Cooney Center at Sesame Workshop. We have the privilege of spending an hour together to respond to Jim's challenge. Three questions:

First, real productivity gains--which educators are often not up to talking about--real productivity changes in learn-





ing. So, that's the big question: how can we more coherently advance that intention?

Second, what are some of the key models upon which to build?

And third, there are plenty of mechanisms in the room, plenty of councils, plenty of partnerships, but do we need some new set of carrots, some new sets of supports, new mechanisms that will kind of bring us together to drive towards the vision that Secretary Shelton (USDOE) and Commissioner Steiner (NY State) and Chancellor Walcott (NYCDOE) have been putting forward?

There's a lot of coherence if you look at the Race to the Top proposal that was funded. There's a lot of coherence around the educational vision, but I think the question now is whether some of the digital tools combined with the strategies that we have can advance and actually bump up that productivity.

So, I'm going to call on three people from three different parts of this community today. A few words from you, former NY State Commissioner David Steiner. NYU Poly Provost Dianne Rekow, I'd really be interested to learn about the new innovation cluster work you are doing at NYU Polytechnic. Richard Green, Director of Content, School of One, I'd love for you to talk about your model and your reflections on what it has taken to get you to this point and what it's going to take to drive new innovation forward at The School of One.

9. Solutions to Fit the Scale of the Challenges Before NY State

David M. Steiner, Klara and Larry Silverstein Dean, School of Education, Hunter College, former Commissioner of Education, New York State

From the State's point of view, let me put the challenge very squarely. We have on the one hand an enormous challenge because of human capital. Just to say in this city alone we have a quarter of those who graduate from high school are ready for further education. So, the dilemma is huge. That puts the State in a position of wanting to put standards and floors underneath performance—common core standards, statewide curriculum, which presses us towards a vision of that if not carefully handled, could create a kind of situation that Shael Polakow-Suransky (Dep-

uty Chancellor, NYCDOE) spoke about—we will have one system for all people. With one standard, we try to press all students into that standard. There's a real need for that at some level because we have so many people falling through the cracks.

At the same time, we want that individual learning plan, that individual education plan, for every student. Why only for special education? Why is it that we think that special education kids are different from each other, but all non-special education kids are the same?

How can you help us with technology to meet both goals? That is, to have high floors so that people don't fall through the cracks, which has tended to mean standardization, and innovation so that each child advances at the most efficient pace for that child. It comes to a head in the RFP the State is about to release in the next couple weeks. We are the first major state to make a Race to the Top investment in curriculum. Only Louisiana has anything like this statewide curriculum. If you can help us to innovate around the curriculum so that we have those two goals in mind, we will make a huge step forward because we believe that with well designed curricula-- with the evidences from Louisiana--over 90% of the districts voluntarily then used this new statewide curriculum in place of the old fashioned one.

Imagine if we could do something low cost using the technology, energies and minds in this room to hit those two goals. That would be extraordinary and exciting! Regarding our RFP, we hope it's imaginative. Thanks to the funding for Race to the Top we have 24 million dollars, which doesn't sound like a huge amount, but it's 24 million more than we've ever had for curriculum development and statewide innovation. I use that as a symbol of what we need help thinking about in this drive for universal standards, but also innovative focus on individual learning.

10. Comments from The Chair

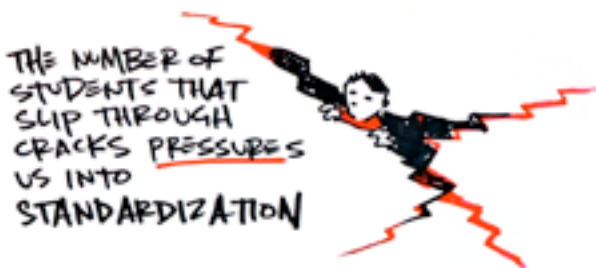
Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

Thank you, David. I want to turn to Dianne Rekow who's doing some remarkable work at NYU Polytechnic, but before I do, Jim, will you mention just a little bit about the innovation clusters and the work that you're doing at the Department of Commerce?

11. The Cross-Sector Innovation Cluster, A Working Model in Arizona

James H. Shelton III, Assistant Deputy Secretary for Innovation and Improvement, US Department of Education

So, one of the things that as the administration we've been trying to drive as part of the economic develop-



ment strategy is to stimulate innovation clusters so that regions actually identify an area where they think they have a comparative advantage, build capacity around it, and then put together a very intentional innovation strategy for how they're going to press the field and create more economic opportunity and growth around that specific area. Some people are picking clean energy. Others? They're picking other sectors. And I'm trying to encourage a number of folks to think about learning and learning technology as a specific sector.



Arizona is one place that is already taking on the same work in this area. Arizona State has leveraged their resources. They are the HigherEd in Arizona. They've had 6% reduction in state funding, they've increased their enrollment by 25,000, increased their diversity of that population and improved on every metric including STEM participation, completion and graduation, and have now connected 17 districts with an incubator that has 35 learning companies in it, that is all embedded among the research community.

12. Comments from The Chair

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

This is a story you don't hear very often about Arizona. These clusters are also being advanced very aggressively by the National Governors Association, and it's also based on a lot of work they're observing in India and China. Dianne Rekow has been organizing something like this and I'm just wondering if you could mention it because I think it might stimulate us to think about how to participate.

13. The Value of a Media Incubator and Student Training in a University Setting

Dianne Rekow, Provost, Polytechnic Institute of New York University

One of the things that Poly has is a spine in all the curriculum of invention, innovation and entrepreneurship, and that begins with innovative and not so innovative courses. That begins as early as the first year of training, and goes all the way through incubators and including the media incubator, which we're partnering in with Columbia University, New York City and NYU (<http://www.poly.edu/nyu-poly-in-media/2011/06/17/mayor-bloomberg-launches-nyc-media-lab>).

I think that there are many interesting parts of that curriculum, but the most compelling part of the excitement that we generate is what the students within the constructs of very structured and disciplined engineering programs are doing based on what you can

do, not what you can't do. This is important at Poly, and how you can do it while having fun is really important. So, we have a gaming lab and we have been using games as a transformation of how it is you can get engaged in what you're doing and on the fly learn many of the pieces you need informally, so that we aren't necessarily starting with: "You will learn this, then you will learn that, and then you will learn this other thing."

And of course, in the freshman engineering laboratories they get Legos and other interesting opportunities to try to understand what it is they might do to be able to get the Lego robots to do this, that or the other thing. What they're doing is playing with things they've learned as part of their childhood and *Sesame Street* background is in many respects to be able to understand that you need to have this piece and that piece in order to start putting things together in new ways as they have never done before.

I'm happy to say that the other piece that's really important is the whole business of collaboration. And so, one of the other things that's been actively evolving is the Games for Learning Institute and an overall games initiative that's been pulling people across various sectors including many of the people in this room and some of the city's activists, to just get people engaged. The really exciting thing is that this is happening with the faculty coming together, it isn't the top down decision or something. We're enabling, we're creating opportunities for these things to happen and I think that that is one of the most important things we do is to take down barriers to create the opportunities, and let the innovation and the energy and excitement evolve.

14. Comments from The Chair

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

Richard, tell us a little about this model that a lot of people have heard about, which is School of One, which started as a summer program and now is becoming a little bit of a national movement.

15. The Digital Classroom as a Replicable Model for Multiple Learning Styles

Richard Green, Director of Content, School of One, New York City Department of Education

Sure. You know I think what rang true was when Shael (Polakow-Suransky, Deputy Chancellor, NYC-DOE) just described what it is to teach. I think that when Joel Rose founded the School of One along with Chris Rush, they had this idea to ask an adult to attempt to do that, to teach in front of 30 or 35 students as a sustainable model, isn't really a sustainable model.

And the idea behind School of One was more of a bet on time, how time is used and if it can be used more productively and more individualized for the kids that are sitting in the classroom. For those of you who have visited one of our schools, you'll be able to relate. For those of you who haven't, I'll try to describe what we do in a couple of minutes.

The basic idea is that we will use technology to complement live teacher-run instruction, which may be the most important type of instruction, but certainly not the only type of instruction a student can receive. In doing so, we'll be able to understand what every student needs to learn throughout the course of the year and make some assumptions about how that student should navigate their way through that year's curriculum, whether they're at grade level, above grade level or below grade level. At the same time in both understanding what a student needs to know, we will also use technology to schedule every student, every day for the type of learning that the student may take to the best, in the best way.

We'll also use digital learning platforms, whether those are virtual tutors who are working with students wearing headsets and microphones and whiteboard remotely, to a variety of digital companies that create educational software lessons to custom development partnerships with organizations like PBS who we are working with right now to do some custom work of thinking about what a digital lesson could look like if you brought together people with skill sets from a variety of professions. We could end up with something that maybe isn't in the marketplace right now, to helping catalyze innovation with anything from a larger organization that has been in the education business for a long time all the way down to new startups. And so it's taking all the knowledge and information and ultimately having the knowledge base to help kids work through on a daily basis lessons and skills, tracking how they do on a daily basis, which helps us inform scheduling every student for the following day.

We're currently in three middle schools (it's a middle school math program). One school in the South Bronx, one school in Brooklyn, and one school in Chinatown; about 1500 students. This is the first year we've been the 'math program of record' for these students. We've been in and out over the past year or two, but this is our first full run. We're creating the math program and the culture that you need in order to have successful math programs within the culture of a larger school.

So it's been an amazing learning experience both in

how we manage all the different types of students, the teachers, the student teachers and the resources the school provides as well as our program and what we can do to expand and accelerate the success of the kids.

16. Comments from The Chair: New Resources and Incentives

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

So, it strikes me that there's sixteen different models of really interesting innovation here. Maybe one of the things we can do as a follow up is to document some of that so that the folks who are in this community learn more about each other than time permits today.

I was really struck by something that Steve (Strauss, Managing Director of the NYCEDC) said at the outset: 7.6% of the GDP is being spent on education, as we had put on the table today by Jim Shelton. There's about 650 million dollars in new Race to the Top for early childhood, and another couple hundred million (another 150 million) for other Race to the Top monies, plus 24 million dollars from the state going out. We've also got the new i3 grants, and we were approaching maybe a billion dollars of new money that's relevant to the discussions that we're having here today, but do we need more money? (That's part of what Steve Strauss was asking). So how can we

use the new tranche of resources to reconfigure the resources that are available to us and to use them more productively?

And secondly, how can we get this community to begin working in the same direction? Is this a community? I mean, we're national and international players, but what about New York, what is it going to take?

I'm just curious to get a sort of round of comments about these new resources, these new incentives—even with all these still sort of dismal educational output numbers even in New York City, New York state—how can we move rapidly in the right direction? How will we create an accelerator of the kind that these different models are doing potentially collectively?

17. Where Are the Teacher Training Models in Technology

Charlotte Frank, Senior Vice President of Research and Development, McGraw-Hill Education

I'm just thinking about the kind of resources that are here, and the challenges that have been put forward





to us. I guess in classrooms today there are places that are different, but across the system--it's absolutely the same. Our teachers are pretty much doing the same. Where are our teachers getting the training to help them do better? Who's modeling for them what should be happening in the classroom?



We have to better to prepare our teachers, and they have to see models of something different from what they've experienced. Where's the innovation at the Higher Ed level that is preparing our teachers and preparing our supervisors? So that people will start to think about and say, "Hey, I like that. I'm going to do that when I become a teacher and when I become the principal of that school I'm going to change that whole system." Something has to model that.

18. Addressing Professional Development in Technology

David M. Steiner, Klara and Larry Silverstein Dean, School of Education, Hunter College, former Commissioner of Education, New York State

We have an enforcement of binding regulations put in place for technology companies that require certifications for the next two years. I am not saying it's at the level all of us might aspire to, but it's a start and it's never been put in place before in this country. So, it's coming as quickly as possible, but I think the schools of education will need partners to help to do professional development for many of their faculty, many of whom are well behind their students.

19. Comments

Charlotte Frank, Senior Vice President for Research and Development, McGraw-Hill Education

David, can you briefly describe what you did at Hunter College before you became Commissioner of Education for New York State?

20. Technology Training for Teachers

David M. Steiner, Klara and Larry Silverstein Dean, School of Education, Hunter College, former Commissioner for Education, New York State

At Hunter College, we have a 15 area competency already in technology, which is now required for graduation. At Hunter, we have 3,000 students at any one time studying to become teachers there. The program was actually put together by my friend and colleague who's at Apple Computers in their technology development. I think it's a start, and it goes to some fairly

sophisticated tools like an online tutorial systems with examples where one can submit examples online and it will grade you online. We have an enormous way to go throughout the state, and I have been working with Ed schools up and down the state and I know this is in its infancy.

21. Addressing Teachers and Technological Competency

Steve Strauss, Managing Director, New York City Economic Development Corporation

I am coming back to the starting point. 7.6% of the US GDP is about a trillion dollars a year and I tend to be of the view that--no, we don't need more money, it's about reallocating the existing pot. And I think we've now discussed there's about a billion dollars on the table out of a trillion so 1/1000 of the money is being reallocated, which kind of suggests that we have more work to do.

Regarding the comment, and I know nothing about teaching, though I taught a bit at the college level, but I know nothing about teaching, let me be clear about that. But, you were saying about getting teachers professional development competency, I think it was your point or someone's point earlier that a lot of our professional development in teaching doesn't seem to be correlating to the outcomes. We are in the process of doing a study of the EduTech sector for New York City as an area of economic development matter.



And I would have to say my hypothesis after talking with the entrepreneurs is that if a teacher needs a special degree in technology to work the technology it's a bad piece of technology. The whole point to the entrepreneurs is a teacher should be a teaching generalist who can turn on a machine and it should work. So again, I don't know anything about that program, I may be completely wrong, but I would offer a hypothesis--again, if we're telling teachers to get this degree, get this technical competency and you'll get your raise--it's incredibly important that we know that it's correlated to something that will improve the outcomes, otherwise the teachers won't do what they're told. If you tell them that to get a promotion in the system they need a Master's degree in X, Y and Z, then they'll go do it...and should.

22. Drivers for an Innovation Ecosystem

James H. Shelton III, Assistant Deputy Secretary for Innovation and Improvement, US Department of Education

Can we pause right there for just a minute? I'm really



excited to see that we have someone from IDEO in the room. In fact, two people from IDEO Design? Even better.

We talk about adoption use being a problem in education. A lot of that is because design has been so poor that it doesn't actually flow into ways that it operates and it's not intuitive let alone user-friendly that to use most of the tools and the resources. So when you put together this innovation ecosystem, having a very specific focus on things that are going to drive very specific outcomes for students and make life easier and more productive for teachers, it can be a kind of fundamental organizing principle about how you do the rest of your work. And since you have, together, that expertise, I would encourage you to do so.

Most of the places that have success seem to be successful at creating innovation clusters, establish clear leadership and is often at the intersection between folks who drive economic development and the folks with sector expertise. There's a clear connection between those that drive economic development and those with sector expertise that say we understand the pieces of the ecosystem that need to exist and we will be the hub for pulling everyone back together and we need to get this established quickly in order to pull it off.

23. Teacher Effectiveness

Mary Brabeck, *Gale and Ira Drukier Dean, Steinhardt School of Culture, Education, and Human Development, New York University*

Speaking as the Dean of the Ed School, I think this question, particularly about education, is fascinating. I think that the issue of teacher incorporation is critical, and one that as a country we have not taken as seriously as we need to. Steve (Strauss, Managing Director, NYCEDC) just said we have to improve and implement something that we actually know is going to improve outcomes. What we know about how teachers can improve outcomes is so little right now. I am telling you that in a very special way that the knowledge base about what is effective teaching for all kids and individual kids is very slim.

Less than one percent of what we spend on education is on education research. 20-25% of health is spent on research, while we are spending a lot of money in education compared to the health fields where if we look at the bar where health research is 25%--educational research is at 1%. We need research that ties to classrooms and translational research so that we can actually figure out what's the interface between a child learning and what the teacher does. *We need the equivalent, Mr. Assistant Deputy Secretary Shelton, of the women's health initiative on teacher effectiveness!*

24. Community and the Value of Self-Learning

Paul Horn, *Senior Vice Provost for Research, New York University*

I'd like to just offer what is one important piece of the technology solution. I'll offer it as an anecdote. Twenty-five years ago if you were in sales at IBM, you very likely worked in a branch office, and in that branch office, that was your community, your family and you self-learned in that branch office best practices, how to do your job. They would ring a bell if they sold a mainframe. Today, if you're in sales at IBM, you probably work out of your car, but you're still in a community, but that community is virtual. In those communities that's how people learn.

Technology now provides a mechanism for kids to self-learn in a way they never did before, through social networking. I believe that any component of a solution has to have a major social networking piece because I think that's how you can fundamentally transform both the classroom and the out-of-classroom experience. We need to have the teacher guide the students in self-learning and they're really comfortable today operating in that environment.

25. Comments from The Chair: Additional Models

Michael Levine, *Executive Director, Joan Ganz Cooney Center, Sesame Workshop*

There are certainly a number of models that are being worked on, some not represented here today, from the work Google is doing to John Katzman from College Board couldn't come today, but who is working on some very interesting models. Microsoft is also doing some interesting work in this area.

26. A Shared Environment for Innovation

Donald Brinkman, *Manager, Microsoft External Research, Microsoft Research Connections*

Of course I'm going to approach this from a technology angle. I really think that money is not the problem although allocation might be. For Mary, (Brabeck) teachers' education material is very important, and Paul (Horn) you have led right into it because it's connections. I think connections are one of the key pieces that are missing right now.

How many people here have eaten *Fruit Loops* before? A fairly large number. Good. I just want to make sure we have some commonality and know what they are. So, I would suggest what's happening right now is that we're serving kids dry *Fruit Loops*. And what I mean by this is that it's not that the kids don't necessarily like it, if you hand kids dry *Fruit Loops* they'll eat them, but when they're done eating it, what's



left? Nothing's left at that point. And what I would suggest is that what we're missing right now in that cereal is some milk. It's the milk that adds those connections. When you pour milk into that bowl of cereal it infuses all of those *Fruit Loops*. The *Fruit Loops* are all of those individual experiments and the individual applications and what we do is we want to create platforms that can unite all this data.



Once we've eaten all those *Fruit Loops*, once those kids have gobbled it up, you have something left--that sweet, delicious, sugary, pink milk that contains all of that important data. And of course, it motivates the kids. You know, it gets them excited about it, but we can make use of that and I guess to bring it down to the New York level, once you have those *Fruit Loops* you don't go pouring the milk into the box. You have that bowl and that bowl can be the state of New York. You put those *Fruit Loops* in that bowl, you add the milk and you bring all these things together.

Now, I'm going to mix my metaphors here just a bit. The way that I think about research in this area is to think of it as a platform. We create instruments. It's like a Stratocaster. It's like a beautiful creative instrument that's capable of doing so much, creating so much but without people that can work with it and use it, it sits inert, and doesn't do anything. And we need musicians to bring this together. Part of what we need is an overarching metaphor that can help us to understand each of our roles in this place.

So metaphorically, if we want to educate kids we need to build that theater. We need someone who builds the stage, someone who builds the instruments. We need musicians to play those instruments, we need someone to get the kids to come in the door, someone to hand out the programs, some to put them in the seats so that they can all together have a shared experience with a common structure. And so, we are able to leverage the results of that structure to improve that performance every single time. Eventually, we'll wrap this thing up, and it'll be like a Broadway show, and we'll put it on the road, and take it all over the country and eventually the world.

27. EduTech Study: From the Investors POV

Kristy Sundjaja, Senior Director, New York City Economic Development Corporation

As Steve (Strauss, Managing Director, NYCEDC)

mentioned, in the past year or so we've actually been conducting an EduTech study looking at it from an economic development perspective. We agree that we probably need more research dollars, and a little bit more research activity, but we've actually seen a lot of innovation in this space, not just in the big company side. Yes, the publisher and the big tech companies are doing a lot of work, but a lot of activities are actually happening in the start up space, too. So, from the EDC's perspective, we're a big believer of supporting entrepreneur's activities. The Big Apps competition that we released is really putting the data into the hands of the entrepreneurs and saying go play with it, and create and come back with some creative applications!

What we've heard from this data is that the biggest issue that they face in driving innovation in EduTech is that they *can't* drive it. They can do some small testing, pilot testing, in a school or two or three and that's where things stop. They can't scale it, they can't sell it into the school system. So I think Steve (Strauss) mentioned that New York is a great testing bed. We always say, "Well, there's so many kids eating *Fruit Loops*, but the *Fruit Loops* producers can't even sell them i.e. the black *Fruit Loops* or the white *Fruit Loops* that they just innovated". So, I think this is a big issue.

Tying it back to the funding side, if I'm an investor and I realize that, well, I have people inventing black or white *Fruit Loops*, but they can't sell it, I'm not going to fund it. So when we talked to the VCs they basically say we're not going to fund start-ups that are selling into the K-12, we want

to fund start-ups that are going around and selling to the parents instead of the K-12s. I just want to raise that to make us aware of what other issues we're trying to address here.

28. Two Strategies: Disintermediation vs. Innovation Cluster

James H. Shelton III, Assistant Deputy Secretary of Improvement and Innovation, US Department of Education

There are two strategies that play out. One is the disintermediation strategy, which is what's happening in the start-up community. The folks that I've gotten in the room are basically not interested in selling to schools. They can't get there from here. The other is when you create an innovation cluster, we have the players in the room who can actually make decisions about procurement and create almost advanced market commitments around certain specifications that create a market opportunity and will draw investment. So you can flip that equation on its head.





29. Comments from The Chair

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

Jim, do you want to say something about this idea—the advance market—and how it connects to what you are doing?

30. The Challenge of Advance Market Sales

James H. Shelton III, Assistant Deputy Secretary of Innovation and Improvement, US Department of Education

Basically the idea was a model from the global health sector where in fact you couldn't get companies to invest in vaccines for the poor because it's not a market, right? So, what happened is first philanthropy then large governments made what is called an advanced market commitment. They pledge to buy a certain amount if you hit certain specifications. The specifications were about efficacy and about cost per unit so it will be sustainable over time.

Having the promise of a billion and a half dollar market out of the gate gave people the incentive to go ahead and invest in the R&D. So what is happening is actually that you are getting a multiplier factor from the investment in R&D because lots of the players think they are going to be able to cap the opportunity. Everyone knows that with that first locked in opportunity, you've got a basic payback. But if you hit the actual specifications, you have a long-term high growth opportunity in a product that will sell around the world.

So, in creating the opportunities to aggregate that demand, whether you do it as a full commitment or to say you don't have to shop around, you can make a large 100 million dollar sale right here, is important.

31. Comments from The Chair

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

Have you given some thought to what form that would take?

32. Migrating Best Practices Across States

James H. Shelton III, Assistant Deputy Secretary for Innovation and Improvement, US Department of Education

We're trying to actually create that space and opportunity. It's really easy within states to figure that out. It's much harder to figure that out across states. However, we believe that we are very, very close because states have flexibility that most states don't take advantage of: to use competitively big contracts from other states.

33. Comments from The Chair

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

That deserves a larger conversation.

34. Teachers as Entrepreneurs

Fred Dust, Partner, IDEO

I do love the *Fruit Loops* metaphor, just because I love sugary cereals, so I am super happy about that. But, I actually do think the idea of how we connect across all these different sectors is really critical here. One thing I would call out is, I wonder what part of the consumer cycle we should be focusing on? There's one thing we should be looking at, and that is actually whether we should be looking at students. And then there's a whole other thing where we are saying let's look at teachers and actually how we're kind of driving towards teachers as being entrepreneurs.

Basically, I think great teachers are actually entrepreneurial in spirit. They do stuff that are kind of like rogue things in the classroom that are actually quite profound. I think we need them to think about how they might be using technology in new ways, for them to be fabricating and thinking about the next generation apps and spreading that might be a really great way to for us to think about this kind of guerilla-style, and begin filling things up in that way.

So, I would be really curious about how to explore that a little bit, in this room or afterwards, around how we get teachers to be doing that kind of stuff, especially recognizing that next generation of teachers who are incredibly sophisticated around the technologies that they bring to the table, and the things they can do with the technology. So, I think there is a lot to be used there.

35. The Common Yardstick: Shared Metrics Across all Sectors of a Community, The STRIVE Program, Cincinnati, Ohio

Mary J. Cullinane, Director, Innovation and Business Development, US, Microsoft Education

One of the models I would suggest because people are used to operating at the *micro* level, one of the levels I would suggest at the *macro* level is out of Cincinnati, The STRIVE Program. I am not sure if you folks are familiar with that. I really think that what STRIVE is for those who are not familiar is it's saying: "How do we as a community have shared metrics across all agencies?" And, "What would that require and what does that change in practice?"

And so, you see in Cincinnati, you see folks saying: "As a community we want literacy to happen by the

3rd grade.” Well, then they actually look at something like the library program, and the library program is running all of their reading programs for 4th graders. So, on something that simple they shift from a macro level in an organization. When we look at accountability, and then we look at metrics about how that requires a shared database that requires shared resources, requires the ability to share information amongst agencies, (which we all know is a little bit of a challenge).

But getting a common yardstick is, I think, one of the most important things we can do to put innovation into perspective with in respect to the community.

36. Scaling Grass Roots Innovation

Donald Brinkman, Manager, Microsoft External Research, Microsoft Research Connections

I think we both have one side of the equation. We need to enable grass roots innovation, but for that to really succeed and prosper, it has to be built on a standardized substrate. To be able to link up those cards, from 3rd grade reading to 4th grade, so that there's standard practices.

I was talking the other day to some people about standard practices, ID protocols in hospitals. It's key, because doctors and nurses think that they can adapt to the individual and that can create an optimal situation. What we found is that consistency is the key thing. Creating some sort of standard practice, but then enabling the individual educators to use small, minor optimizations and then propagate those throughout the entire system.

37. Family Engagement

Charlotte Frank, Senior Vice President for Research and Development, McGraw-Hill Education

I guess I ought to talk about the glue, and the glue of family engagement. And that's a key piece. Some of the money has not been available. That kind of funding has been cut out. But I don't want to get into that. I already said it. The big thing I remember many, many years ago as head of curriculum instruction for NYC is that we piloted a program in the South Bronx, promoted by PAL, the Police Athletic League, and it was going to introduce computers. Very quickly, there were 60 kids in this middle school 'A' and 60 kids in this middle school 'B'. These 60 kids in 'A' had to have a parent come in and also learn about the computers. Well, the thing that happened is that these 60 kids in 'A' also had a computer given to them at home.

NYC data shows at the end of six weeks that these 60 kids in 'A' with parental involvement learned more than these 60 kids regarding content in school 'B'. (It

was all tied to mathematics). The big thing was that we got the family involved. And that the computers that went home helped train those parents; gave them skills that they never had before.

So without family engagement we're not going to move this thing, especially in these communities. That is key to the glue, or the milk, for the black and white *Fruit Loops*.



38. Comments from The Chair

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

The Joan Ganz Cooney Center released about a week ago something called, *Families Matter: Designing Media for the Digital Age* (<http://www.joanganzcooneycenter.org/Reports-29.html>). I recommend it to all of you as a look into the hearts and minds of digital eight-year olds.

39. Hands On Maker Programs, Experimenting with After School Programs

Drew Davidson, Director, Entertainment Technology Center, Carnegie Mellon University

One of the things that came to mind when I heard Jim's comments (James H. Shelton, USDOE) that was disheartening for me was about schools where 50% of the kids are going to drop out or not get through. We struggle with innovation in after school programs where we get to do most of our work. And we try to transfer our ideas to different schools. It's so hard to say that we're going to try something new... maybe it won't work in a school system...but if we know so much of what we are trying to do is failing, it's frustrating to hear.

We're working really hard in the community in Pittsburgh. I've seen some of the work that is going into the foundations' after school programs--inviting school systems into the process so that there's much more ability to experiment in after school programs. You're starting to see a lot of sophisticated stuff that I hope will trickle up into the school system in some way, shape or form. And it feels really sophisticated now with how MacArthur is trying to line up what they're doing with some of the administration's policies.

To tie onto that and get into the family thing, something that gets lost a lot when we talk about digital innovation is the whole idea of the Maker Movement, the Maker Fair thing. We're running a Make Shop with the Children's Museum in Pittsburgh. What's awesome, and really pulls in the family, is when par-



ents show up to museums assuming they're co-owners with their kids. You get this great little non-threatening environment where the kids can show the parents the digital stuff that they know down pat. But the parents, especially Pittsburgh with its background, a lot of the parents can do a lot of the hands on stuff there with their kids in an activity. We see this great blended learning environment happening. Anything you can do to keep the physical and the digital together to inspire kids and particularly in STEM is great. Even if you think about art, and how they can express themselves in STEAME, that ties into design for me...how you design a project... how you create something.

40. Comments from The Chair

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

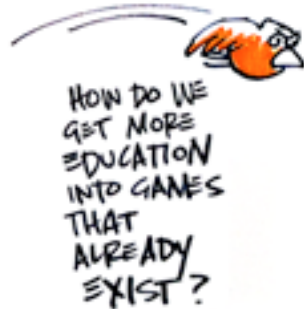
You are talking not only about STEM learning (Science, Technology, Education and Math), but STEAME education (Science, Technology, Engineering, Art, Math and Environmental Science).

41. Thinking 'Differently' about Leveraging Existing Platforms

Peter Tripp, CTO, Chief Technology Officer, Robin Hood Foundation

I'm not an education person in this field per se. My background is around strategy and technology and probably most importantly thinking 'different'. It's great to hear all this conversation on what I call inside out. So, we have the teachers looking outside the classroom, and how outside partners can help with curriculum. I started to hear it from Microsoft and other players outside in. How do we bring the platform into the students and into the school?

One of my questions is: "What does the model look like from a business execution point of view?" In my former life I did a lot of strategy work throughout the world, notably in Australia. They looked at the No Child Left Behind scenario, and a lot of kids left school around 14 or 15 to go to work on the farm. And, of course the school officials wanted to prevent that from happening, but at some point they recognized that it's going to hap-



pen. So, they changed the curriculum and the style and said, "Hey at age 20 or 21 you can come back to school and get involved in it." So, that's one model of thinking differently.

The question I have for this group is on two levels:

1. How should we be 'thinking differently' with platforms that are already out there, that are already very successful, particularly around games?
2. How we can leverage revenue or fuel to keep it going? So with games that are already out in marketplace today or mobile platforms that already exist, how do we immerse into that and help them become mainstream, as opposed to say, "hey, this is a great math game let's go sell it." Or, as opposed to "here's a great game the kids are already using, and how do we get more education into that game?"

42. Comments from The Chair: Games For Learning Publishing Council

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

There is a new effort that's being coordinated by a small new games company called Eli Media called the Games For Learning Publishing Council which Pam Abrams, my colleague, is overseeing for the Cooney Center which is going to answer some of the different questions about what does it mean to address the questions you raise. What is the new way of deploying games that are created informally for formal education?

43. Models for Innovation: Data Collection as Innovation

Jan Plass, Co-director, Games for Learning Institute, New York University

This ties into some of the previous metaphors that were used, but that I don't want to repeat, aka *Fruit Loops*, but I do want to add another ingredient.

What I do as part of Games For Learning Institute is primarily on the empirical research side of things, and what is virtually the full-time job of my collaborators is to coordinate that research and make sure we are able to collect the kind of data that we want to collect. And then we end up with studies of 60-100, if we're lucky, 200 participants. My colleague, Bruce Homer, recently when we gave a talk at Google, mentioned that 700 is a large data set. I realized at that very moment we're actually making one fundamental mistake in education research which is in that we don't really tap into the opportunities to collect really large data sets the way we could if we instrumented our materials and we let them be used in an anonymous way, get data back that we can then data mine in way that is



done in the industry. I know Carnegie Mellon is doing work on that. Others are doing work on that. But that's not typical to the education market.

So, when we think of large scale research we need to rethink the idea of, "I need to have 15 million dollars so I can be in a lot of school districts," to "How can I actually leverage what technology has to offer in terms of data collection, by limiting the kind of private information that I can collect in demographics on the learner, so I know less about the learner, but I know much more about what they did and where they were contextual and where they weren't."

To apply some of those models in our research--this is something we've been striving to do--where we've been trying to work with both those who have the regulations in place that make that possible from a policy and law level. And also, from an industry level to open up the applications and collect that data in a safe, secure way on a server that is kind of clearly not a corporate server, so nobody has any concerns about that. But also to think about that and find a solution that we could all tap into would allow us to make a huge leap forward into the kind of answers that we can provide right now that are currently so frustrating to find and so time consuming.

44. Comments from The Chair: Making Technologies for Data Collection Available to Teachers

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

Also, there's a lot to be said about data collection and analytics that could be very easily facilitated by technologies that education researchers are not using.

45. Catalytic Investments to Accelerate Development

James H. Shelton III, Assistant Deputy Secretary for Innovation and Improvement, US Department of Education

I wanted to pick up on Jan's point. It's pretty clear in looking at these opportunities, that there are some catalytic investments, if you will, that can accelerate the development of these clusters. One is the data infrastructure, which Jan talked about which actually dramatically increases the opportunity and ability to learn quickly from the work that is going on.

Two, another is the entry point to aggregate what's at hand, so it's much, much easier for entrepreneurs, whether they be social or capitalistic folks, to access opportunities and figure out actually how to put their products into use and have the opportunity to have broad scale adoption quickly.

The third thing is investment capital, specifically for

the purpose of bridging the 'Valley of Death' for folks that are in their early stages of development, so they can get to a place to where they can attract full market rate capital.

Fourth, the other part of it is investment capital that will go into organizations that frankly are creating utilities for the rest of the sector, which are not going to pay off in the short term.

So, the kind of instrumentation that Jan talked about, somebody has to invest in doing that kind of work. You might be able to count on some of the larger corporations to do some of that kind of work, invested in a particular sector, but odds are if you want your local ecosystem to develop, you need someone working with the folks to say, "What kind of things can we create for all of you that will accelerate your work?"

46. Aiding Teachers with Professional Development in Technology

Tobi Saulnier, CEO, 1st Playable Productions

So an element that sort of intersects with this, but in the other direction, is when we have the games in an education symposium. We have 200 hundred teachers come to learn about games and technology with workshops. But what else can we do to empower them to take that back to their classroom? A lot of them sound very frustrated about their sector, so how do we take all this stuff that we're excited about to get them to say: "I want to go try this!" Even a commercial off the shelf game, "I want to apply it to my classroom!"

What can we do to help the grass roots, teacher-led empowerment of teachers to just go ahead and innovate and jump on things? Because I think without that we're not going to have that change. OK, so here I am, a private company. I'm trying to support educators in their professional development. So, what's the next thing that we can all be doing?

47. The Promise of Teachers Sharing Materials and Strategies

Mary Brabeck, Gale and Ira Drukier Dean, Steinhart School of Culture, Education, and Human Development, New York University

Someone else mentioned earlier and I think it's critical. Teaching is a really lonely job and teachers don't have a way of connecting with each other to use what they learned.

48. Comments

Tobi Saulnier, CEO, 1st Playable Productions

They can share lesson plans. They can share specific strategies.

49. Best Practices vs. Innovation

Steve Strauss, *Managing Director, New York City Economic Development Corporation*

I'm going to offer a slightly idiosyncratic comment considering I spent a lot of my time fostering innovation in New York. I sit on the investment committee for an angel fund. I helped the city create another angel fund. And I just want to offer a small caveat: maybe innovation isn't such a good thing.

In a prior life, I was a kids' consultant looking into healthcare and hospitals. By and large you don't want a creative doctor. You actually want a doctor who knows what the practices are. And I agree very much with the point that we need to know better what those practices are and really apply those best practices in the classroom. If you've got cancer, there's protocol for cancer. You actually want the doctor to follow that protocol.

I'll offer a hypothesis that with teaching, we need to understand what makes a great teacher. And then it's about getting people to that goal. A lot of teachers individually innovating what they think is best. Well, some of them will be brilliant teachers, and I do think there's something about energy in the classroom. Actually, Jim (Shelton, USDOE) when you came in you said "Hi!", and can everyone say "Hello!" back. Come, be enthusiastic! That's not an innovation, that's a good best practice protocol. If you start a classroom meeting, we want you to engage me. And I do think we need to be careful about encouraging everyone to innovate individually. Or, I may just be a cynic.

50. Comments from The Chair

Michael Levine, *Executive Director, Joan Ganz Cooney Center, Sesame Workshop*

This is actually getting us on track towards a summary. I know that Lili wants to say a few words and now Tory.

51. Balancing Demands on Teachers to Innovate with Their Existing Workloads

Victoria Van Voorhis, *CEO, Second Avenue Software*

Just quickly, not in my role as somebody who creates innovative digital software, but as a former teacher I want to caution this group. How many of you have actually stood in a classroom and taught a group of 35 kids? Okay, a few. You have six preps and 35 kids and even more parents who are not involved. I have taught in rural and urban districts. And I think asking teachers to be the 'engines of innovation' is a tall order. It's difficult even if you have that spark, that creativity. The structure of the school day, the structure of the institution squelches that innovation.

When I heard all the talk about the great, inspiring things that are happening at Hunter College in education, I thought about all the young teachers I work with all the time coming out of these most innovative programs. But as soon as they get into a district school their innovative practices are squashed and they are not well received by the institutions we're putting them into. So, we have to think about what demands we are putting on teachers, and have to change the culture in the districts themselves to embrace innovation and change and not to reject it.

IV. IN SUMMARY

52. Comments From the Chair, Overview

Michael Levine, *Executive Director, Joan Ganz Cooney Center, Sesame Workshop*

We have a few minutes so I'd like Jim and actually David to close this with some advice. But not just advice, because we've got a really interesting group doing all sorts of different things, some of us are getting to know each other for the very first time. There's also a lot of passionate energy and capacity. I'm not saying that everyone has to come together as the same brand bargain unit. But it would be really helpful if you could both give us your perspective, as well. What should this group do, if anything, to combine forces in response to some of the resources that are actually on the table?

The idea behind this convening was to think about some of the elements, connection points starting today and moving forward. So, think about all the second applications that the client has and the US Department of Ed has on the street, or for new companies on the street. What can we do to actually advance the quality of education for kids today?

53. Our Mutual Mission

Lili Cheng, *General Manager, FUSE Labs, Microsoft Research*

With regard to your challenge, what are we going to make by the end of the year that really has an impact? How can we actually work together towards something?

Two things that I find really inspiring in elementary schools is how chess and robotics have taken off. I mean, it's sort of this nationwide competition almost that involves after-school programs, parents and schools. And just along those lines, is there some sort of rally or contest or mission that we could be focusing on, that we can work on together?



54. Comments from The Chair

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

To move the needle somehow because that is what we're all about. David, are you ready to say something? I'll let Jim close us out here.

55. Reality Parameters for Teachers in NY State

David M. Steiner, Klara and Larry Silverstein Dean, School of Education, Hunter College, former Commissioner of Education for New York State

Reality on the ground, I love it!

We've just put in place a statewide accountability system that as far as teachers are concerned, will eventually be for every public school teacher in the state. That's on their radar screen. We have national core standards, that's on their radar screen. Every test in New York State within 20 months we'll incorporate Math and English with core standards. That's a reality. We will have statewide data systems down to the individual student level in classrooms, schools, districts and the state.

As you think about your work, please keep in mind the reality parameters I just laid out, because those are the realities for teachers. They are avalanched with 100 things a day on their emails. Individual companies offering them new tools. 95% of them go back to good textbooks from McGraw-Hill and others because they are there, they're useable and they make sense in real time.

I would challenge us to think about the scale and how your work can match the reality of evaluation, data, standards and curriculum. Then help us from the schools of education right through to the PD (professional development) that's happening for teachers.

How do we take anything that you're doing and make it real for that continuum from pre-induction to induction to development. Let's not miss each other and have you end up 'boutique-ing' the system for a few teachers. Let's be real about the scale. It's uncomfortable, it's messy, but that's the situation.

56. Comments from The Chair

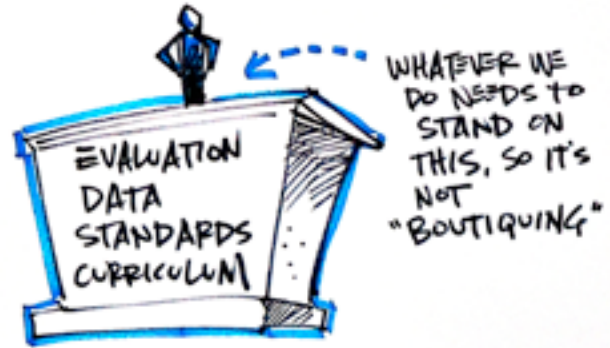
Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

Lovely. Jim? Something similar? What do you see coming around the corner here that we all need to respond to?

57. The Importance of Creating an Ecosystem

James H. Shelton III, Assistant Deputy Secretary for Innovation and Improvement, US Department of Education

This is a great first conversation. I don't know if it feels like it to everybody because there are so many pieces moving, but the reality is that what we touched on are many of the things that it's going to take in order to pull this thing together. If I am going to give



advice, the advice I would give out of this conversation, is that what is clear is that there are a number of different ideas people have about what are the kinds of innovations you can afford. And in fact, don't get bogged down in that conversation first.

What is most important is to think about that ecosystem: organized research and development, the process for commercialization, and support systems for entrepreneurs. Ways to address the demand and deployment problems. Ways to support effective adoption and use to make it easy for people to figure out what they are going to take on, when and why and whether it's going to work.

And creating the regulatory flexibility and funding models to support it, and that context (especially in a place with the scale of NY) when you take into consideration that it's not all going to take place or happen within the school day. A lot of it is going to happen outside of the school day. Many things can happen at the higher level, then start to transition back down. You'll have the framework by which you can try things, measure them, kill them quickly if they fail, try new things and engage a broad community in the work and have the instrumentation to leverage it. But if you get caught up in chasing ideas first, you'll miss the opportunity to create the infrastructure that actually builds a long-term learning system.



And, I would say use that as an organizing principle to kick things off. And then I'd be happy to talk about what I think that looks like if folks want to engage. Pick some things that you really want to go



and build on your local competence. So, you know you've got strong local competence around early learning, and we know we still have the problem that 75% of the kids never touch a formal learning center before kindergarten. What is it that we can do in that space? Even with our most aggressive human capital systems we're going to get rid of our lowest performing teachers. We still have the vast middle. So, what can be done around core design and around this opportunity to really enable the vast middle to get a standard deviation or two better. Those are very tangible real ideas that you can get a large community to mobilize against, and if you can, support the infrastructure so it will actually help somewhere.

58. Comments from The Chair

Michael Levine, Executive Director, Joan Ganz Cooney Center, Sesame Workshop

Perfect strategy. Great leadership. I am going to turn it over to Jan.

59. Closing Remarks

Jan Plass, Co-Director, Games for Learning Institute, New York University

Thank you everybody for your time and for such a nice conversation, for sharing your ideas, your life stories, and of course your enthusiasm. I was really encouraged by what I heard today, because it seems on the federal government level, the state level and the city level, on the NYU level of investing into these kinds of initiatives, as well as on the corporate level (both large corporations and smaller corporations) that are represented in a variety of ways. There's an interest, there's motivation, there's enthusiasm. And I think that there's a feeling of shared responsibilities that brought us all together today to say, "yes, this is significant; this is a significant issue we can't ignore any longer, and yes, we are willing to participate in whatever capacity we can to make this happen."

So, we thank you on behalf of The Institute, the Joan Ganz Cooney Center and NYU. We will follow up individually and hopefully in a similar event sometime in the future. And we'll be working with Assistant Deputy Secretary Shelton to move this forward. Thank you again for coming and enjoy the rest of the Games for Change Festival and the Games for Learning Day at the Games for Change Conference.



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V. CONCLUSION

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<http://www.drewdernavich.com/portfolio/section/gf>.

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Notes