



NCTI 2010 Technology Innovators Conference

Monday Keynote Address

- **Milton Chen**, Senior Fellow and Executive Director Emeritus, [The George Lucas Educational Foundation](#)
- **John Kemp**, Principal, [Powers Pyle Sutter & Verville, PC](#) (Discussant)

Monday, November 15, 2010

Summary: Technology is the key to opening opportunities for children and yet this must be paired with teacher preparation and the involvement of parents to ensure the greatest learning occurs.

Discussion

John Kemp

- I look around and I see tremendous innovators, superstars, and I feel very humbled to be among all of you in this room. I had the privilege of talking with Milton, Tracy, and Heidi earlier, and I was encouraged by Milton to visit Edutopia. I did so and searched for “disabled students”—up popped several articles and blogs and, in the midst of those results, I found an article by George Lucas written nine years ago. He wrote that when people with disabilities connect with technology, barriers are broken and lives are transformed. In the *Learn and Live* documentary, the impact of technology does not end with these students, it begins there. As technology tools help students connect with others, they enrich the lives of students, teachers, and others around them. I grew up in a regular school environment—I was unusual in the 1950s as the only disabled kid in my class. My father insisted that I go to school with all other kids—his selling point was, it was not just about helping me be a good student, it was about other students understanding that I had a role to play in that school and community. What does this all mean?
- We want full and equal social and cultural participation. Real-time participation is important! What do kids do when they get out of school? They text each other. Can we do that? I can barely use a SmartPhone. I want to function and with tools that function for me in a way that is reliable and durable. I’m about one inch from falling off the cliff of innovation. In my case, I can’t use those touch phones, my clamps cannot be used, I need a stylus. It is not about me, but as a practicing lawyer across the street, it is tough to be out of touch with what is going on. What do we expect? Full and real participation and to set the pace with which we communicate and maintain that communication. We don’t want to slow down technology. This is an exciting time, we do not want stop the flow of innovation. This is a powerful time for all of us...and no one sets the agenda better than Milton Chen.



Milton Chen

- Today is November 15, 2010—welcome to the first year of the 21st century in education. I think educational historians around the middle of the current century—when they look back to this first decade—they will say that 2010 is when the world of education in the U.S. started to really understand and move toward 21st century learning. They might also refer to our first decade for the rest of the world as the “lost decade” in education—we spent time and money on policies that do not move people toward learning. Even Senator Miller, one of the leading supporters of NCLB no longer supports it because it was not fully funded. Here we are in 2010 and it will be an exciting decade for learning, as I go around talking with educators, policymakers, and other groups around the country that say “Yes, now it is time to do those things we talked about.” Even in this economy and recession, we will find ways to move beyond the textbooks, and move toward technology, e-textbooks, and accessibility for students. Welcome to first year of other 21st century. That is our sense at Edutopia.
- Very interesting to see younger people interested in history of technology and where it came from. Kids are going back to older technology because they like the idea of using a device that does only one thing. Now we have devices that do many things at a fraction of the cost. My goal is that we will become an education nation, but we really need to invest in education as our highest priority. When educational historians look back on this time, they will say that a number of nations understood importance of education and the U.S. will be talked about in all the international comparisons. Others woke up earlier than we did—we talk in the U.S. about education as a cost, e.g., how much it costs for devices for students. In the rest of the world, they look at education as investment in future, an investment they cannot afford not to make. Our issues, such as national security and jobs, rely on education. How long until we make this connection? A nation is only as good as its schools. Other nations understand that, and we need to understand it in a much more comprehensive way. In October of this year, Edutopia.org reached 500,000 unique visits, an all-time high. We were very excited 12 years ago when we got 50,000 hits and now that has multiplied tenfold and will only grow. Technology is the way to become an education nation. It allows us to think in new ways to help children.
- One fact is that 50 percent of first-grade students are behind in reading with 44 percent still behind by the fourth grade. Can we make sure all American students get to a fourth-grade reading level? And we mean **all**. In the last 30-40 years, we have had a flat performance. If not at fourth grade then we will not reach eighth-grade reading levels. We are not good at reading starting in the first grade.
- One of the things we are sensing around the country—we are moving from “nice to know” to a “must do.” We used to say, it’s nice to know what others are doing, nice for them. In Chula Vista, CA, students were sending bugs to San Diego University to look at the bugs under an electron microscope online

(bugscope.org). The Internet provided the solution and now we can all do it, which makes it a must do (no longer a nice to know).

- Not all of the new video on YouTube is educational, but some of it is. Edutopia has a YouTube channel—what’s now available if you type “assistive technology”—you can find it online. I attended this conference in 2007 and it is amazing what has happened in the last three years. Interesting that now students are making their own videos about how they use AT to learn in their own environments, both in the U.S. and other countries. These amazing videos were made by students to tell their own stories.
- I recommend that you look at TED for a 15-minute video by Clay Shirky, [“How social media can make history.”](#) It is amazing to be alive in this period; we are now witnessing and living the period of the greatest expansion of human creative capability ever in the history of humankind. Isn’t that amazing? As Shirky says, holding up his SmartPhone, “every medium we have ever known in the history of learning is available in this item I’m holding, right next to every other medium, right in students’ pockets.”
- What is the key to this? What’s our agenda? We have a core agenda of topics of project-based learning, technology, social and emotional learning—we want to see learning environments and educators understanding the importance of education for the mind and the heart. In this new innovation age, we work together and collaborate in teams. But if you want to drill down to something short, I say it is these words:

“School life should become more like real life.”

If we could make what happens in schools more authentic, so we learn how it applies to life outside of school and bring what students know from outside of classroom into the classroom, then we would be there.

- Several of the six leading edges of education include:
 1. **Thinking** – changing our thinking is the most important and most difficult to do because for so long we divided education into “either/or” camps. We fought “math wars,” etc. We need hybrid thinking in education to bring together either/or into both/and. We can settle the debates now. We now know that phonics **and** whole language are both important, and that arts can be integrated into the core curriculum (look at our film *Opening Minds through the Arts* which combine opera singing with reading). Reading and literacy are not just about staring at a page, but active learning. Some information is sung and drawn, this is how we used to communicate before the printing press—the ways in which we communicated had to do with dance, music, and painting. Now in the 21st century we can bring back that kind of learning through different modes and methods of education that students can use.

2. **Curriculum & Assessment** – A good example of globalizing the curriculum is Walter Payton College Prep school in Chicago. The school offers a good example of hybrid thinking—not either a system or a language school, we are both. Walter Payton has globalized education. The Confucius Institute in public schools has the largest teaching of Chinese in the country. When I talk about these ideas, people say it’s hard to do, e.g., Chinese is a difficult language, only the best students can take physics...but an Illinois academy teaches physics for young students. I believe the future of this kind of thinking is to make courses accessible and use technology to reveal them to students. Now even high-school students can learn Chinese, and we can make Chinese and Asian languages much more accessible and enjoyable to learn. Seattle and San Antonio and Mexico City offer examples of schools using innovation. We don’t need to erect that fence, we have created a psychological barrier between ourselves and Mexico—we need to increase our educational exchange and understanding of this great nation. Only four hours from California by plane we can be in ancient civilizations.
3. **Technology** – We need to use “weapons of mass instruction.” We now have the ability to do this. As people who care about education, we can talk about providing weapons of mass instruction to every student. Maine is the only state where every student in middle school has a laptop computer. We thought Maine was the first, and that others would soon join....eight years later it is still the only state where this is true. Some districts have moved to 1:1 laptops for students. Maine had the political will eight years ago, while those years passed with others talking about whether it is affordable or too costly. Now technology is better, faster and Maine can provide it with professional development to teachers for \$250 per student per year. We can do that at much lower cost for many other states, and over the next few years you will see more programs like this. We need political will, we need leaders and school board members who know this, and are willing to make this change. In Maine there was lots of criticism and newspapers criticized Governor King....people were worried about jobs and giving money to middle school kids for computers. He said: “I want to move Maine to where it should be in the future. I knew I was finally getting traction when people started waving at me on street with more than one finger.” We need more governors to stand up and say we can do this at a lower cost than before. Another example includes “iRead” – a new way to get kids to a fourth-grade reading level. Voice memos give students the capability to record messages so students can record their own reading and listen to themselves reading. Teachers and parents can listen to reading performance. Kids can listen to peers reading. It’s the “missing mirror” in language learning—technology is meant to do this. Test scores increased.
4. **Time/place**
5. **Co-teaching**

6. **Youth**— The hope and vision of Edutopia and George Lucas is to look at a classroom or team of students and not be able to tell which students have disabilities. Thank you for not waiting to do the work you are doing; students don't have to wait for the devices that allow them to show their abilities and intelligences.

Discussion and Q&A

Question (John Kemp, Discussant): Thank you, Milton, for your outstanding remarks. I want to ask the first question by pointing out serious gaming from one of Milton's slides. As we look at serious gaming, an industry unto itself, what is the accessibility of serious gaming? So much of 3D online development is a challenge for students with visual disabilities or challenges in viewing cognitive space.

- **Milton** – I believe the serious gaming industry is exciting and shows us how to engage. But we have a long way to go before ideas in this room can permeate industries like gaming. The challenge to all of us is to help them understand how to make games accessible for all. Perhaps next year at the next NCTI conference we will make sure we have games developers here exposed to AT devices so they will think about how to make these games accessible.

Question (John Kemp, Discussant): How do you motivate kids to learn?

- **Milton** – Give learners more choice. When I talked about the first edge of thinking, this is what educators are moving toward—the idea of giving more students more responsibility and choice over what they learn and how they learn it. We decide what standards are and curriculum and they have to get in line and study that. Students are very motivated to learn using these media and technology outside of the classroom. You are right, John, we have to tell digital media about the importance of AT and devices for all. Give students more choice, e.g., in STEM, don't just proscribe what needs to be learned, but say, here is a project to study how earth science principles are activated *within your own community*. This is very motivating.

Question (Kathy Botsford, University of Northern Colorado): It's not that kids aren't game, but there is a digital divide between them and so many working professionals. Are there strategies to bring professionals up to speed (kids are not the problem)—how do we get teachers trained?

- **Milton Chen**: There are issues around teacher development, parallel and similar to motivating students. The best way to get teachers to see the value in technology is to start with something that they find motivating and personally of interest—maybe something within the curriculum, or something outside of work. I learned this at Rhode Island at a first teacher laptop program more than 10 years ago. I walked into a classroom on Saturday morning for teachers with gray hair and with laptops open. They were so excited to learn about what is possible on the Internet. I learned as I looked at their screens—they were putting recipes into a database. First I thought, what does that have to do with curriculum and

instruction? Just wait, watch what happens, when they learn to use technology to do something they are personally passionate about, then they will learn the technology and see ways to use that technology for students and in teaching. So give teachers choice, provide personalized learning for teachers as well as students.

John Kemp – any thoughts from Larry Wexler or Melody Musgrove?

- **Larry** – we have a fairly significant investment, \$90mil per year in professional development and \$48mil per year in state personnel development grant programs. Ninety percent goes to teacher preparation. We strongly encourage technology to be incorporated into those programs. We run a Project Forum that brings people together from across the country on a particular issue. One thing we did about two years ago, we discussed the technology issue and UDL and what we agreed to as a result of that forum was to integrate. It was not a requirement, but we refer to it as a “required suggestion” that UDL is integrated into all grant priorities, to stress the UDL approach in teacher preparation and any work we do around professional development.

Question (Steve Jacobs, IDEAL Group): Larry and Melody, there is opportunity today like never before due to open source technology and local devices. Research to practice to economies of scale. The problem our company has is, how do you get the word out? We don’t make a profit, we don’t depend on grants, we have 944K users of mobile devices in 45 countries and development costs per user is 11 cents. Applications can compare in many instances to commercial AT but the costs there are much higher. We don’t know what to do to get the word out—many in this room have the same issue. We need to get together and organize and make something happen. Technology is there and in use today. What suggestions do you have to move forward?

- **Larry Wexler:** I think the whole purpose of this conference is to do exactly that. One of the primary reasons we support this project is to bring people together to share. We have a number of technology grants like the Diagram Project around digital images; we have a priority—we are about to compete on integrating video description into applications and handheld devices, and we require open source in those developments. It goes back to the Dibbles progress-monitoring tool used throughout schools—you can download it for free now. School districts will buy packages now through companies, but it is open source and we will continue to support open source.

Comment and Question (Anne-Rivers Forcke, IBM): I have a question and a comment. The comment is: IBM looks to partner aggressively with all innovators, so if you have a “thing” even if it is a new way of thinking about something, please see me. I’m from marketing, I’m not a technologist, but make yourself known—we are dedicated to advancing technology in innovation. As a mother, I would like to know from Milton, we’ve seen you talk about engaging elements of neighborhoods, bringing real life into school life. How do you engage parents with teachers and students—any thoughts?

- **Milton Chen:** Absolutely. Technology can be an aid to bringing parents into process. As one principal said, parents are co-educators for students. Co-teaching, teaching teams, are partners of teachers but also parents and community experts on ways this is being done. We are excited about new communication platforms that have just moved to scale, so that parents can have information about what's going on in classroom. The days of sending home notes, those are over...that Pony Express didn't work well, notes never made it home. But these days, technology can leave voice messages for parents. The three-legged stool includes teachers, parents, and students working together. Students may question if it is good, because now their parents know what the homework is. We are excited about new communication platforms to involve parents more, using voice, text, and images. We are getting there.
- **John Kemp:** I am pleased that you talked about emotional intelligence. We have been talking about this relatively recently. We still rely so much on IQ, but now we are going more to how well we manage relationships, how we get along, interact with each other, etc. In socialization for students with disabilities, technology is a big tool for helping them to socialize.
- **Milton Chen:** The core topic is the way in which technology can encourage or discourage the socializing of students with disability. Technology can help students to acquire some skills. Those are skills that can be taught to every kid. Socio-emotional learning (SEL) is not a matter of temperament or what kids are born with, it can be taught. We have a lot of content on our site that shows curricula for doing so. CASEL, based in Chicago, is developing the research base for SEL. Closely tied to academic achievement—academic learning only happens with students who have socio-emotional ability. We can't add another idea to the curriculum to plate—Weisman says, this isn't something to add to the plate, rather, it *is* the plate. It is the container or platform to make kids more ready to learn.

Question: Can you reflect on the impact of NCLB for students with disabilities?

- **Larry Wexler:** I disagree with Milton's comments about NCLB—whether you look at NCLB as over-testing, or setting unrealistic goals for children, or an issue of focusing on the wrong things—I am from OSEP and there has been no greater law that positively affected kids with disabilities than NCLB. Because for the first time, kids with disabilities counted. And that counting led to a **sea change** in attitudes in schools, communities, and states. In the 1997 amendments, the first time they talked about participation in assessment...they talked about alternate assessment, but it never really counted, just said that children should be assessed. It was a necessary and important step, but ignored the fact that there are subgroups of ELLs, disability, and ethnicity. There has been a tremendous focus on all children. If you have a school and 90% go to college, the school could call it a success, but the 10% who don't go are kids of color, or with disabilities. With NCLB passage, the message came out that you are **not**



successful, because **all means all** and we need to address the needs of all children.

- **Melody Musgrove:** I agree with Larry. As a former state director, I was never at the table of important education work for kids with disabilities. Not until NCLB. And many of my state director colleagues said the same thing. We measure what we believe is important. When we started measuring outcomes for kids with disabilities, we did it for compliance, not to look at results or to see how well they were doing or if they were meaningfully included in the general curriculum. NCLB did that—it is not perfect and can be improved and changes are needed, but it has been transformational in shining a spotlight on the performance of kids with disabilities. Also, how important teacher preparation is for teachers—to make sure that those who leave teacher preparation programs know what to do and how to use the technology and know how it supports all children and supports their instruction. In some cases, students are teaching the teachers in how to use technology. We need to do better in training teachers in teacher preparation programs as well.