



NCTI 2009 Innovators Conference

Podcast Interview

Monica Martinez, President, [New Tech Network](#); Vice President, Education Strategy, [KnowledgeWorks Foundation](#)

Transcript

Well my favorite reading material to help understand this is a book called “Growing Up Digital” by Don Tapscott, and the book that he wrote before that was called “Wikinomics,” and I think both of those books give amazing insight in today’s students. Tapscott surveyed 11,000 young people, and found that today’s youth yearned for and demand participation, collaboration, and an opportunity to contribute to solving local and global problems as a result of web 2.0. The internet is not being used by today’s youth as simply a tool to find information, as it was for me and many generations before me. But it is being used as a tool to share information, collaborate on projects of shared interest, organize, and socialize. This can be done through social network sites, such as Facebook, or MySpace, live chats, blog posts, participating in multiple player online games and virtual worlds, remixing content such as songs, art clips, stories, photos, or videos and uploading them to YouTube, Flickr, or other specific interest sites, instant pulling or rating systems on songs, movies, games, etc. Essentially, while we have sometimes marginalized, minimized, if not even vilified, the use of social media by today’s youth, social media opens up a world of possibilities. Today, students have a new operating DNA from us.

The old teaching paradigms of standing and lecturing students have existed for centuries because students themselves had limited access to information: a textbook, an encyclopedia, a local library, or a teacher. Of necessity, they needed to sit and listen to one who had access and knowledge. This is often called “sit and get.” Today’s world’s different – today students have access to almost all the information through the use of the internet and the robust search engines that now exist. They have access to tools that help them find, analyze, and understand what they have discovered. If students have access to these powerful tools to ultimately learn how to teach themselves, then the role of the teacher must change. The role of the teacher must change to one of an expert guide, a facilitator, a navigator of knowledge acquisition, application, and extension. I want to repeat that to be very clear about what we’re asking for: I’m asking for the role of the teacher to change, to be one who can be an expert guide, one who can facilitate students and be a navigator of knowledge, acquisition, application, and extension. By starting with changed teaching practices, we start to understand how technology can be effectively deployed to engage and educate today’s students. So we have to think about, how do schools become comfortable in engaging students who are accustomed to a culture of contribution, connectivity, sharing, and collaboration. What is the teaching and learning paradigm that prepare youth for the maker’s economy, which is one that all students can



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create. How does this system of services support teachers in doing this? A great example for me is the New Tech network of high schools, a network of forty schools.

New Tech was originally created by business leaders in Napa, California. Business leaders were dissatisfied with the state of education; they wanted to see students who were prepared to work in their communities and in the colleges, and they wanted students to have what we now call 21st century skills. So with that they created a new school that has now been replicated over the last six years to forty different sites. What New Tech schools do is this – first they create a culture that empowers, the culture empowers both teachers, and both students. New Tech network schools support and encourage a culture of contribution, connectivity, sharing, and collaboration. This is a pervasive norm that provides an opportunity for collaboration and contribution for everyone. I’m going to quote from a student who gave a speech at the opening of a New Tech school in Albany, New York. This student said: “One of the most significant things has been the spirit of collaboration that exists at this school, and not just in the classroom but in everything the school does. We all come to school with a purpose of learning, but here we do so in collaboration. Shared purpose with our teachers – it is as if there is a mutual understanding between the students and the staff about how we help each other, how we work with each other, and most importantly, how we treat each other. The relationship between students and teachers at Tech Valley is another one of the things that make Tech Valley unique. We feel as if we co-exist with the teachers as we learn, rather than feeling inferior or subject to them. We work with all types of people to solve problems and deal with conflict; this is our challenge everyday at Tech Valley, where the culture feels professional in the sense of responsibility that we have to learn from each other and contribute.”

New Tech also deploys a pedagogical model that engages youth, and again, talking about today’s generation, we don’t need a pedagogy that has students sitting and getting, but instead we need a pedagogy that engages students, and at New Tech, we do that through project-based learning, where students apply knowledge, and they acquire 21st century skills as well as well as content knowledge. By starting with changed teaching practices, we can understand then how we change technology. So the same student that I quoted before, he was also talking about how he learns, when he talks about Tech Valley in front of this group at the opening of his school. He says: “As mentioned before, our school is extremely unique. One way is how we learn. We are immersed in projects at Tech Valley that allow us to work with the ideas we lean about in the community around us. So for example, we might learn in Algebra about parabolas, and then use what we learned to construct solar ovens. The style of learning changes our habits from searching for the correct answers to learning how to observe and ask questions. One difference here is the way we approach problems through open-ended questions. For example, last year in Environmental Analysis, we were given the question, ‘Is the Hudson River nasty?’ We had to figure out what information we needed to help us answer this question. Because it



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was open-ended nearly every group ended up with different answers and different reasons for the answer. So along with the change comes the new habits we develop to think critically and become aware of the many perspectives that we need to work with when it comes to complex problems, and also which help us develop greater tolerance in differences in people around us. Because of this learning environment at Tech Valley High School, we have become what we call engaged learners. We have the privilege to interact often with the outside community and learn through the direct experience as well as through other models.” So as I mentioned before, when you start with the pedagogy first, then you can talk about technology. So if you change your teaching practices, then you think about how can technology be effectively employed to educate and engage students.

So perhaps most important to New Tech in addition to the use of project based learning and one-to-one computing where students can apply technologies to their work to encourage performance of complex, authentic tasks, is New Tech’s focus on the creation of a set of custom designed web-based learning management system that directly supports changed teaching and learning practices. The tools in this learning management system that we call “Pebble”- which is basically a play on electronic, project-based learning- these tools represent a fully integrated suite of tools optimized for the creation and management of a collaborative teaching and learning environment. There are templates that allow for customization of content. The tools are accessible to all students and teachers in the network 24/7 through a web-based portal that is standardized and operating system independent. Whereas other technology tools may support traditional methods, this collaborative learning environment is founded on project and problem-based learning instructional practices. They represent a place where teams of students show their work on projects, a place where teachers develop, share, and modify projects, a place where authentic assessment tools capture real world skills in a formal and consistent manner, a shared library of resources continuously evolving through teacher use and development, a hub through which best practice is shared across a quickly expanding network of schools. Technologies are constantly changing, so at New Tech we are not offering courses on how you use technology, such as how you might teach CAD courses, or how you might teach PowerPoint or other Microsoft tools, instead we are using tools to help students collaborate together. The students use a course calendar to help them be self-directed, and the rubrics are based there and they develop their papers, presentations, and etcetera. It is seamless with project-based learning.

The other aspect of our technology is that we have what we call, on our electronic learning system, a report card called Grade Portal. And basically this report card captures the mastery of reading, math, and writing, and it also captures the 21st century skills. So you see how all of our students are measured not just on content but the other learning outcomes they have such as work ethic, collaboration, critical thinking, problem solving, oral communication, verbal



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communication, and so forth. We have to be able to provide students with learning experiences that will prepare them for the future, for them to be the creators and the innovators and the entrepreneurs who will develop our new economy. We have to respond to their norms or their style, and with this, we think New Tech is one approach that does this, and we'd like to use this approach as a way to help others re-imagine what teaching and learning can look like for the future.