PILOTed

The online learning newsletter from PILOT Online Learning Systems

February, 2003

On Wednesday, February 26 I attended the first day of the CoSN (Consortium for School Networking) Annual Conference on Achievement, Assessment & Accountability in Arlington, VA. There's a lot here to challenge our thoughts of education in general, and specifically, the role of technology in education, now and in the future.

I've tried to report accurately on what I heard without editorial comment.

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What's happening in Washington

Leslie Harris, CoSN Legislative consultant

The federal budget for education is looking at about a 2/3 of 1% decrease for 2004. Funds for the lowest achieving students and schools (Title I) are proposed to increase by about 10%, so

most of everything else will shrink. Education is being squeezed due to the fact that it is not the issue du jour and the money is tight to begin with.

Eugene Hickock, US Under Secretary of Education

Consider three situations each of which illustrates an issue facing us in education.

First consider a 4th grade class in an inner city elementary school. There are 30 kids in the classroom, It's the day after Valentine's Day and there are pictures of presidents and Valentine hearts all around the classroom. There is a teacher in front of the classroom, and she loves teaching. She loves the kids and the kids love her. The 30 faces are eager and there is a palpable energy flow throughout the day as she brings them through their activities.

There is one problem, though. Of the 30 eager young faces, 26 of them cannot read. They'll all be going on to fifth grade next year. By high school, there will not be a class size problem because most of them will have dropped out. But as the teacher walks through the halls this day during a break, the kids come up to her and give her hugs and high fives, which she affectionately returns. A visitor approaches her and asks how the kids are doing, and her response is, "Given where these kids come from, they're doing really well."

Issue number one, how do the images, stereotypes, and labels we create in our own heads limit what we can accomplish in education.

Second, consider a suburban school. The community doesn't even call it a school, they call it a campus. It's got great facilities, it's wired, it's got a varied course selection and taxpayers willing to invest in their kids' education. Test results and college acceptances uniformly place it as one of the top schools in the state. But when you look into the figures more closely, you see that there is a community of kids from one area of town that have a 50 point gap.

Issue number two, are the schools that we rate so highly really as good as we think.

Third, consider a remote school, it can be anywhere, in the middle of nowhere. The kids come in off their buses in the morning with their heavy book bags. Some of the grades have been combined, so 3rd and 4th grade classes are together. As the students enter their class, they pair up in two's, a 3rd grader with a 4th grader, each pair in front of a computer. In fact, they spend practically their entire day in front of the computer. The teacher is not teaching from the front of the class, she is moving around the class, helping or prodding each pair. And for special topics, there are specialists who also wander around this class and other classes, assigning projects and critiquing. Parents can directly monitor what their kids are doing in the school over the web. At any point a parent can take a look at a child's work, look at assignments coming up, see teacher comments, or ask the teacher a question. Where there is a test, students and parents get results within hours. In two years, these kids are operating two grades above grade level.

Issue number three, what can we really achieve if we rethink the way we educate.

Measuring the total cost of ownership (TCO) of technology

Bill Rust, Research Director, Gartner, Inc.

CoSN is unveiling a free online tool that schools can use to grasp what it really takes to purchase, deploy, and manage computers and networks. TCO is a concept introduced by the Gartner Group for businesses and incorporated an asset life model – acquisition, deployment, management and support, and retirement. In order to calculate the return of technology, it is necessary to understand the full costs, including support, connectivity, replacement, disposal, retrofitting, and training.

John Bailey, Director of Education Technology, US Department of Education

While the concept of TCO has been widespread in business, it is just as critical in education. It helps schools manage technology by thinking through all the ramifications of purchases and ensures that needed areas are funded. You cannot understand the return or effectiveness of technology unless you are able to know the costs.

The web address is http://www.classroomtco.org. The full tool will be available in April, 2003 but there are already aids at the site to help a school or district determine its TCO.

Get a clue: the new manifesto for Learning

Ferdi Serim, Director, Online Internet Institute (and Jazz flute player)

The manifesto behind The Clue Train Manifesto (the book is available free at www.cluetrain.org) is that markets are conversations, the Internet is a tool that allows us to claim our voice, and the benefits of groups are achieved only once people communicate. What happens when we think of education as conversation?

We are in a war against ignorance and there are no weapons of mass construction.

A true story. One high school, with reasonably high test scores, in one year dropped two levels. The cause was obvious – low cost housing had recently gone up, the new kids could barely speak English, and despite the extra efforts of the school, they were dragging down the achievement of the community.

But, that's not what the data showed. The new group had not caused the decline. The new kids had actually achieved the same levels as the school had previously achieved. In fact, it was the students in the top classes who scored significantly lower. Not because they didn't know the material, but because they were actually so far beyond the material being tested that they just blew off the test.

The next year, the school scored higher, and the kids from the low cost housing also scored higher, so everyone was satisfied. Until, again, someone looked at the data a little differently. Most of the kids from the low cost housing actually did not improve, but there were five kids who scored so high that it brought up the average of the entire group by a whole level.

Too often we suffer from premature elucidation – the syndrome of coming up with answers way too soon.

The Digital Disonnect: Intenet-Savvy Students and Schools

Peter Grunwald, Grunwald Associates

From a very recent (still not public) statistical survey of kids using computers in schools:

- 70% of kids find that the Internet makes learning easier
- 60% of kids feel that they get too little Internet in school.
- The average kid spends about 1 hour a week on the Internet in school and 5 hours a week on the Internet out of school.

Douglas Levin, Senior Research Analyst, American Institutes for Research

Doug conducted qualitative research on Middle School and High School students for the Pew group. He conducted 12 focus groups in all different types of school districts in kids from widely disparate backgrounds. He also solicited online stories and conducted a national poll. He listened to kids talk about how they learned, what helped them, and what would help them more. The full report is available at www.pewinternet.org, but here is a summary of what the kids said.

First of all, virtually all kids spend some time each week online.

The most common uses of the Internet for school work were

- As a textbook and reference library – going online was easier and "better" because it was more current.

- As a tutor and study shortcut – when they wanted different or better explanations of something they did not understand, to get more information on something they were particularly interested in, and as shortcuts (using sites like sparknotes and pinkmonkey instead of or in place of reading the book).
- As a study group – working on group projects via Instant Message, IM'ing or emailing each other questions about homework, obtaining information about assignments.
- As a guidance counselor – looking up requirements and benefits of different careers, learning about colleges, especially in instances where the guidance department did not supply good information or in cases where they were embarrassed to talk to someone at school.
- As a locker, backpack, or notebook – starting a paper at school, then emailing it to themselves to work on at home or at a friend's house.

When using the Internet at school, assignments were strictly limited to what could be accomplished in a 45-minute period. Teachers often were afraid of a lack of access, but students knew ways they could get to an access point.

Assignments often were made just for the sake of using the Internet. The students felt many teachers were just reacting to being told "use the Internet in your class." Those teachers would give strict instructions, like "go to this web site, find the answer to this question, then write your answer, do not go to other sites." They did not learn as much when instructions were so constricting.

Most students felt that their Internet access at home, even over dial up lines, was better than in the schools. Blocking and filtering software would often prevent them from doing their work at school.

Students did not have accurate understanding on piracy, cheating, viruses, plagiarism, or privacy. Middle School students lacked skills to frame assignments in ways that would allow them to find information.

Students spend far more time on the Internet out of school than in it.

Doug reaches the following conclusions:

- We must have better coordination between in-school and out-of-school curricula.
- We need more and better Internet access in schools.
- Teachers need better Internet skills.
- Students need technology/media/information literacy education.
- Those with easy access outside of schools feel they have an advantage over other students.

Julie Evans, Chief Executive office, Netday

Netday is a not for profit that provides technology mentoring and coaching in "challenged" communities, often using Americorps volunteers. Netday conducted six high school focus groups in these and other challenged schools to get a snapshot of high school student attitudes and behavior in very poor communities. They found that the kids were very vocal about how they learned best, what works, and what doesn't work.

All the students agreed that the Internet helps them with their homework and that most of their Internet access is away from school. In fact, 96% had at least one email account, and most had three or more. All had used the Internet to look for information on colleges, careers, or jobs.

Two-thirds of the students were online at least an hour a day. Seven-eighths ranked themselves intermediate or experts, while one-third ranked their teachers as beginners. The kids were very sophisticated, especially in their social uses. All kids had their favorite sites and were very articulate about them.

The three most common complaints were that school filters restricted access to usable sites, many teachers did not understand the Internet, and the lack of time (computers were used only in specific class periods, overbooking of workstations during lunch, and not having after-school access).

One interesting finding was the difference between the kids who had technology mentors (as offered by Netday) and those who did not. They were asked what would happen to their schoolwork if they no longer had access to the Internet. The mentored students' responses were more articulate and extreme ("We have to have the most current, up to date information to be accurate", "everything would be so much harder and take so much longer to do"). The non-mentored kids felt their work would either take longer or they just wouldn't do as thorough a job.

Some of the students were asked what technology a new school would need to support its students, and the answers were very revealing:

- One computer for each student
- Faster Internet connections
- Teachers who know how to use the technology
- After school access to the labs – "Technology is our anti-drug" (it was their way to stay away from bad things).

Netday has a "how-to" guide for a high school wanting to facilitate its own focus groups and will send it to anyone who emails them at info@netday.org.

Using Research to Inform – Effective Technology use

John Cradler, President, Educational Support Systems

Caret is a free resource to help educators evaluate different technologies and their use in education and is available at http://caret.iste.org.

The Caret web site has articles, survey, program evaluations, and research studies on the following topics:

- Student learning
- Professional development
- Curriculum and instruction
- Assessment and evaluation
- Instructional context
- Online teaching and learning
- Instructional reform
- Policy implications

Online Professional Development

Patricia Sine, Director, Office of Educational Technology, University of Delaware

Teachers primarily turn to online professional development when the course(s) they want are not available locally. The local offerings are often restricted because there is not enough local demand for advanced topics or for specializations.

When a teacher looks for a course, the primary issues are: how much (cost, duration, credit), does it count toward local requirements, what are the pre-requisites, and what is the weekly time commitment.

Unfortunately, there is no one place to find this information. U of Delaware researchers, in trying to find this information from individual providers, inevitably ended up having to call at least once.

Based on their research, the U of Delaware team has an ongoing project to compile this information and make it available online. They currently list over 250 courses from 38 different providers at http://www.oet.udel.edu/martec.

They are also adding to the list and enhancing the information provided.

A Conversation About Technology in the Classroom

James Hirsch, Associate Superintendent for Technology, Plano Independent School District

Seymour Papert, Professor Emeritus, MIT Media Lab, Creator of the LOGO programming language

Linda Roberts, Former Director, Office of Education Technology, US Department of Education

LH	What do you see as the near term future of technology?
LR	We know more about learning, we've put technology into the schools, over the near term leading educators are doing more and more all over the world.
SP	I see us in a downward path over the last 15 years. The current view is that education imparts information and that the computer is something that stores and gives information. But I think education is about to break away, it's going to be about building ideas instead of imparting flashy stuff.
LH	What do you see as the watershed moments of change in your lifetime?
SP	1963, just after I was working with Piaget, I got to work with a computer for two whole solid days and was able to solve problems he'd been struggling with for years. At about the same time I visited an art class, fell in love with some of the works, and asked if I could acquire some. I was told that they were not available, the teachers had already requested them. I wondered, why can't students do things in math that are so wonderful the teachers would want to take them home. That's when I realized that the computer could become a medium

	for this type of change.
LR	1968. A few of us had a conversation about what TV could do for kids, and that became the beginning of Sesame Street. It started us thinking, you don't need a teacher on TV to teach, music and media could engage kids in other ways. More recently, I was in an elementary school where every child had a laptop. I saw the kids in music class with their laptops open on their arms. I asked them what they were doing and they looked at me like "why are you even asking?" and replied, "we're taking notes." I saw how the kids regarded the computers as extensions of themselves.
LH	What do you see as the lessons needing to be learned?
SP	In 1976 visionary teachers started to bring computers in their classrooms, where there were maybe one or two computers for a whole classroom. This realm moved out of the visionary teachers sometime in the 80's, into the mainstream, and started to be controlled by the bureaucracy, but we froze this image of a few computers and many students. The biggest issue is how are we going to break out of this culture?
LR	We tend to over promise immediate impact and underestimate the long term effect. I am struck by subtle changes. There isn't a kid today who doesn't think that there is a way to get the answer to any question fiven a chance to search. That's a whole change in expectation that we may not even be aware of. How do we help those changes overcome the inertia in the system.
LH	When you look over the changes in the past, what has had the greatest impact on the classroom, hardware of software?
SP	What's not a good question. When you reach the point where a teacher says,

	"you can't take that away from me," that's when you know technology has made an impact.
LR	I agree. You can't separate them, it's the total impact that's important.
LH	Should we be focusing our discussions on learning strategy or on content?
SP	I wish we could be investing in real Research and Development, exploring frontiers of learning and frontiers of technology. We should not be satisfied with making marginal improvements, we should aim for the very best for the next generation.
LR	My estimate is that we have targeted about 1 billionth of the sum of human knowledge and we've decided that's what kids should know. Most of the content was picked 200 years ago and most would be a stupid choice today. We can teach and kids can learn incredibly different now, but we focus on these other things because we don't have the courage to do the big things.
SP	We make a big mistake in not having the government e the source of new ideas. The private sector has no risk capital now, they're just trying to survive. We need the government to open up options.
LH	What will be the impact of future technologies.
LR	The term *research* could be very powerful. We say we are looking for research based innovations, but how do you base completely new things on research? Let's create trials, new concepts, and that should be the concept of research. Or do we say that research is gathering statistics in *studies*? That concept could strangle the future and it's up to us to usher in the future.
SP	It's not the policies, it's the unintended consequences and it's the way they get implemented. There's a whole group who have been shortchanged, but if the

	way we carry out the change is command and control, we'll end up with something we don't want. If we could help each teacher so each student gets what he needs to read by 2nd grade, it could be incredible. But if we too closely define the procedures we must follow it could be a disaster.
LR	The point isn't chasing the gap. Do we want to close the gap between Einstein and you and me by preventing an Einstein? It scares me. I look at the growth of home schooling as an abandonment of public education. But perhaps that will save us.
LH	What do you think is the single greatest opportunity or challenge?
LR	Do away with the classroom that is segregated by age or subject. I am worried about how many more cohorts and generations we need to sacrifice before we understand this.
SP	Our greatest challenge is to be truly reflective, and then throw out what is not working. We need to think outside the conventional wisdom. Total Cost of Ownership could be a good way to understand how to best allocate our resources if it becomes a way to improve learning. But if its purpose becomes merely to find the lowest cost then it is another disaster.
LH	What if you could invest 1 billion dollars in education, where would you put it?
LR	I'd spend 900 million dollars to put a $100 computer into the hands of each student and teacher in the country. That would send a shock wave throughout the system. Then I'd spend the other 100 million dollars into figuring out the school of the future.
SP	I think we need research, experimentation with learning in different settings and contexts.

Information on the author:

Mitchell Weisburgh is a founder and the Learning Architect of PILOT Online Systems. He has over 20 years experience in training, education, and systems design. He has written over 100 courses on both technical and soft skills. You can learn more about PILOT and see other papers by Mr. Weisburgh at http://www.pilotonlinelearning.com and he can be reached at mitch.weisburgh@collegepilot.com.

PILOT Online Learning designs and creates learning systems for publishers, school systems, and corporations.