PT3 Summer Institute July 8th – 12th
(Main Building Learning with Technology Web Pages:
http://www.education.umd.edu/blt/)

Summary of Seymor Papert presentation:

U.S. Education system of today is in trouble
Similar summary can be seen at :
http://www.mff.org/edtech/article.taf?_function=detail&Content_uid1=106

- signs of the education system cracking include:
  - failing achievement scores,
  - students dropping out,
  - many more alternative programs being developed,
  - increase in alternative programs such as home schooling
  - government attempt to hold things together by mandating national high school testing and accountability
- Where does technology fit in?
- "The time has come to move beyond 'technology-aided school.' It is time to open our minds to radical change in the institution of school itself."
- "And as long as schools confine the technology to simply improving what they are doing rather than really changing the system, nothing very significant will happen."
- In the future:
  - "The structure of places set up for learning will be so different that perhaps the word 'school' will no longer be used. If it is still used the word will have a very different meaning."
  - "Many aspects of the structure of schools that have been taken for granted will become obsolete. For example segregating children into age groups, fragmenting knowledge into subjects, and fragmenting the day into periods will all be recognized as quaintly old-fashioned ideas of the assembly line period of industry and education."
- Extracted from another Papert discussion

  My answer is that if you have a vision of Someday you can use this to guide what you do Monday. But if your vision of where it is going is doing the same old stuff a bit (or a lot) better your efforts will be bypassed by history.

  But using the Someday vision to guide Monday might mean you have to stand the usual criterion for judging progress in education on its head: you have to stop trying to improve the functioning of the old system. Instead lay down the seeds for something new. Maybe this will result in decreased performance according to the traditional measures. Remember that the first airplanes were not so good as stagecoaches as means for getting around. But they were destined to revolutionize transportation.

A hundred years ago John Dewey was showing the faults of the curriculum-driven, non-experiential ways of teaching favored by schools. But all his work had only a marginal effect on what schools do; they have changed in some details but most are not essentially very different from those which Dewey criticized way back then.

Critics of school reform (including Todd Oppenheimer) are fond of quoting the failures of past movements as evidence for the extreme difficulty of changing school and hence casting doubt on the likelihood that revolutionary change is likely to come this time round.

But the critics are misled by their failure to look below the surface of what is happening to the learning environment. If they did they would recognize three aspects of a profound difference between the present situation and anything that has happened in the past.

Each of these takes the form of a reversal:

Reversal #1: Children become a driving force for educational change instead of being its passive recipients. Dewey had nothing stronger than philosophical arguments to support his attempts at changing school. But academic arguments can never budge an institution as firmly rooted as the School Establishment.

This time we are beginning, just beginning, to see the effects of a wave that will soon become a veritable army of young people who come to school with the experience of a better and more empowering learning environment based on their home computers. There is much talk about schools setting higher standards for students. But what is more important is that these students are demanding higher standards from schools. And moreover they come armed with the know-how that makes better learning possible.

Reversal #2: Teachers' technologies vs. learners technologies. The emergence of Kid Power as a force for change is closely related to the fact that digital technology is a learners' technology. This makes it radically different from the educational films and television cited by the critics who scream about previous technologies promising to bring an educational revolution and fizzling.

These technologies were teachers' technologies. The fact is that a teacher talking out of a TV set is not different in kind from a teacher lecturing in front of a class. These earlier technologies did not really offer something really new. The computer does: it offers a fundamental reversal of relationships between participants in learning.

Reversal #3: Powerful advanced ideas can become elementary without losing their power. The reversal that is most often missed is the opportunity for making accessible to young children very powerful ideas that were previous encountered only in specialized college courses.

The strategy for overcoming the last obstacle brings us full circle to my opening paragraph:

for those of us who want to change education the hard work is in our own minds, bringing ourselves to enter intellectual domains we never thought existed. The deepest problem for us is not technology, nor teaching, nor school bureaucracies.

All these are important but what it is all really about is mobilizing powerful ideas.

Above from
http://www.mff.org/edtech/article.taf?_function=detail&Content_uid1=106
Seymour Papert

Summary of David Dwyer presentation:

- The context of schooling must take into account the knowledge explosion
- What students need to know will change several times in their life
    - Bill Wofle from the Academy of Sciences' study showed:
        - By 2025 knowledge will be doubling at the rate of every several months—compared to 2002 where knowledge is doubling every 5-7 years (knowledge or data information)
- This makes educational mission "impossible"
- T.S. Elliott- a poet recognized the "path" - data-information- knowledge – wisdom
- 45% of jobs that students in HS today will have -have not been invented
- Mega trend – the content of education
    - Standards and high stakes tests?
        - 49 states have set standards for the 21st century learning (Iowa no – but makes local do it) but each state has "different" standards
        - So what's standard about standards?
    - Thorndike- 1929 measuring progress with tests debunked in 1929 (Thorndike is father of testing - yet debunked it)
    - 66% or 2/3rds of time today (Kappan magazine) spent on teaching to standardized tests
- How do we get through this standards era?
- Other big trend= impact of technology
    - In 2001 .5 to 1 student ratio and 98% of students connected to Internet
    - 77% of classrooms connected to Internet
    - Process of getting technology into schools

    - 1985 - 10,000 titles of Apple Software
    - 1990-1991 ratio 20-25:1 computer
    - In 1997 e-rate legislature made available for schools so that by 2001 all schools were to be wired
    - So, after a lot of money on tech now ~2002 how does learning changed? What have we got for our money?
    - In ~2006 US Labor Department estimates:
        - 50% of jobs will be in or involve technology
        - Tech sector employee will earns 78% more than non-tech employee
        - 500,000 US tech jobs unfilled by the end of the decade 1 million (all per year)
        - 32 of the largest metro areas in schools today 50% (~2000) drop out of school everyday
- ACOT (Apple Classrooms of Tomorrow) Lab-About the Future study (1985-1997) 1st questions asked:
    - will students ever learn to use keyboards?
    - will teachers be smart enough to learn or teach with technology ?
    - will students get "tired" or "bored" after awhile?
    - socialization issue- will students not react or develop anti-social behavior?
    - Then questions changed to ask, "Integration and infusion" questions
- Some positive results have been documented by:
    - NCATE
    - USDOE
    - WVA DoED
    - Indiana Buddy Project
    - CEO Forum
    - ISTE
    - NCREE
- What do these studies show?
    - increase in test scores in less time
    - more writing and better writing skills
    - improved student engagement
    - improved home school relations
    - improved attendance rate
    - increase in retention and less drop out
    - 21st century skills improved
- Today's 3A's include:
    - Achievement – Assessment -and Accountability
- They are trying to answer the challenge- No Child Left Behind Act
- Focus on reading-writing – math and test prep
- All these are basic skills
- But we already know that Basic skills are 10% better through or with technology and with technology it takes ~30 % less time to achieve mastery. Why? Technology more engaging

- Tech Proficiency-What does it mean? What does it include?
    - increase productivity
    - information access
    - motivation
    - search tools
    - communication tools
    - collaborative tools
    - word processing
    - spreadsheets
    - databases
    - and browsers

- ACOT studies:
    - 3rd graders with key board produced 35 words/minute compared to pencil @ 11 words per minute and pen @ 9 words per minute
        - study consisted of 10 minutes per day of keyboard exercise
            - indicated easier to write with keyboard –students were able to do more and had more time to organize and have deeper thinking and vocabulary
        - repeated with 2nd grade, same results
        - 1st grade the same results
        - K results not so good -no motor skills- these are needed
- 21st century skills prepare students for success in changing world --web based inquiry information analysis, media rich publishing entrepreneurship and collaboration
- Suggests we read Branford "*How We Learn*" a lot of studies from cognitive scientists and medical science-looked from how brains work different for experts and novices-- experts go around sorting gathering sifting reorganizing etc….look at NCREL study that looks at this also

- By K, 300 hour difference between students in literacy and reading readiness-
- Keep students in school to increase life skills
    - increase attendance
    - decrease drop out rate
- Greater number of students went onto college and greater number had career opportunities
- For sample best practice lessons
    - have clear established and shared goals stated in learning terms
    - align instruction-curriculum and assessment with shared goals
    - provide routine access for students and teachers to the technology
    - provide PD for teachers
    - backward design model -what goals- learn assessment -how will you assess and then how to teach to get there
- Sandholt & Ringstaff & McGwen's book Technology and learning also 1993-94-95 Kappan and Educational Leader Apple Education site go to

www.apple.com/education - apple classrooms go→to bottom and to search box and search for ACOT ali.apple.com