① Administrative
- Transcript
- Feedback to High Schools

PROPOSITION
TRANSITION BLUEPRINT
→ High School not Formal

① TEACHER RENEWAL
YALE - NEW HAVEN

② DISTRICT GOVERNANCE
Early Admission
COLLEGE in the schools

STATE FUNDING FORMULA

PROJECT ADVANCE

③ GENERAL VS SPECIALIZED ED

High School
Basic

3 special Tracks:
Early College
Early College
Early College

SPECIAL ACADEMIES
N. Carolina

THE FUTURE : 1980's

EDUCATION IN OUR AGE OF TECHNOLOGY

Remarks

by

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An important landmark was reached in 1982. That was the year when Time magazine in its annual roundup named--not a man--but the computer--"Machine of the Year."

We had come a long way from the time when man and woman first walked the earth. At that time communication was possible only in the present. Sounds were traded face to face, messages were fleeting, but somewhere in the early dawn of history we had a revolution. First through squiggles of art on the walls of caves and later through scratches on stones and on parchment--messages could be preserved. Man's feelings and ideas could be passed along to someone else at a later time in a different place.

This was the first revolution in communication. The invention of a visual symbol system that could be widely understood and could endure.

The second communication revolution in our history was born in a 15th century German town and the printing press was the midwife in attendance. The invention of moveable type meant messages could be multipled. The masses could be informed and the name Gutenberg has acquired in our history a monumental stature.

Today a third revolution has begun. It's called the "Information Age." The first electronic-digital computer called ENIAC was completed in 1946. It filled a large room at the University of Pennsylvania. It weighed as much as fifteen Mack

trucks and performed 5,000 calculations every second. Today a single silicone chip weighs less than a fingernail and can transact 200 times faster than the first computer. The micro millennium,as it has been called,now touches every sector of our lives--from farms to factories to banks to airline terminals and to grocery stores. Today any telephone in the United States can now be linked to over 500,000 million other phones throughout the world. Any one of these phones can be used to establish interconnections between giant main frame computers miles away, and can be used to transmit voice, text, visual data all around the world.

This is an era in which we live--not so much among things--as among messages. And I predict the "Information Age" will have an impact on our world as profound as Gutenberg's invention 500 years ago.

When I grew up in southwest Ohio

No Radio I Magnin News Break

No TV Radio City

TV 4,000 hours

TV 15,000 hours

More information - too smart

too soon

Steve - Learned it on Sesamee Street - kindergarten teacher thinks she taught it to me.

Education with long memories will whisper--here we go again. They recall the "gee whiz" days of the 1950's when the socalled "teaching machine" was widely hearlded as the "miracle cure" for education. Not surprisingly, teachers reacted with suspicion. The machines they said "would dehumanize the classroom." And the new "miracle machine" quickly came and went.

ETV of the 1950's
Hagerstown, Maryland
Midwest Airborne TV Project

Talking typewriters

Language Lab
Post Sputnik

Enter the computer.

Educators are now being told to forget about the language labs, teaching machines, 8 millimeter projectors and TV screens.

The microchip is different we are told. Today there are about 97,000 mico computers and 26,000 terminals in the nation's 82,000 public schools. About one-third of all of the schools in the United States have at least one computer.

11,000 have at least 3
4,000 have at least 7
2,000 have at least 10

In schools that have computers they are used most frequently in mathematics classes, then reading, next social studies and finally science.

Additional caveats should be noted. Males dominate the computer scene. Only a small percentage of females take computer courses or play with the computer in their spare time. Also, computers, unhappily, are found in rich schools, rarely in the poor ones.

The Carnegie Foundation is conducting a study of the American high school and we found the full range of computer use. The principal at Lakeside high school told us:

> "Remember we work in a business that is bankrupted--we don't have money for computers. In fact, nearly all of the clocks at Lakeside high tell different time because there is no money to fix them."

Pioneer High School is another story. Here we saw one of the most sophisticated computer-assisted management programs in the country. The schools have eleven different "printout" reports on every student. When we asked for information on the students we were to follow for a day we received a printout of courses taken: credits earned, grade point average and class schedule. And there were computer terminals for institutional use in several classrooms.

GAP - Have and Have Not

will grow

Looking back, why have all the technology crazes come and gone? Is the computer another gimmick? Two lessons can be learned.

First, technology materials - "How" - "What"

Hardware - Software

Cover - But no book

Rather learn face to face.

Second, teachers are ignored.

17% of teachers were taught to use.

Daley, the Vice President of AFT put a very human face on these depressing statistics in a speech before the National Workshop of Television and Youth in 1980.

Daley said that: "Teachers are much like other people." Things which are new and rather technical can intimidate them. It is difficult to change old habits and old problems. It isn't going to be enough to bring an expensive piece of equipment before a faculty, give them a half-hour instruction on how it might be used and then wheel it back to the media center and wait for the flood of reservations. A few teachers on the staff will accept it as a challenge and run the risk of falling flat on their faces as they experiment with it.

Do you know what it is like to tiddle around ineptly with a piece of electronic gear before a class of 17 year olds whose bedrooms resemble the testing labs of RCA?

Looking ahead--teacher anxiety not withstanding--it is my own conviction that this time this new technology revolution will not go away. The plain fact is that technology will teach and if we fail to use it teaching will still go on.

(Teenagers - what influences you the most?)

1960 - Parents
School
1880 - Peers
T.V. - 8th to 4th

What then is the place of technology in formal education? How can it be constructive--not corrosive?

First, all students and all teachers should learn about the information revolution.

How as a part of the core of education schools and colleges should help all students understand the significance of the communication revolution we are in.

In a new general education report students should be taught the impact of mass communication. They should begin to see the extent to which the microchip now controls transition and discover the implications of a global communication network that makes it possible for messages instantaneously to span the globe.

Second, I suggest that all students whould be able to learn with technology. The calculator--for example--is a tool that can assist the learning process and it should be available to every student.

Similarly, the computer can be an enormous help in writing and editing--word processing it is called--and of course the computer is invaluable in mathematics--its standards are exacting. (Lewis & Thomas brain ahead of computer can forge)

And all colleges and schools should have one or two small computers in the library to help with bibliographic search, assisting students track down information for course work or for personal use and career choices, for example.

In the end, of course, all students should--through formal education--learn from technology. Technology is the teacher.

Sesame Street and The Electric Company have given us a glimpse of how technology can teach. The Adams Chronicle,

The Ascent of Man and the Masterpiece Theatre have been successfully linked to college causes, with special tests. And any student who has gone with Jacque Cousteau to the bottom of the sea, with an astronaut to the moon, with Sadat to Jerusalem, with Leonard Bernstein to the Vienna Philharmonic and with McNeil-Lehrer to the _____ debate has seen the potential of the electronic teacher and such a student has learned far beyond the classroom and the schools.

Great musical performances have broadcast "live" from Lincoln Center. Presidential speeches, Congressional debates, summit meetings all can now be seen and heard. Or consider the science series Search for Solutions. Each film in this videocassette series makes science and scientists come to life. One segment reaches back to the middle ages, showing a group of monks as they observed what they believed to be an explosion on the sun. The film then leaps to modern science with giant telescopes discovering--in fact--some disturbance on the sun. The combination of the monks illuminated manuscript with its eyewitness report and the confirmation continues later by modern science permitting students to ponder the continuity of discovering plus the connection between speculation and later proof.

Further, the video cassette and the video disc now break the tyranny of time and place that marred the television box that hung in the classroom 20 years ago.

Teachers can be placed "in the can" and viewed by students on their own.

In the future, check out your teacher like you check out a book.

We have broken the rabbinated method of instruction which was of necessity born before Guttenberg and before the McCarthys.

In the computer world we have a long way to go--one can learn--not just with but also from technology.

IBM - Basic Reading

(46 phonemics
visual - auditory)

Students in the future learn about
with -- computers
from

This brings me back to where we began. We are in a new information age. An age that will have enormous impact on colleges and schools.

In the summer of 1938, the great essayist and novelist E.B. White sat in a darkened room and watched transfixed as a big electronic box began projecting eerie, shimmering images into the world. It was his first introduction to something called TV.

E.B. White--who not only wrote Charlotte's Web, but also co-authored that great manual of clear communication, The Elements of Style--said in 1938:

> I believe television is going to be the test of the modern world, and that in this new opportunity to see beyond the range of our vision we shall discover either a new and unbearable disturbance of the general peace, or a saving radiance in the sky. We shall stand or fall by television--of that I am quite sure.

Forty years have passed and television has, to a remarkable degree fulfilled both E.B. White's predictions. It is "an unbearable disturbance." But, for educators, it can also be "a saving radiance in the sky."

The challenge of the future is not to fight technology nor is it to convert the school into a video game factory, competing with the local shopping center. Rather the challenge is to build a partnership between traditional and non-traditional education letting the technology teachers and the classroom do what they can do best.

Television can take students to the moon and to the bottom of the sea. Calculators can solve problems faster than the human brain. And computers can retrieve instantly millions of information units. But television, calculators and computers cannot and will not make discriminatory judgments. They cannot and will not teach the students wisdom. This is the mission of the classroom and the teacher.

The classroom of the future should be a place where transactions are--with calculators--masterfully completed. A place where video cassettes help students study on their own. A place where the New York Philharmonic comes live from Lincoln Center. And where the computer can be comfortably used by every student.

But the classroom of the future should also be a place where the switches are turned off. A place where students are

taught to reflect upon what they have seen and heard; where they probe fundemental questions about past events and about what is going on today. Above all the classroom should be a place where students are helped to put their own lives in perspective and sort out the good and bad and _____ from that which is elegant and enduring.

It is my deep conviction that if formal education could begin to tap fully the rich potential of technology

help students learn about
" " learn with
" " learn from
the new teaching tools.

And then--through the Socratic method interprt and bring value judgments to what is seen and heard.

It is my judgment that soon we could have the best educated generation in human history.

This is, in my view, the promise of technology and it should be our vision of the future.