Computers at School and Home

Did they really say that??

- Everything that can be invented has been invented. - Charles H. Duell, Commissioner, U.S. Office of Patents, 1899
- I think there is a world market for maybe five computers. - IBM Chairman Thomas Watson, 1943
- Computers in the future may have only 1,000 vacuum tubes and perhaps only weigh 1 1/2 tons. - Popular Mechanics, 1949
- There is no reason for any individual to have a computer in their home. Ken Olson (President of Digital Equipment Corporation) at the Convention of the World Future Society in Boston in 1977
- 640K ought to be enough for anybody. - Microsoft Chairman Bill Gates, 1981

Education in the Information Age

Information Age Education
Research and experience suggest education should provide the following for students:
- Technological familiarity
- Literacy
- Mathematics
- Culture
- Communication
- Learning how to learn

Education in the Information Age

Computers Go to School

Students can prepare for standardized tests using Inside the SAT and ACT.

Students in this class build LEGO robots and write LOGO programs to control them.

Computer-aided instruction (CAI)
- CAI software combines
  - tutorial material with drill-and-practice questions
  - in an interactive format that
  - provides instant student feedback.

Simulations and Games
- Allow students to explore artificial environments, whether imaginary or based on reality
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  - Mathematics

Education in the Information Age

Productivity Tools
- Most school systems now require some kind of keyboarding class.
- Productivity tools like word processors, spreadsheets, databases, graphics programs, desktop publishing software, Web browsers, and e-mail programs—the software tools used by adults—are the tools students learn most often in schools.

Computer-controlled Media
- Smart classrooms are being used by teachers to convey information in a more dynamic form and interesting
**Education in the Information Age**

**Students can actively participate**

- Individual devices to vote on a question posed to the class
- Dr. Krumpe may have something similar in his class

**Distance Education**

Discover what an advanced degree can do for your career.

- Accounting
- Business Administration
- Computer Science
- Education
- Finance
- Information Technology
- International Business
- Management
- Marketing
- Economics
- Management Information Systems
- Marketing Management
- Mathematics
- Statistics
- Analytics

Room for Improvement

- If the only thing that changes is the delivery medium, the advantages of technology are small—or nonexistent.
- Content must also be updated
  - Technology must be updated
  - Students have unequal access to technology; economically disadvantaged students have less computer access at school and at home. MIT project
  - Technology does not necessarily reduce teacher workloads. It redistributes the type of work.

**Computers at School: Midterm Grades**

**High Marks**

- Students improve problem-solving skills,
- learn more rapidly
- increased self-esteem
  - (especially with handicapped/at risk students)
- Increased social skills
- CAI tends to be
  - more motivational,
  - less intimidating
  - more personal

**Computers at School: Midterm Grades**

**Room for Improvement**

- SAS created Cary Academy
  - Cary Academy is an independent, co-educational institution for grades 6-12 that was founded in 1996. We officially opened our doors in August 1997 with 248 students in grades 6-10. Next year we expect to approach full enrollment which is 672 for grades 6-12.
  - Cary Academy was founded by Dr. Jim Goodnight and Dr. John Sall and their wives Ann and Ginger. Dr. Goodnight and Dr. Sall founded SAS Institute in 1976. SAS Institute is the largest privately-held computer software company in the world with 3,316 employees worldwide and 2,715 employees here in Cary. Their software allows large corporations to manage information. The SAS system is used by 98 of the companies listed on the Fortune 100. Dr. Goodnight and Sall donated 32 acres of pine forest adjacent to the SAS campus which is now the Cary Academy campus.
  - Cary Academy was established with a mission to fully integrate computer technologies into the teaching and learning process. Towards that means, we now have 620 networked computers on campus. English and foreign language classrooms have a 1:1 ratio between students and computers while other disciplines have a 2:1 ratio. Administration, staff, faculty, and students all have a password which allows them to access the network from any computer location on campus. Everyone has protected file storage space on the network.

**Computers at School: Midterm Grades**

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**Room for Improvement**
- Sending students to a computer lab for 30 minutes a week has little or no value. Computers are more effective when they are in classrooms where students can use them regularly.
- Cary Academy an example of how to use technology in the classroom.

**Computers Come Home**

**Household Business: Business Applications at Home**

- WordProcessor
- Spreadsheets
- Web Browsers
- Email
- Accounting
- Tax Programs
- Database

**Smart Cards**
- Look like standard credit cards.
- Contain embedded microprocessor and memory
- Some contain touch-sensitive keypads for entering numbers.

**Education and Information**

- CD-ROMs to help with all kinds of tasks, including locating streets in far-off cities, planning wilderness treks, and learning to play the guitar.

**Home Entertainment Redefined**

- Email
- On-line radio, movies
- On-line banking
- On-line buying
- 2004 on line buying
  - $50 Billion non travel
  - $50 Billion travel

That’s all folks!