

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

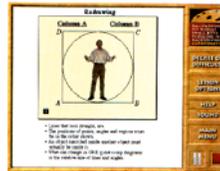
Information Age Education

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.16



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

Education in the Information Age

Computer-aided instruction (CAI)

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



Education in the Information Age

Simulations and Games



- Allow students to explore artificial environments, whether imaginary or based on reality
- Oregon Trail

Education in the Information Age

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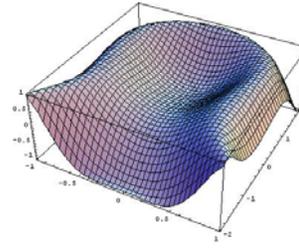
Simulations and Games



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- Oregon Trail
- Carmon Sandiago series
- SimCity, Myst
- Languages

Education in the Information Age

Simulations and Games



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- Languages
- 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.

Education in the Information Age

Computer-controlled Media

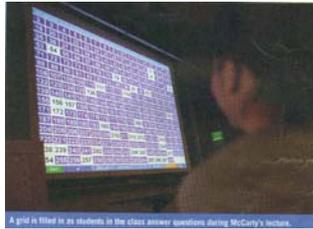
- Smart classrooms are being used by teachers to convey information in a more dynamic form and interesting



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

University of Phoenix

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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

High Marks

- Computer technology
 - can make learning more student centered and stimulate increased teacher/student interaction.
 - can encourage active processing and higher-order thinking.
 - Can encourage organizational skills with interactive multimedia.
 - can encourage more productive, more fluid writers

Computers at School: Midterm Grades

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.

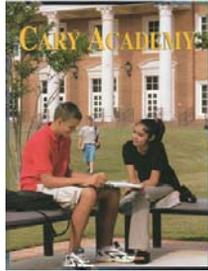
- SAS created Cary Academy
- Cary Academy is an independent, co-educational institution for grades 6-12 that was founded in 1996. We officially opened our doors in August 1997 with 248 students in grades 6-12. Next year we expect to approach full enrollment which is 672 for grades 6-12.
- Cary Academy 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 5,830 employees world-wide 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. Drs. Goodnight and Sall donated 52 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 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

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
E-mail



Personal Information
Management
Programs

Accounting
and
Tax Programs

Database
Programs

Computers Come Home

Smart Cards

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



Computers Come Home

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.

[Google Maps](#)

Computers Come Home

Home Entertainment Redefined

- play games.
- 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!