CS10 : The Beauty and Joy of Computing

Lecture #13
Social Implications of Computing

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Summer Instructor
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DNSCHANGER SHUT DOWN

The FBI busted an Estonian company in November 2011 for infecting over 4M computers with software that redirected access to certain links. A nonprofit operated replacement servers, but finally pulled the plug Monday.

http://bit.ly/MTuoYN

DNS Changer Check-Up

IP

DNS Resolution = GREEN
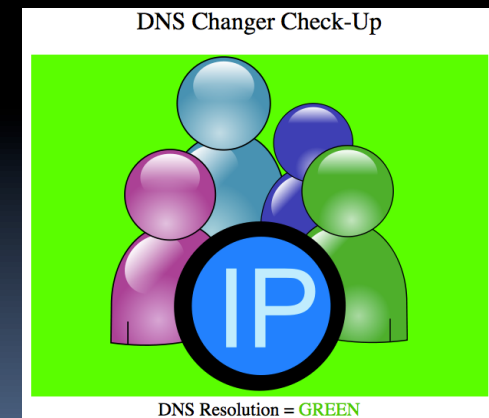
Overview

- **This course is NOT just about programming!**
  - Lecs + Reading: Big ideas
  - Labs: Programming
  - Disc: Distillation
- **CS195 Social Implications of Computing**
- **Computers in Education**
  - Most important use?
  - Judah Schwartz' continuum
  - RSA Animate "Changing Education Paradigms"
  - UC Online Pilot

Peer Instruction
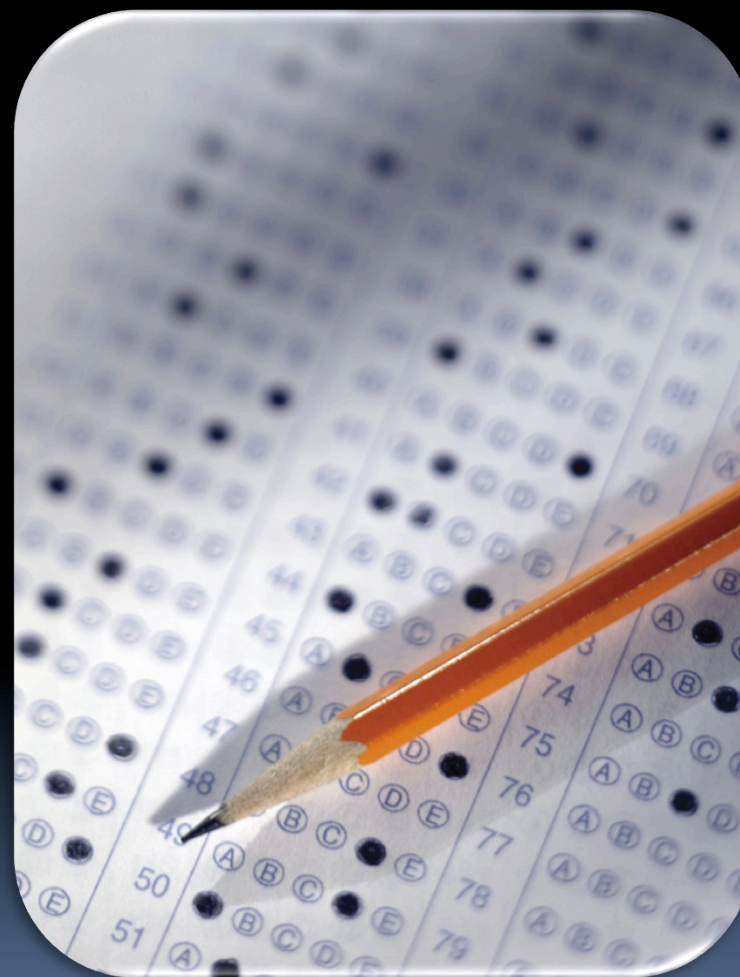
The most important use of computers in education so far…

a) Web search

b) Arithmetic drill programs

c) Word processing

d) iClicker-like technologies

e) Social networking

Answer

"Multiple choice tests have changed what counts as knowledge in schools. Open-ended questions were the norm 30 years ago. The kind of knowledge you can report on multiple-choice tests is unimportant in the big scheme of things, and what's really important is not what you already know, but how you can take what you already know and apply it something you've never seen before. Multiple choice tests make that hard. Teaching follows tests! The folks who invented Standardized Testing didn't foresee how it would affect what knowledge means! (unintended consequence)" – Brian Harvey
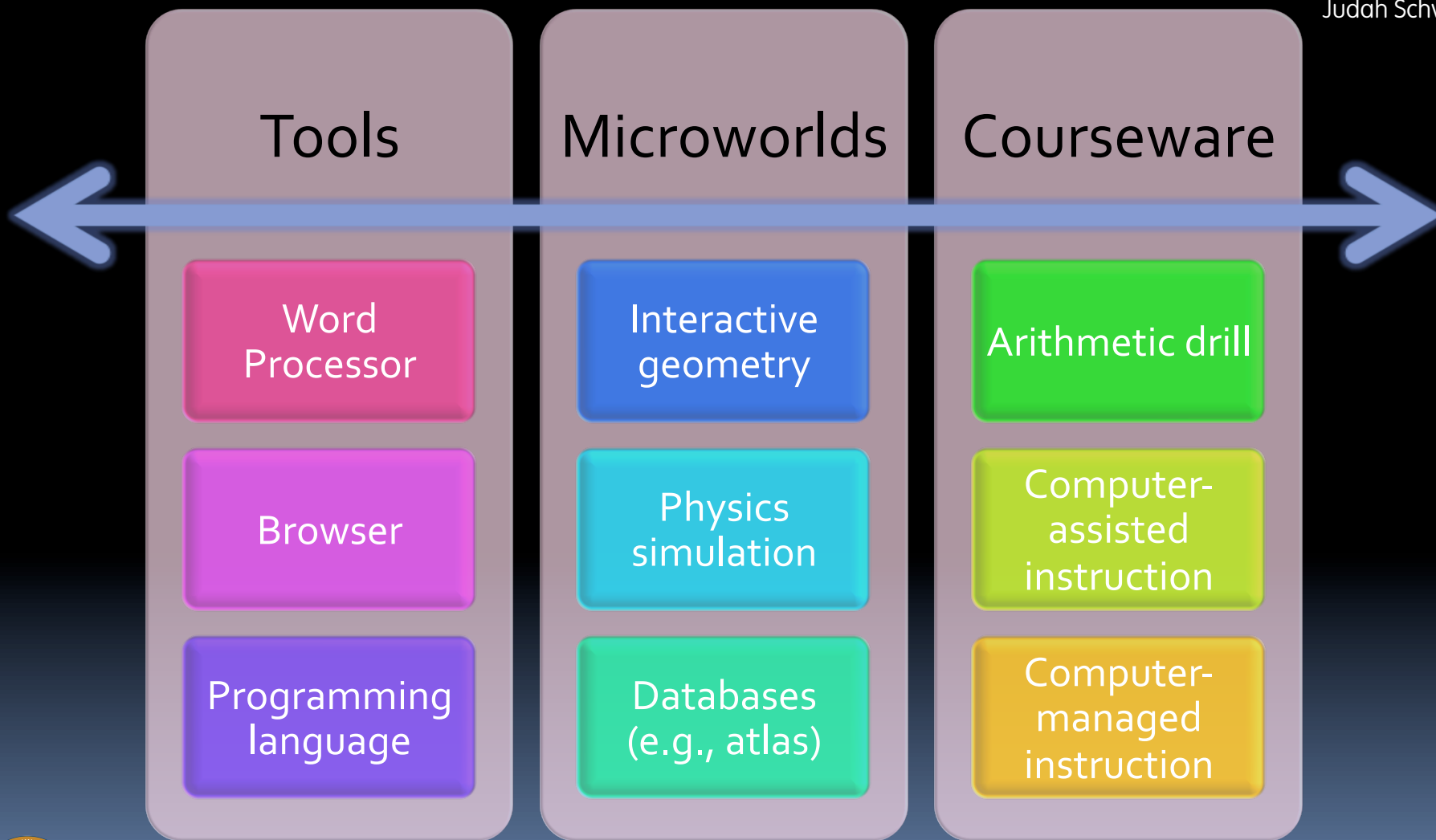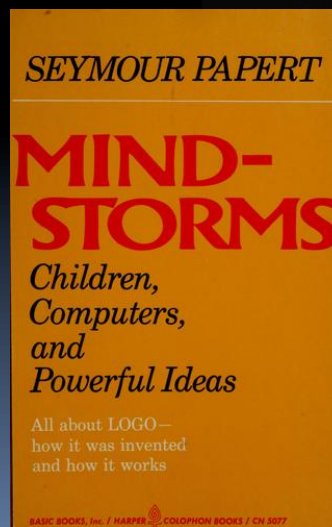
Computers in Education (open?)

Judah Schwartz

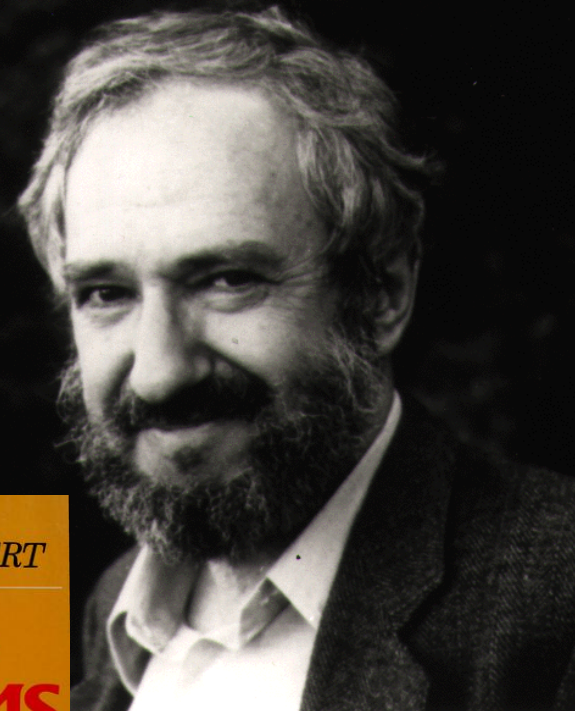| Tools	Microworlds	Courseware
Word Processor	Interactive geometry	Arithmetic drill
Browser	Physics simulation	Computer-assisted instruction
Programming language	Databases (e.g., atlas)	Computer-managed instruction

Myphysicslab demo
ASSIST movie

Seymour Papert - Mindstorms

School teaches that errors are bad; the last thing one wants to do is pore over them, dwell on them, or think about them. The child is glad to take advantage of the computer's ability to erase it all without any trace for anyone to see.

SEYMOUR PAPERT

MIND-STORMS

Children, Computers, and Powerful Ideas

All about LOGO— how it was invented and how it works

BASIC BOOKS, Inc. / HARPER COLOPHON BOOKS / CN 5077

Why should we teach CS?

The debugging philosophy suggests an opposite attitude. Errors benefit us because they lead us to study what happened, to understand what went wrong, and, through understanding, to fix it.

Experience with computer programming leads children more effectively than any other activity to "believe in" debugging.

Papert, *Mindstorms*

Taking CS10 Online

The <u>most effective</u> thing for your learning, if you were taking CS10 online (remotely)…

a) "Test yourself" mini-quizzes

b) Mini-programming challenges

c) Tree-structure interface to lectures

d) HD video archived lectures

e) "Instructor takes the class" videos of us doing labs, HW, exams