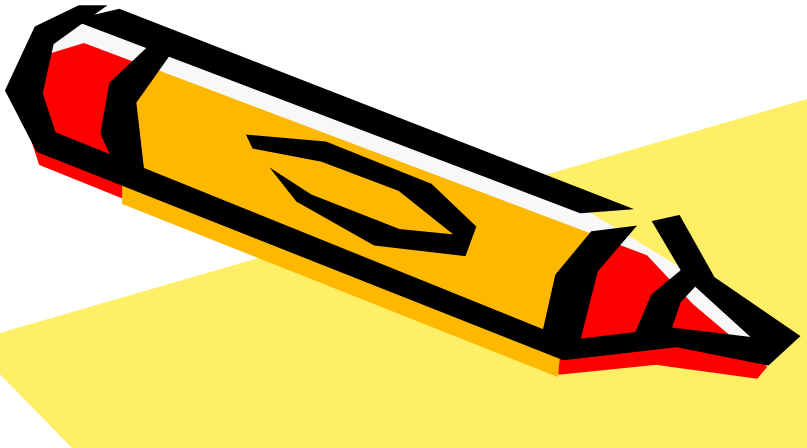


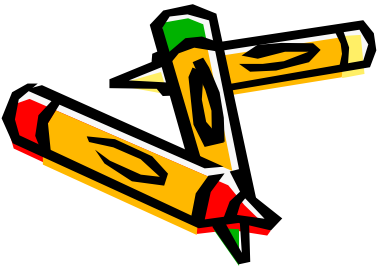
Forced Education: Schools of the Future

Stephen Downes
National Research Council Canada
August 21, 2003

Themes

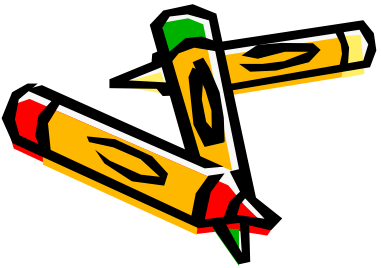
I was asked to speak on…

- The drivers affecting education today, and
- The resulting school of the future…



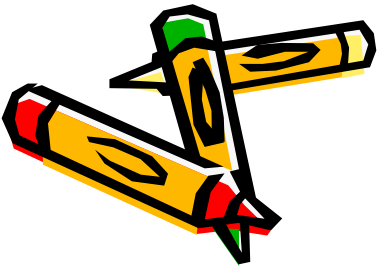
A. Drivers

- The term derives from economics
- Usually seems to mean some sort of external 'force' or 'influence'
- Suggests a cause-effect relationship… *A* happens, and inevitable, *B* happens



The Usual Suspects

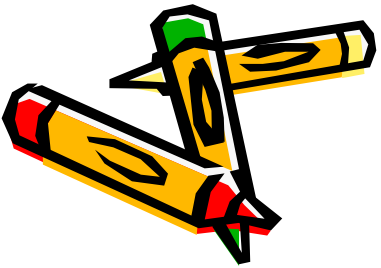
- Drivers are divided into the usual suspects:
  - Technological forces
  - Economic forces
  - Social forces
  - Political forces



Stephen's First Law

… of economics

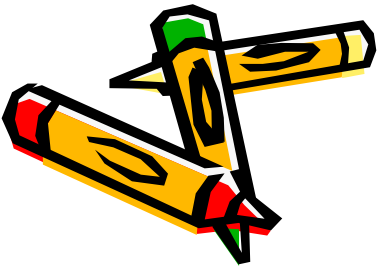
- *Drivers aren't forces*
- Drivers rather express what we *want* (not 'need', not 'desire')
- With few exceptions (flood, famine, pestilence) change is 'driven' by people and their wants



Stephen's Second Law

… of economics

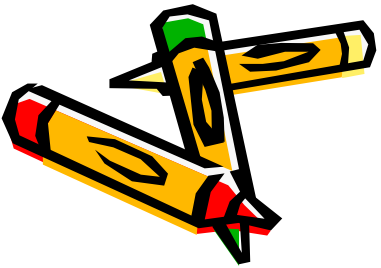
- Drivers are often depicted as unidimensional, but
- *For every driver, there is an equal and opposite backseat driver*
- Well, OK, not equal – otherwise change would never happen
- But, in fact, peoples' wants conflict



Stephen's Third Law

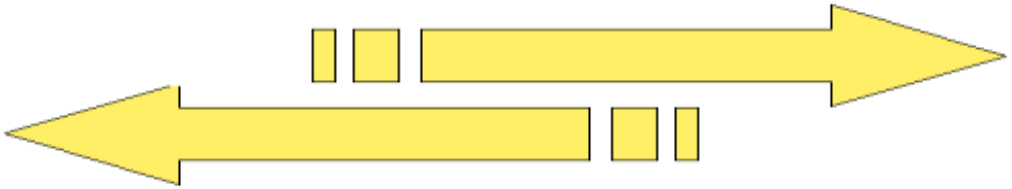
… of economics

- Traditional economics based on supply and demand – but this assumes scarcity of resources
- But we live in a society of affluence
- *In a society of affluence the variables are supply and value*

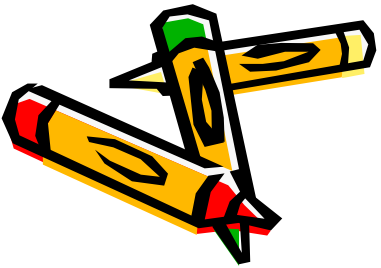


Technological Drivers: Access

Access { People want faster computers
People want more bandwidth

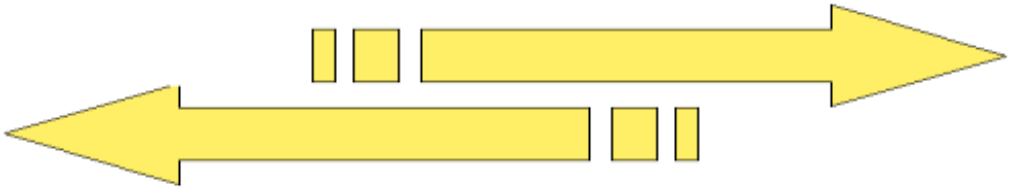


People don't want to buy more
Producers want to profit } ***Accessibility***

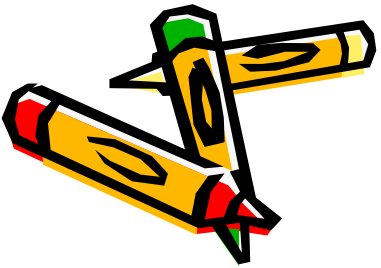


Technological Drivers: Software

Software { Customization, personalization
All the content in the world

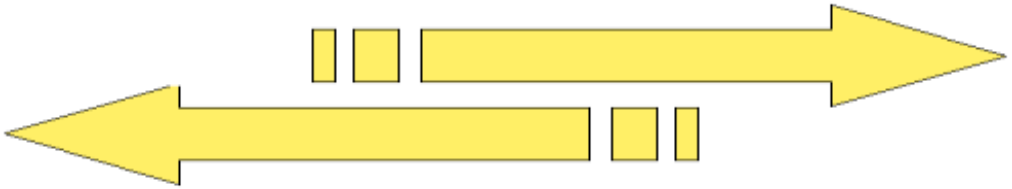


Steep software learning curve
Information overload, chaos } ***Bad software***



Economic Drivers: Value

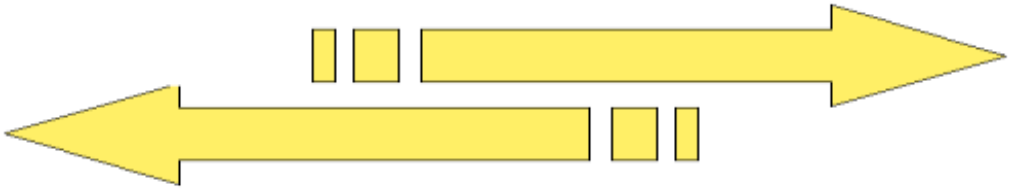
Low Prices { Greater access means lower costs for educational content and services



People depend on making money providing content and services } ***Fewer Jobs***

Economic Drivers: Risk

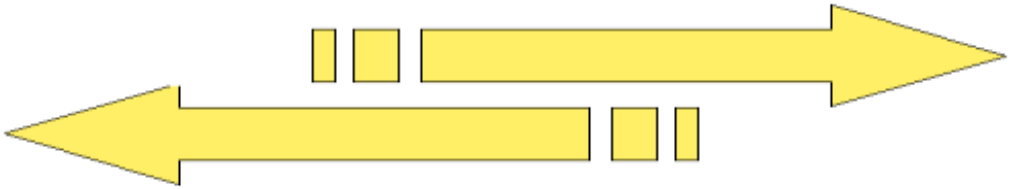
Opportunity { People (or parents) want the opportunities education offers



People are not prepared to sacrifice current security } ***Security***

Social Forces: Universality

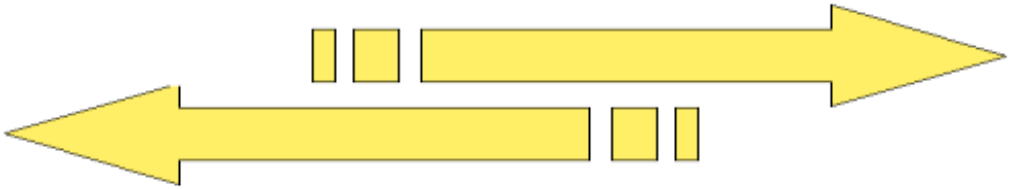
Rights { People want an educated society worldwide, nationwide



People don't want to pay for it } ***Responsibility***

Social Drivers: Freedom

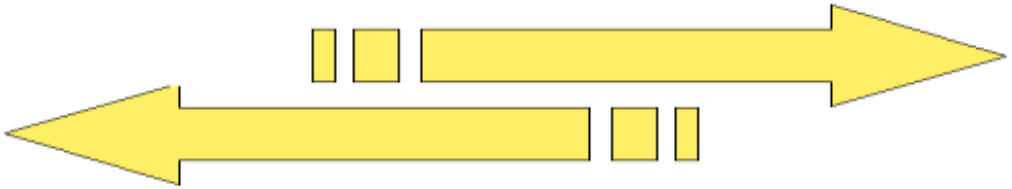
Liberty { People want to choose their own (or their children's) learning



People are afraid of what others will choose } ***Security***

Political Drivers: Standards

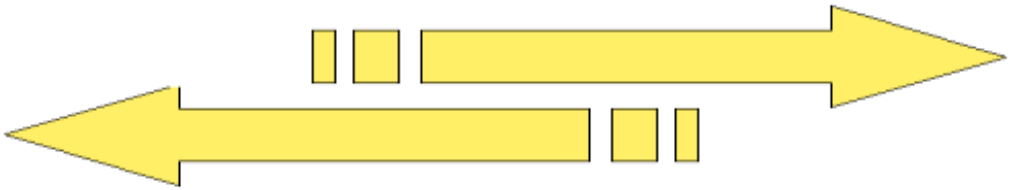
Standards { Opportunity to improve standards



Desire to escape standards } ***Choices***

Political Drivers: Public Education

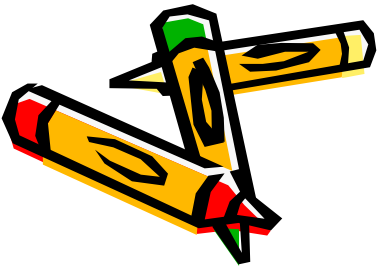
Public { Greater ability to provide education



Less need for public education } ***Private***

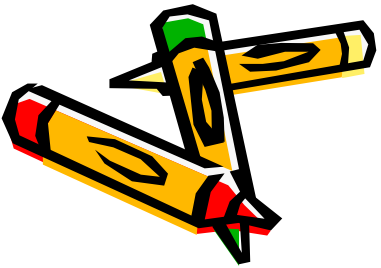
B. Schools

- The debates of the previous section could be endlessly multiplied
- But where does the future lie?
- Is our educational system dominated by forces beyond our control?



Choices

- Of course not…
- We must make choices
- This talk isn't a prediction, it's a guide to making choices



The Matrix

	Supply (driver)	*Value (backseat)*
Technological	Access	Accessibility
	Software	Bad software
Economic	Lower Prices	Fewer Jobs
	Opportunity	Security
Social	Rights	Responsibility
	Liberty	Security
Political	Standards	Choices
	Public	Private

Deciding: A Method

thesis

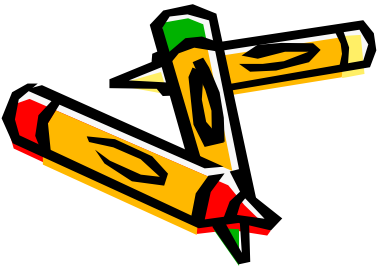
Access

antithesis

Accessibility

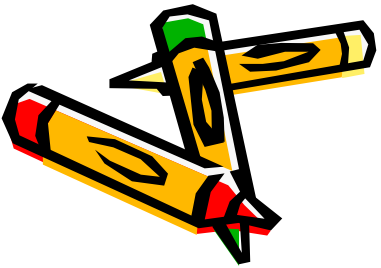
synthesis

ubiquity

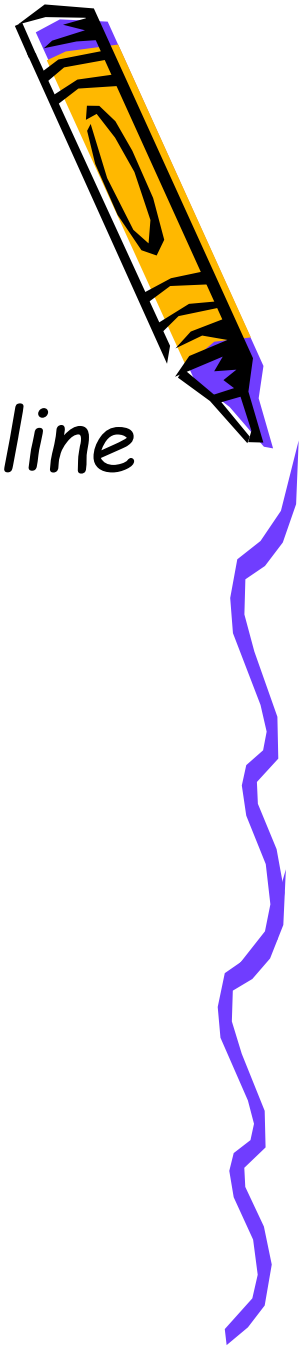


Ubiquity

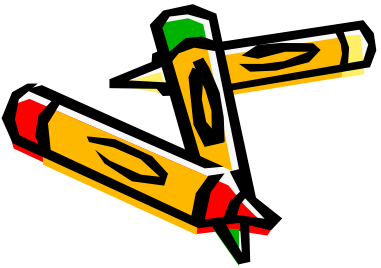
- Computer capacity, bandwidth will continue to increase
- Therefore, accessibility will be an ongoing problem
- But any *given level* of access will become ubiquitous



Tomorrow Through the Past

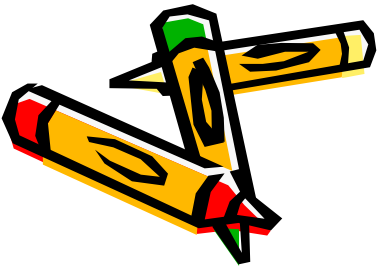


- In 1998 I wrote *The Future of Online Learning* http://www.downes.ca/future/
- These predictions are mostly on target, but we are only part way through the curve

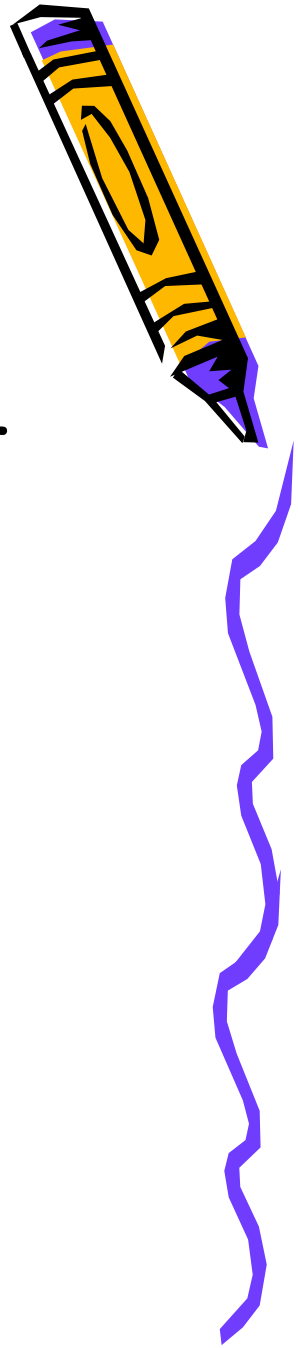


Tomorrow's Technology Today

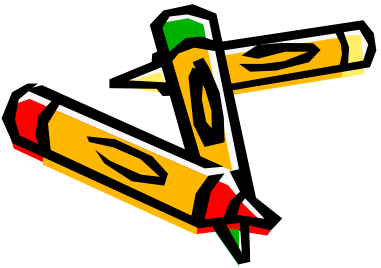
- Bandwidth – broadband spreading
- Computing – gigahertz processing – 64 bit within two years
- Specialized appliances – palms, cars
- OS – stalled in the Windows paradigm



The New Ed Technology Is (Almost) Here

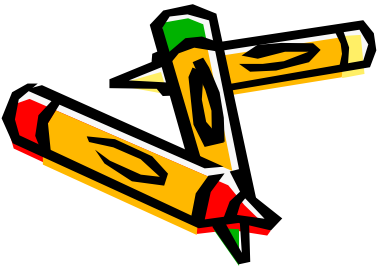


- Wireless – here, needs deployment
- PADS? Tablets… same thing…
- Simulations (yes) and learning environments (no… but…)
- Multimedia – Flash MX a huge leap
- Virtual Reality – tomorrow, still



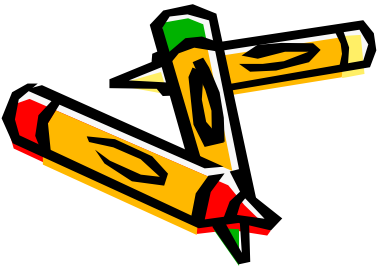
Yesterday's Big (New) Thing: Learning Objects

- I Predicted modularity – the idea of course selection being replaced by course construction
  http://www.downes.ca/future/modularity.htm
- I also described how XML would be used to created module metadata, which would be used by intelligent search agents



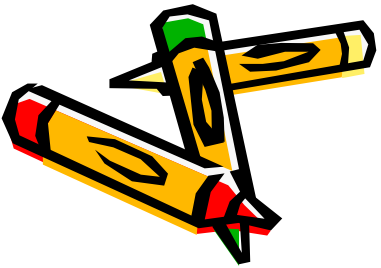
Today's Big (Old) Thing: Learning Objects

- Much disillusionment:
  - The reusability paradox (Wiley) http://www.downes.ca/cgi-bin/website/find.cgi?string=author~David%20Wiley
  - The sterility of SCORM (Friesen) http://www.downes.ca/cgi-bin/website/find.cgi?string=author~Norm%20Friesen
- I argue: we (ahem, they) got the model wrong…



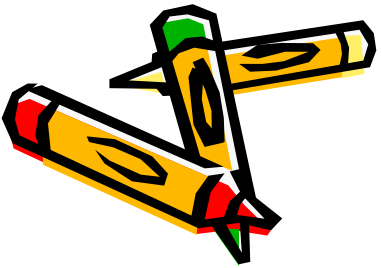
Learning Objects in a Wider Context

- Designers tried to build learning *into* the objects, but learning defined by how the objects are *used* http://www.downes.ca/files/widercontext.ppt
- Designers tried to string learning objects to create courses, but learning objects belong in a learning *environment* http://www.downes.ca/cgi-bin/website/view.cgi?dbs=Article&key=1037890664

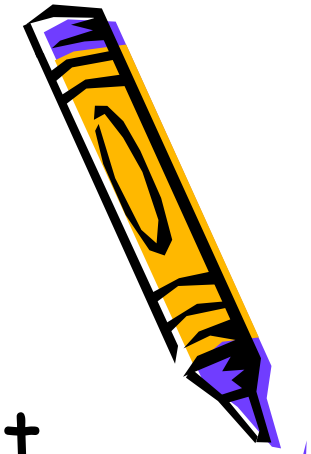


Learning Environments: Still Tomorrow

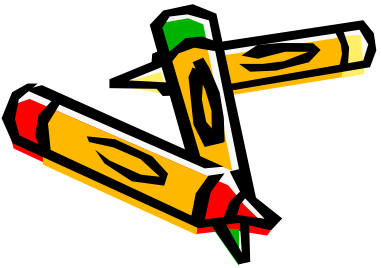
- Learning environments are on the horizon – simulations, blogs, wikis, workplace support
- But they require a change in perspective – from *teaching* to *learning*



What Student Centered Learning Really Means

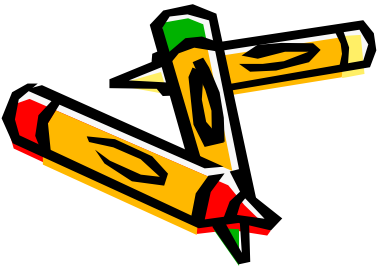


- There was much talk about student centered learning
- But people still want teachers (or computers) to make their decisions
- Tomorrow: students make decisions
  http://www.downes.ca/cgi-bin/website/view.cgi?dbs=Article&key=1012279256



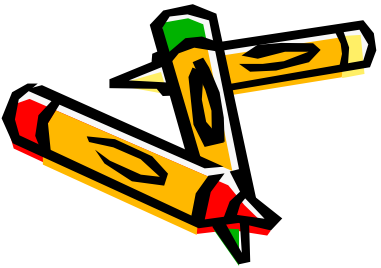
Online Learning: The Dream

- It's hard to imagine, but… http://www.flexiblelearning.net.au/nw2000/main/4-30debate2.htm
- Center learning around activities, not topics
- Base learning decisions on need (event driven), not authority (time or sequence driven)

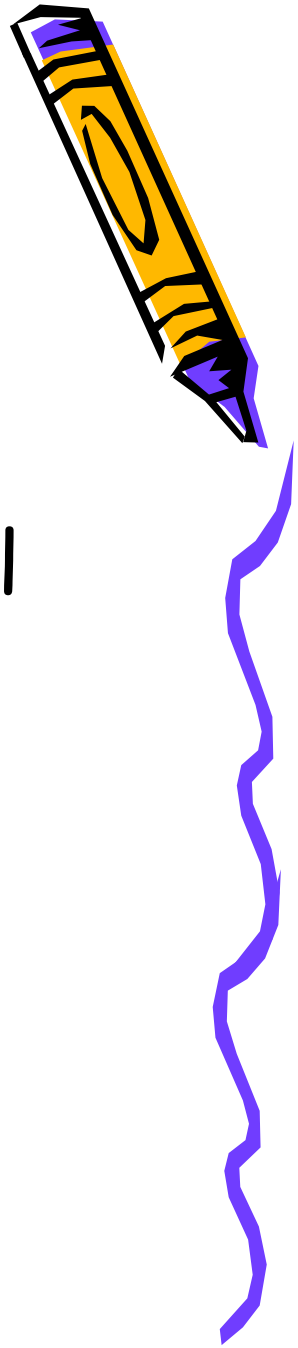


So Where Is The Teacher?

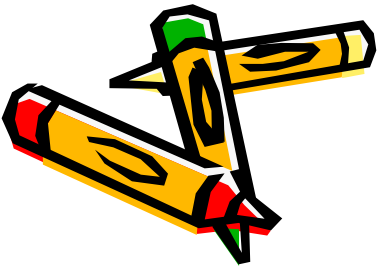
- Will the teacher be eliminated?
- No, but… teachers become, variously:
  - The subject matter expert
  - The mentor or coach
  - The conversation facilitator
  - The instructional designer



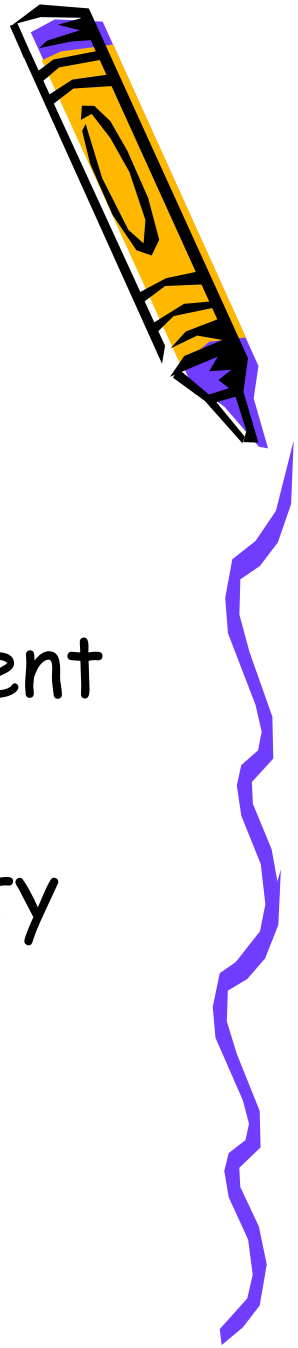
Toward Client Based Teaching



- Over time, teachers will specialize
- They won't have students, they will have clients
- Students access a *network* of teachers, resources, peers…
- (Teachers as learning objects?)



The End of The Great Schism



- Students will begin in simulated environments…
- But as they mature, this environment will become more real…
- Seamlessly transitioning into reality

http://www.downes.ca/files/Online_Learning.ppt