MARICOPA COMMUNITY COLLEGES

Back to the Future: After WYSIWYG…the Next Killer App!

Carl Berger

Back to the future...

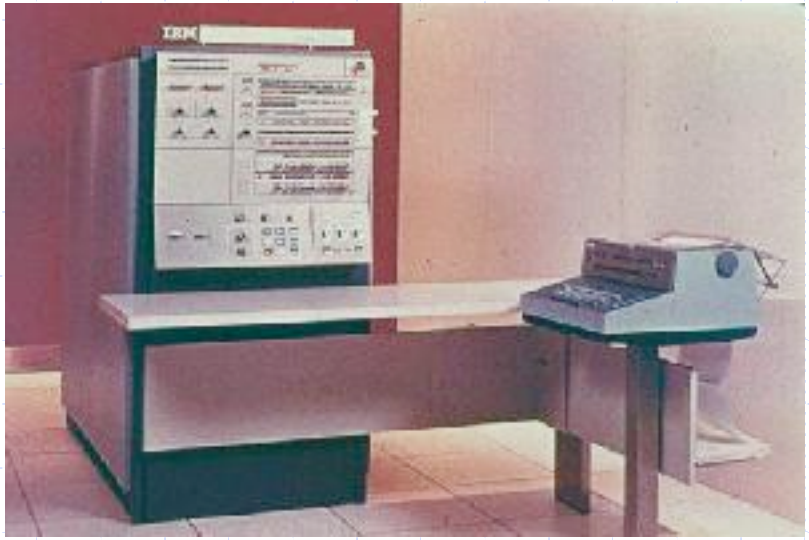
- Using the past to predict the future
- How well did we do--
- 20 years ago 1982
- 10 years ago 1992

The future university…

- Can we use some research (and a little whimsy) on users to help predict--
- 5 years from now, 2007
- 10 years from now, 2012

What did we predict

- Detroit Iron
- Mainframes
- Football



What can't we predict

The Big Three

Microcomputers

Penn State in the Big 10!

What of the one of the best ‘killer apps’

- Remember the good old days of word processing?
- this should come out bold
- Then came….

WYSWYG!

- 1984…
- Wee Mac
- 15 fonts

Technologies and Products

- Wireless, Storage, Insulation
- Integrated admin systems; SCT, PeopleSoft
- Standards; IMS, SCORM, iCAN
- Open source learning systems; OKI, CHEF
- Research Tools; WorkTools, SPARC, GRID
- Learning Objects; MERLOT, LOE
- Learning systems; OKI, CHEF, ANGEL

What we can predict

- Increase in push as well as pull
- Redundant databases
- Integrated Research, Teaching, Learning
- WINWINI
- The next ‘Killer app’
- But what does it mean for education?

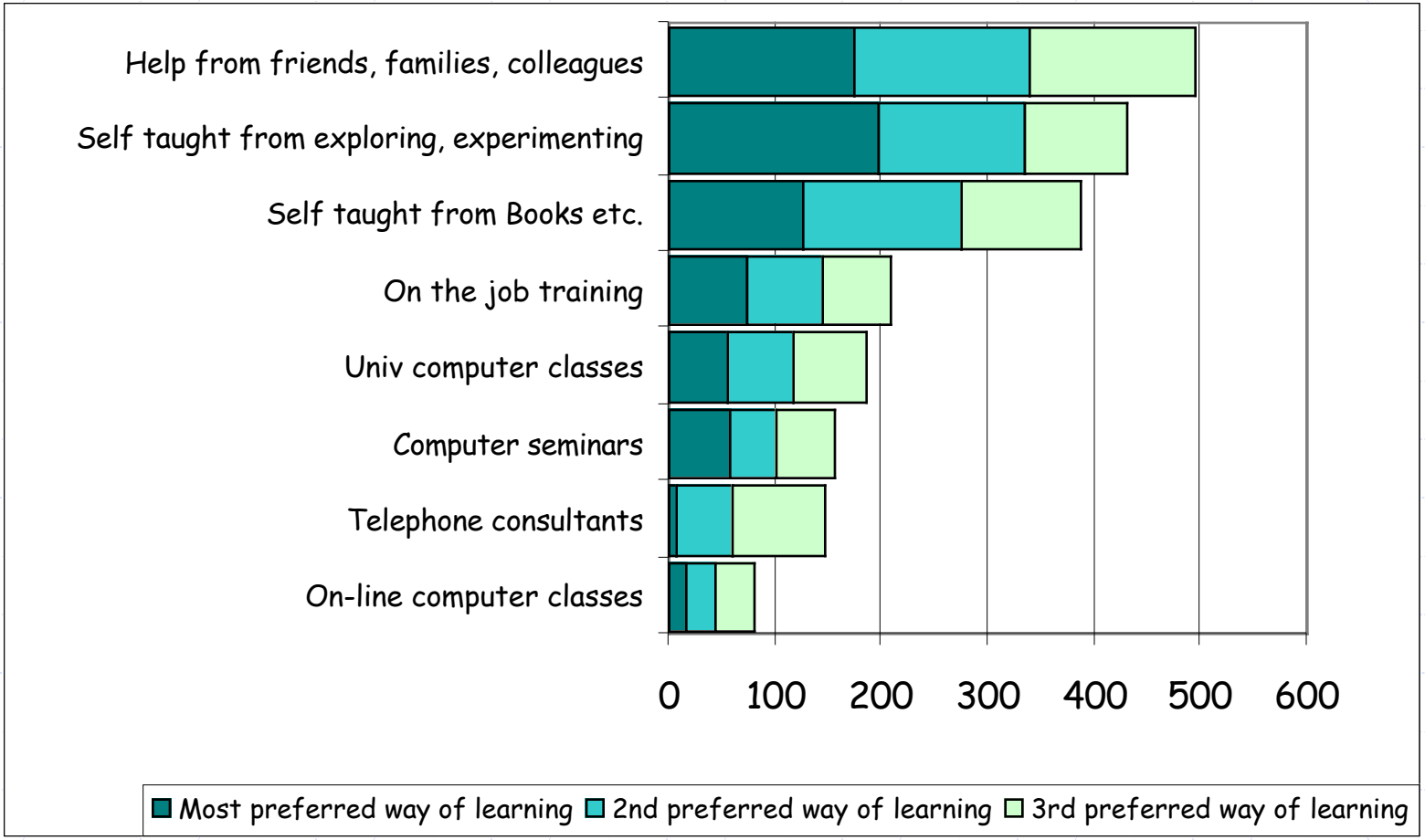
How can we predict the future?

- Just as prior knowledge is the best predictor of learning……
- Let's use data
  - Ask them…
  - A little research
  - A little whimsical interpretation and …
- Some unexpected events

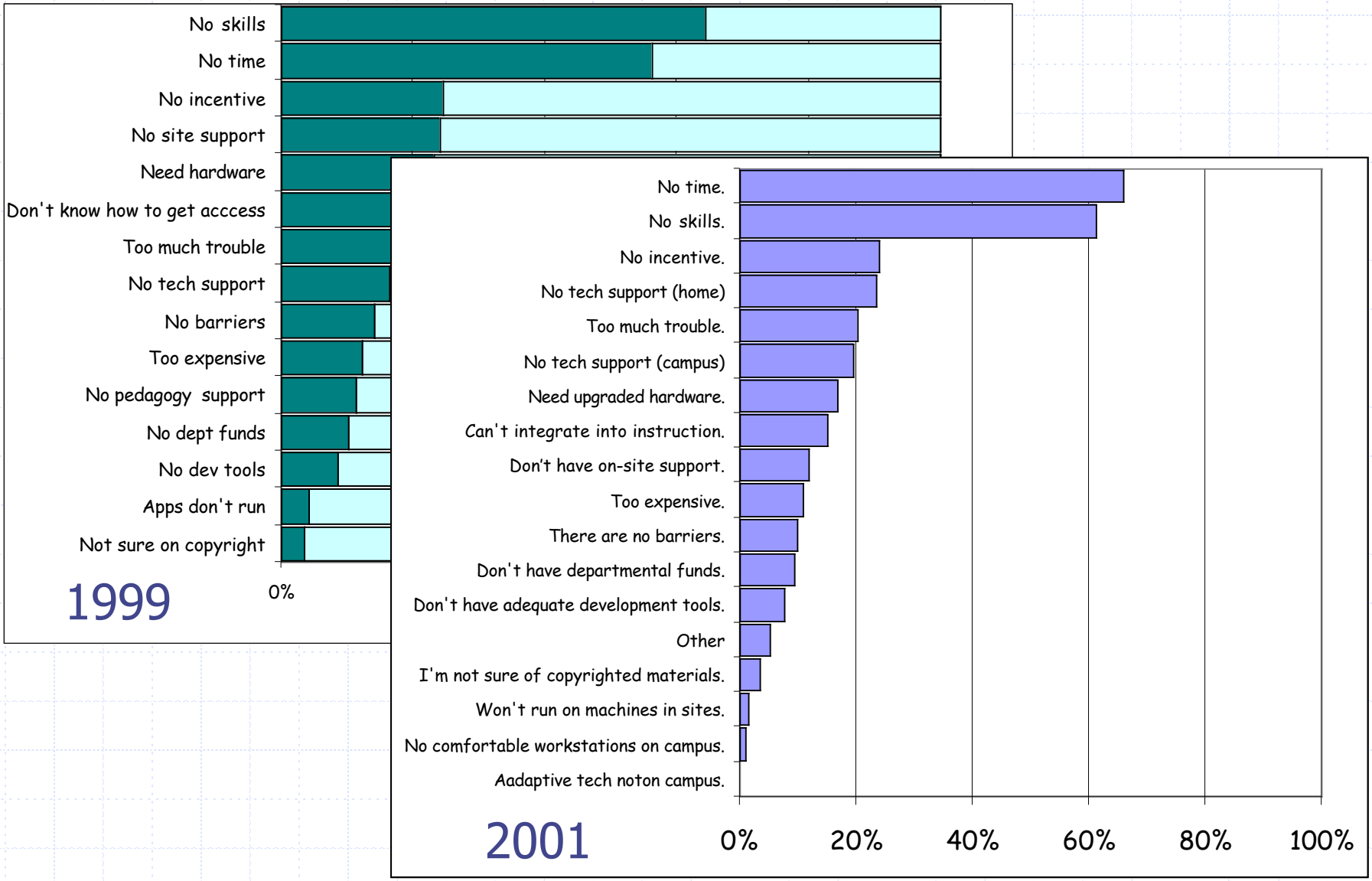
Ask them…our faculty survey

- 1,500 of 6,000 faculty
- 743 responses
  - Largest group from the health sciences
- 17 Schools and colleges
  - Health sciences include Med, Nursing, Dental, Pharmacy, Public Health
- Asked for
  - What they use,
  - How they like to learn to use it,
  - What you would like to use,
  - What you need to do it.

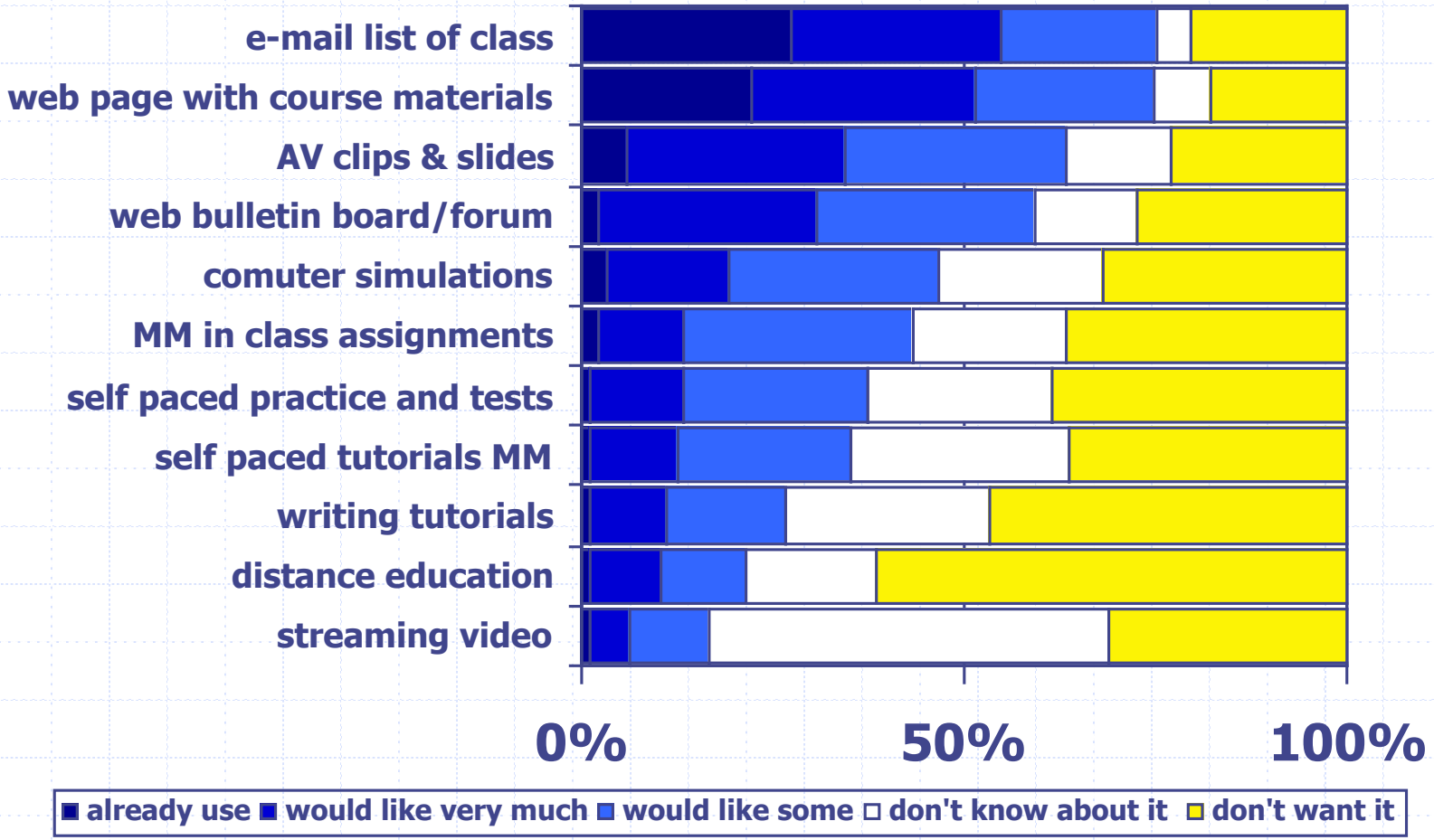
How do you want to learn....



Barriers to use...



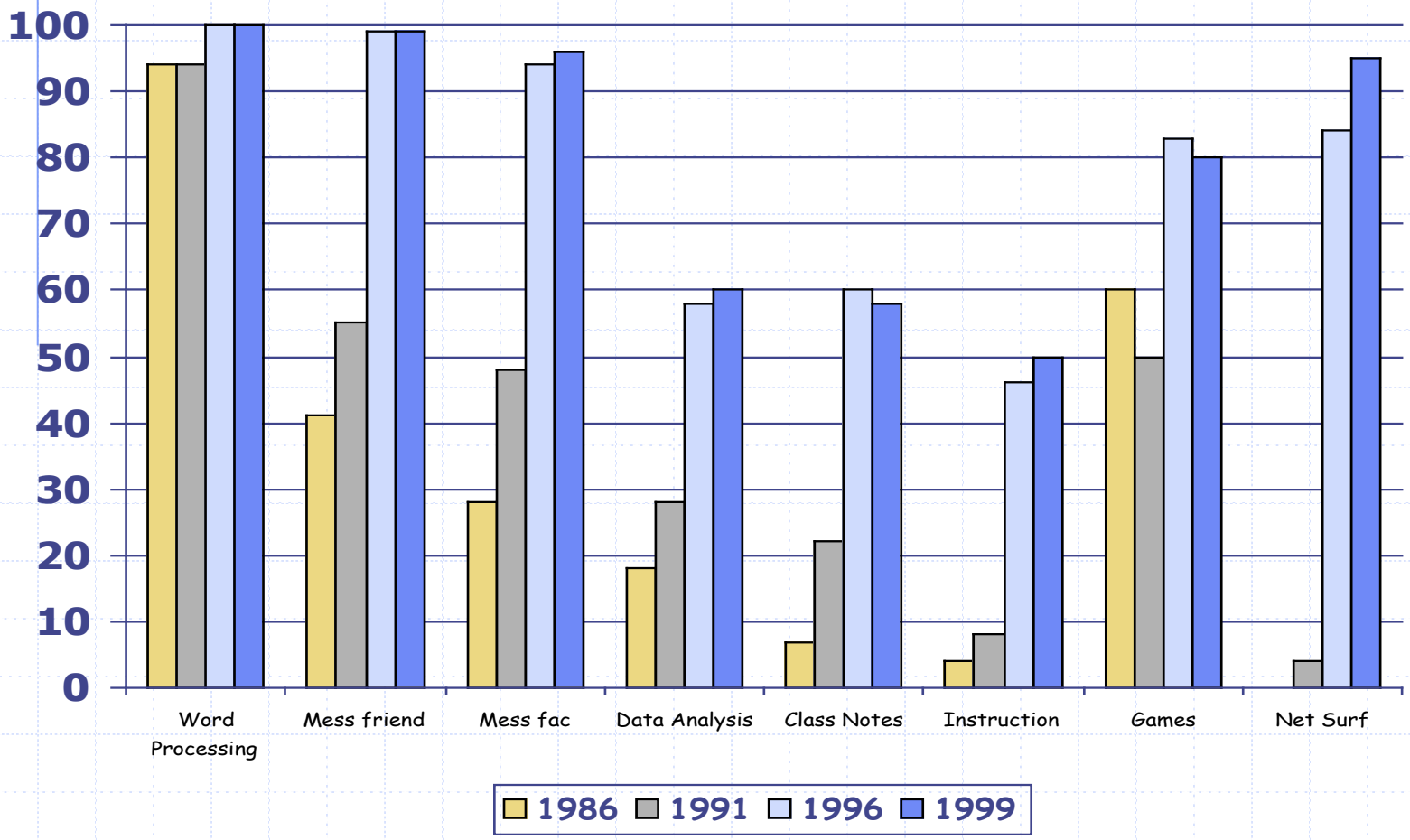
What do you need/want to use...



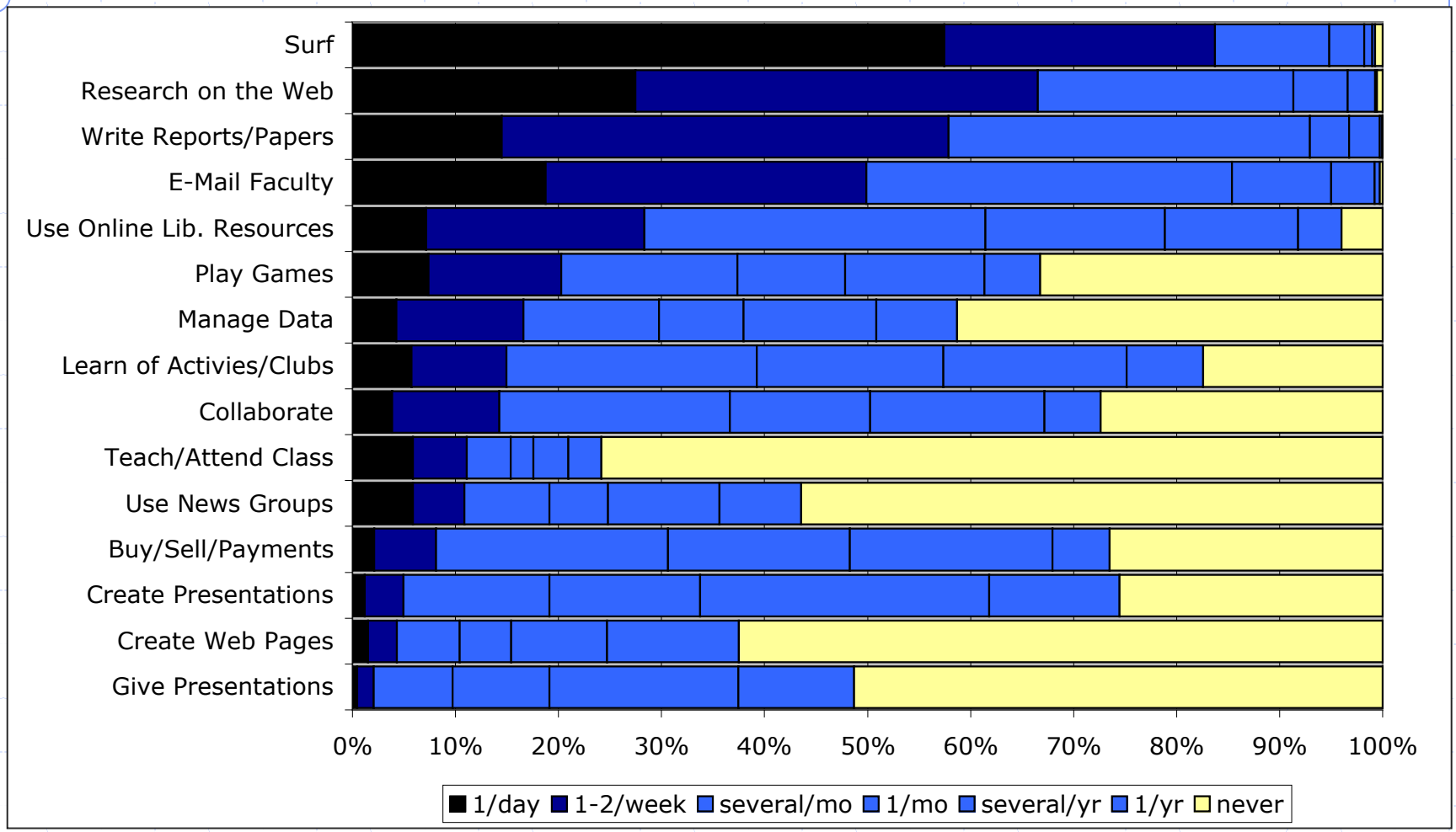
Ask our students

- Started in 1986
- Every two years
- Frosh through seniors
- About 400/year

Proportion of students who use…



How often do they use it…2002



A little Research...

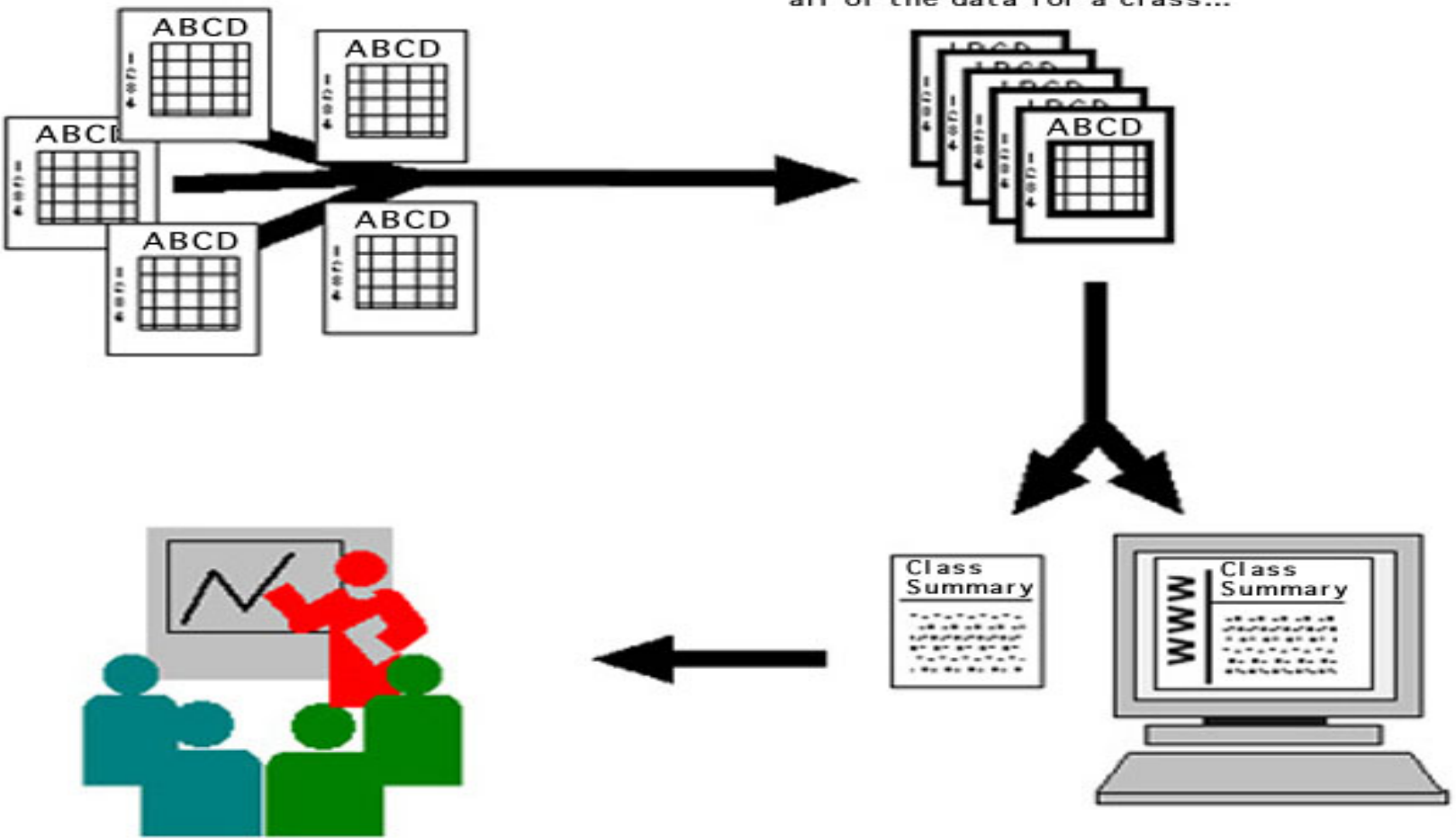
- Real differences
- Cognitive, Behavioral, Affective
- Changes over time
- Learning differences

CoLabInq

- The purpose of this study was to find if an introductory chemistry collaborative laboratory course had any impact on collaboration, laboratory experience and inquiry skills and how students changed as they worked though the course

Students make observations in laboratory and record their observations individually or as a team in a database form ...

... and the database organizes and combine all of the data for a class...



... into a document that is printed out or posted on a web page ...

... to allow students in the class to analyze and make conclusions based on an entire class data set rather than just an individual data set.

The CoLabInq Survey

This questionnaire has been designed to measure your perception of your knowledge, experience, and confidence on various items.
With each statement are three indicators of your involvement. For each of the questions indicate how you feel about your knowledge, experience, and confidence.
Example:

	knowledge					experience					confidence				
	low				high	low				high	low				high
Change a flat tire.	1	2	3	4	✔	1	2	✔	4	5	✔	2	3	4	5

This would mean that I have a great deal of knowledge (response of 5) about changing a flat tire, I have an average amount of experience (response of 3) with changing a flat tire, but I am not confident (response of 1) in my ability to change a flat tire.

The first seven statements

Circle one number in each of the three boxes.

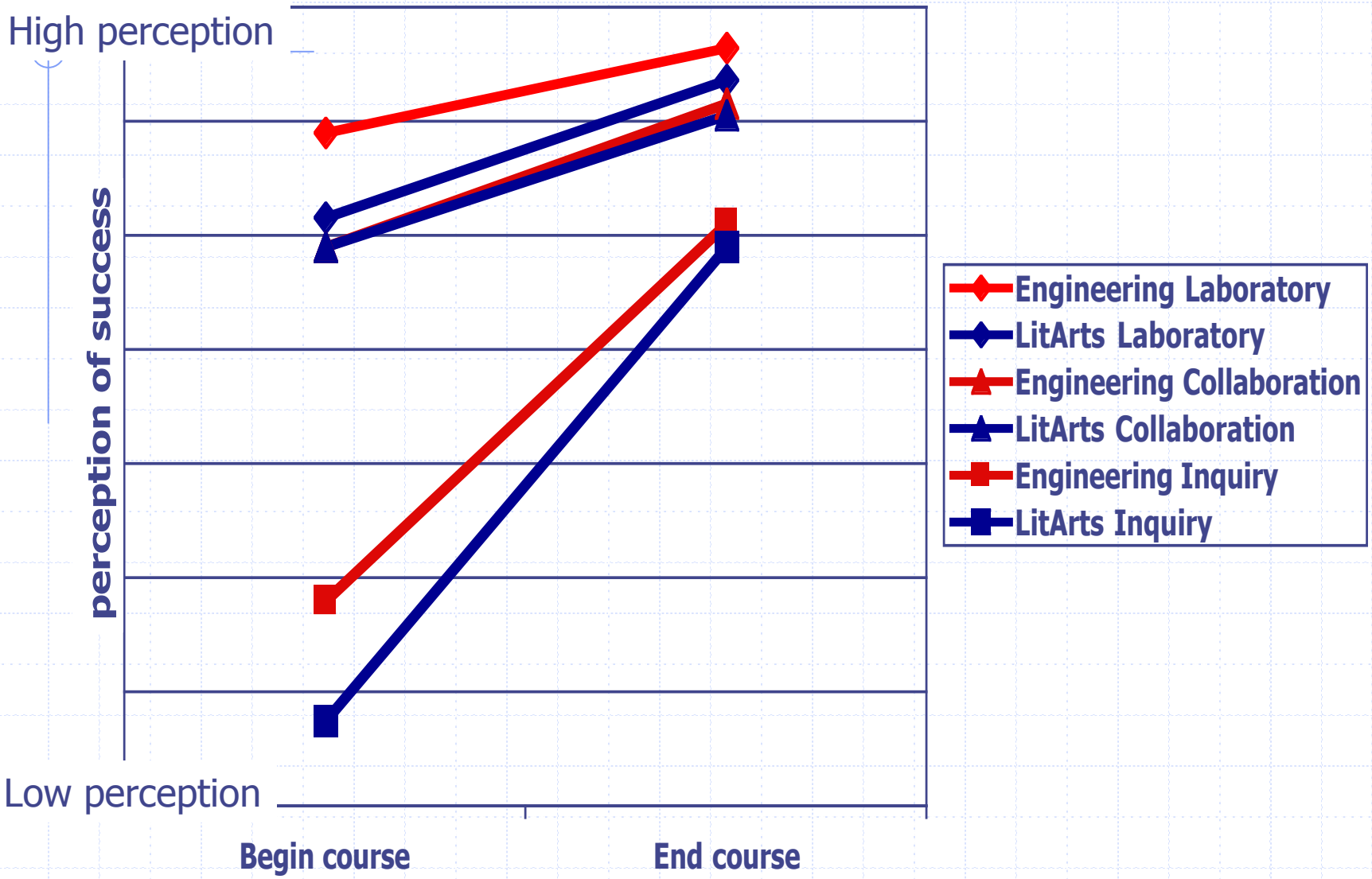
	knowledge					experience					confidence				
	low				high	low				high	low				high
1) Analyze data to reach conclusions.	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
2) Propose a hypothesis to account for an observation.	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
3) Design an experiment to test a hypothesis.	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
4) Use conclusions to make predictions about untested situations or samples.	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
5) Construct graphs to visualize data	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
6) Contribute ideas to group discussion.	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
7) Obtain information from a chemical reference book.	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

What we looked for...

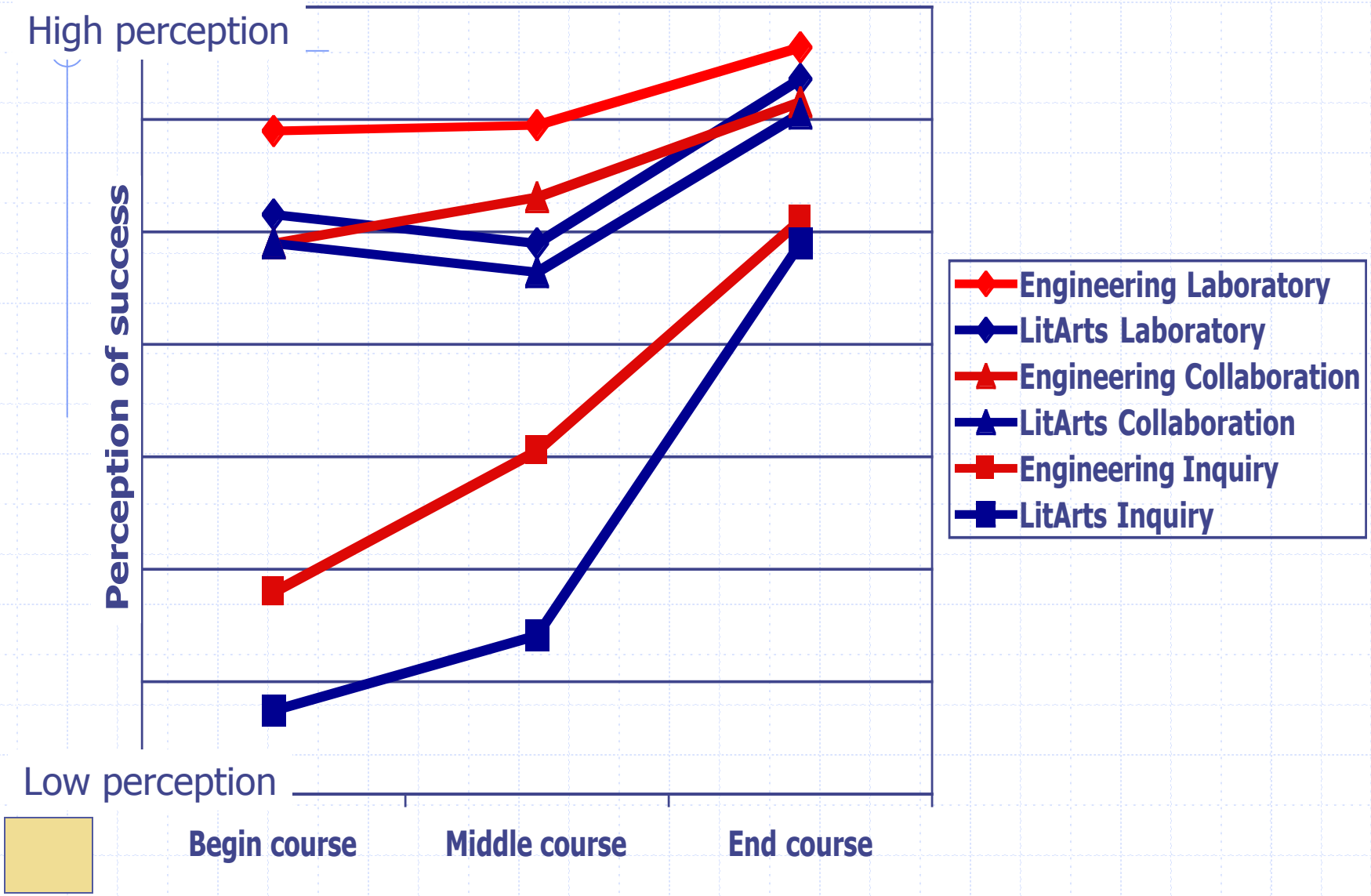
- Differences in Laboratory work, Collaboration and Inquiry
- Differences in Schools and Colleges
- Differences in Gender

- We *didn't* look at experience, confidence and knowledge…
- That's another story, almost as exciting!

Results


High perception
perception of success
Low perception
Begin course
End course
Engineering Laboratory
LitArts Laboratory
Engineering Collaboration
LitArts Collaboration
Engineering Inquiry
LitArts Inquiry

Even more surprising!



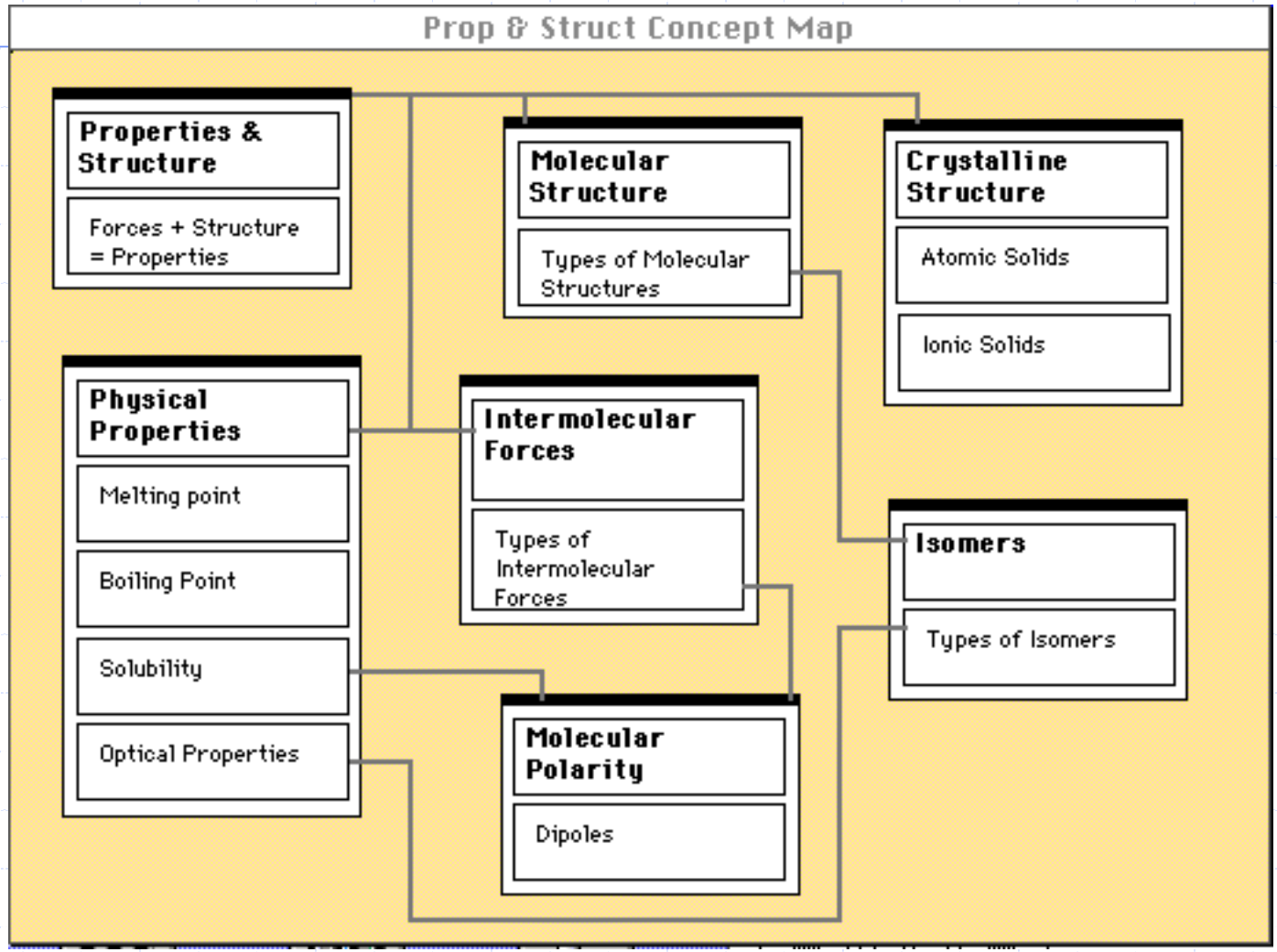
But will student learning change?

- Yes, we just saw differences for different groups but what about---
- Multimodal
- Learning patterns
- Time on task
- Let's look at "Seeing Through Chemistry"

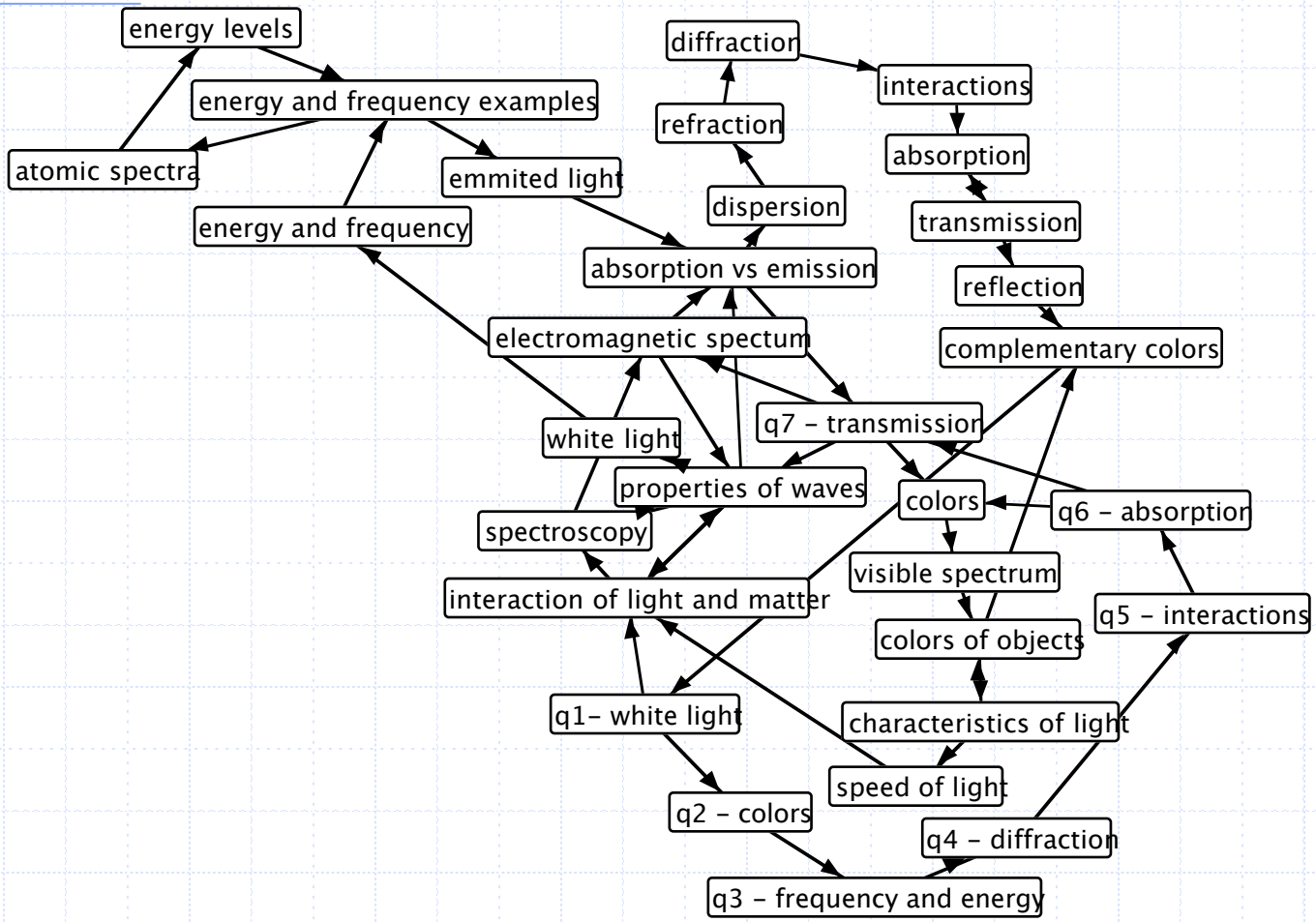
Six modules containing...

- Video
- Animation
- Simulation
- Text
- Images
- Focus questions
- Inquiry questions...

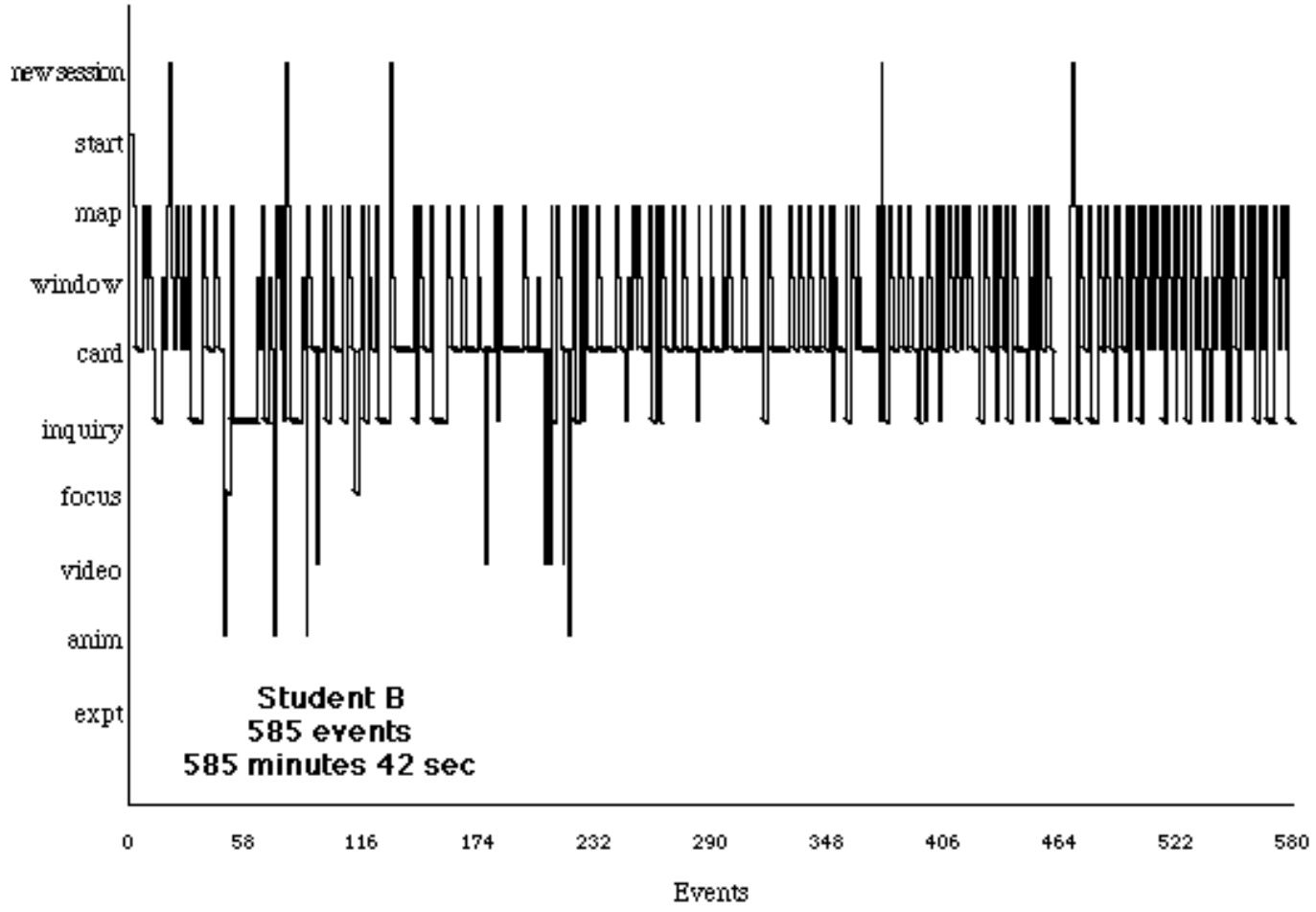
And a concept/navigation map



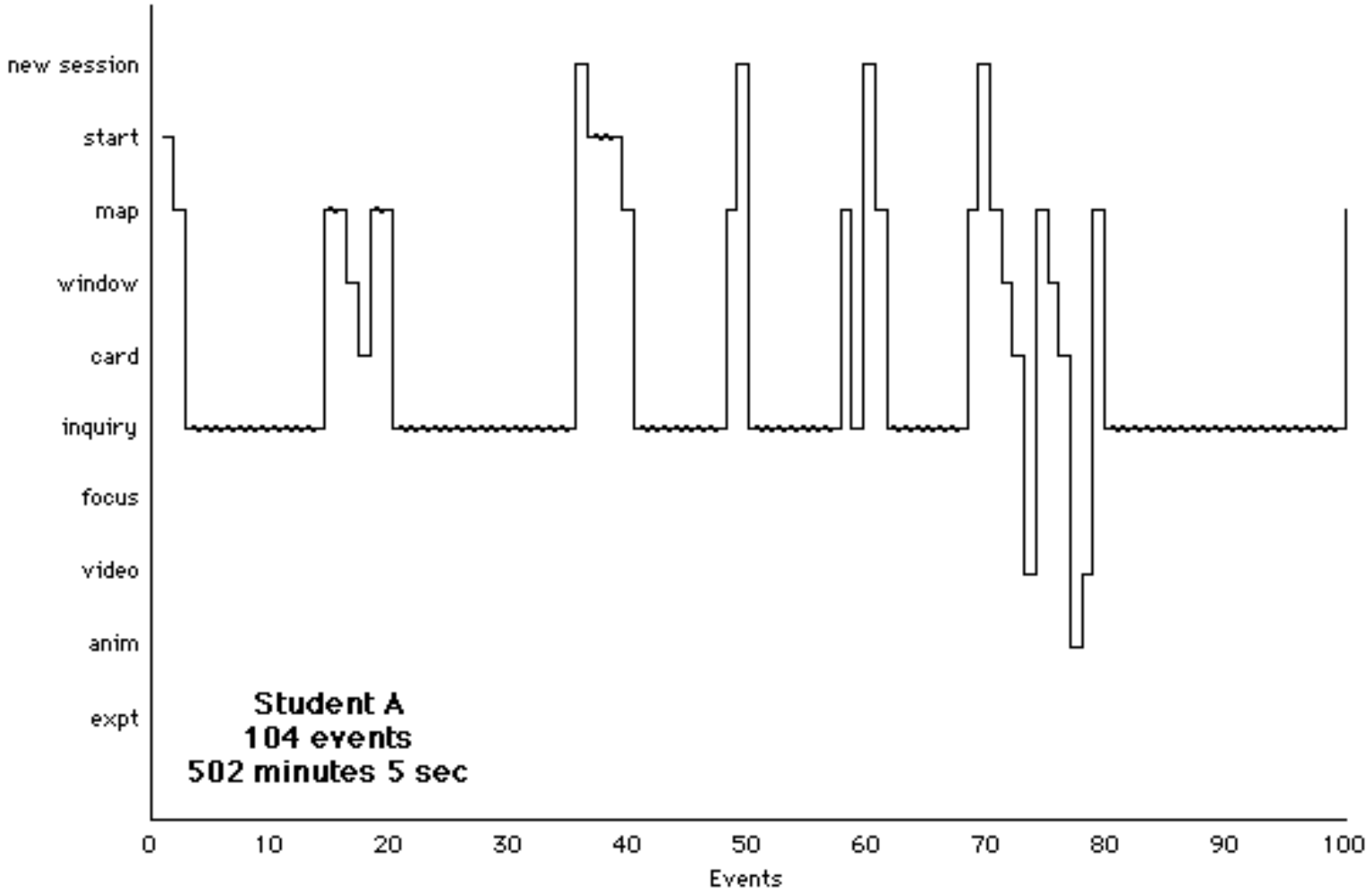
For they do learn differently



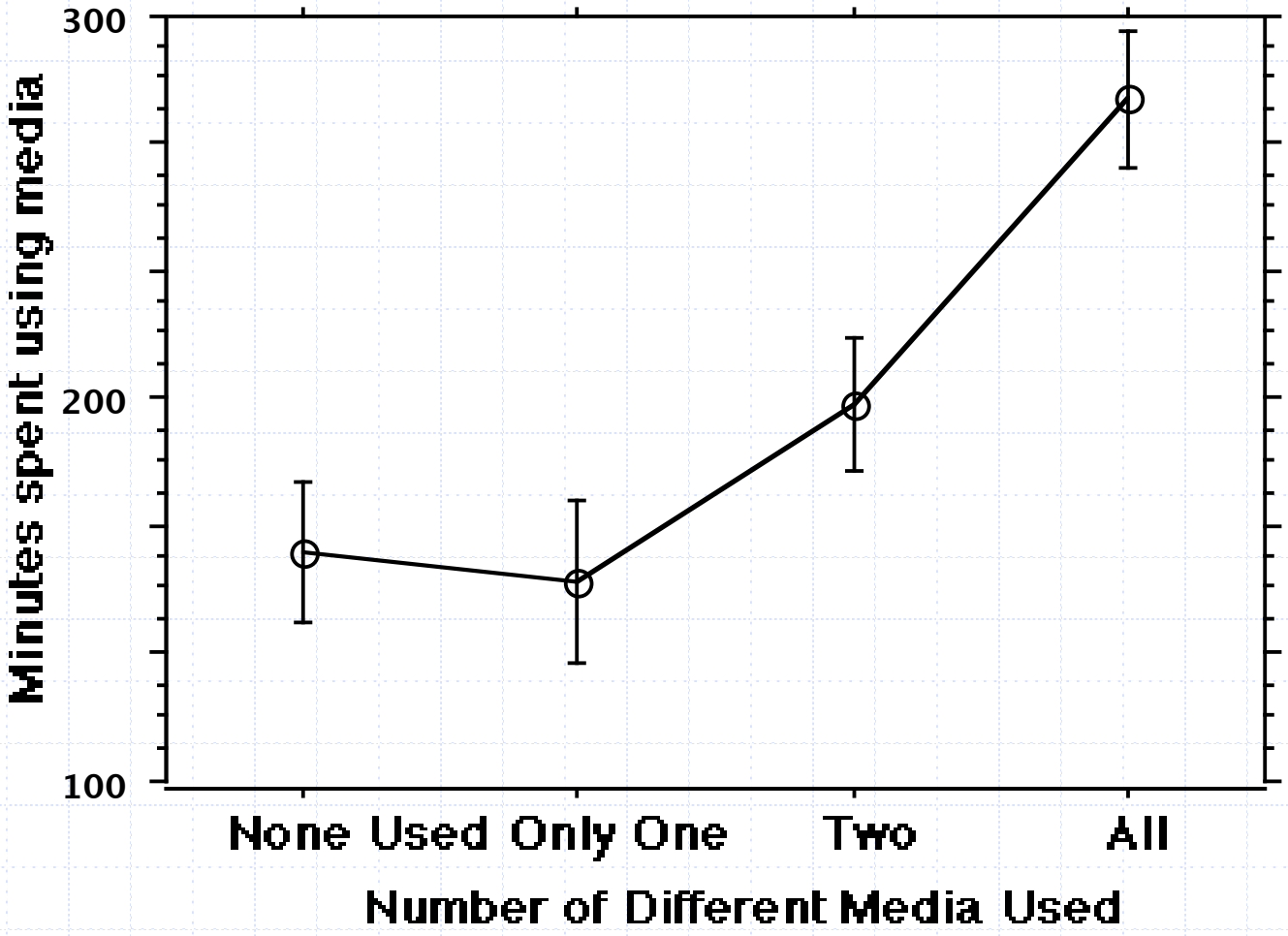
Student A… (surfing or MTV?)



Student B... (inquiring or “Sesame Street”)



And they're willing to spend the time...



So… what can we predict?

- WINWINI
- Wireless
- Ubiquity
- Need for differing teaching styles
- But not to match learning styles
- Teaching, learning and research teams

Vision

- Technology but…
- Based on changes in teaching and learning
- And support
- An integrated picture from the student view.

The Real Processor (vision)

- On a beautiful fall day, Maria Jones walked onto campus carrying her usual "stuff." Stacked in with a book, a clipboard, and a magazine was Maria's 8-by-10 inch "minibook" computer, playing 'Hail to the Victors.'

Reaching into the stack, Maria took out the minibook and looked at the exposed flat screen. She noticed that one of her classmates had sent the charts for a class presentation later that day.

"Whoops, something wrong here," she thought and started looking for a bench to sit down.

Rather than playing as the result of a reminder that Maria had set earlier, her computer was playing because she had come into the proximity of and triggered receiver about one hundred feet away, which interacted with the main server and then sent information about her courses for the day to her minibook.

Maria sat down and cantilevered the screen upward to reveal a full keyboard underneath, which automatically slid open to full size. She tapped the "Library" icon on the screen and typed in a message. Within seconds, conversing with a librarian, she knew that what she wanted was available, were it was, and how she could get it. Moving into the stacks, she retrieved the book... stopped and downloaded a PDF she saw on the opposite shelf, and interacted with the 'online-live' librarian. Sniffing the stacks one last time and thinking about how the old ways were best, she left the building.

In the warm shade… She sat, finished correcting the problem and closed the minibook.

A clear chime rang, not from the belltower of the quadrangle but from her minibook. She closed the mini, yelled at Ira to wait up, and started yet another normal day. Although Maria didn't really care about or understand the technology involved, she was deep in the next 'Killer App' … the Real Processor

CourseTools Next Generation

Sep 05, 2002 12:33 pm

My Workspace | Teaching with Technology | Eval research | MERLOT

Worksite Home

- Home
- Schedule
- Announcements
- Resources
- Discussion
- Chat
- News

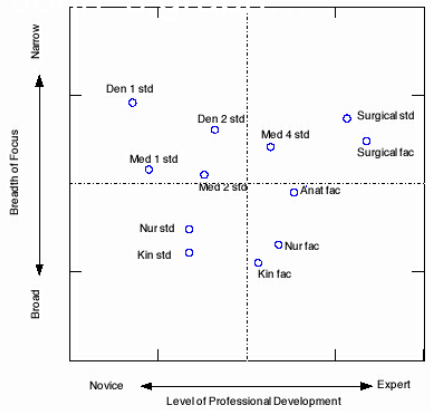
Logout

Customize

Users Present

Carl Berger
Maria Smith
Silvia Lee
John Leasia
Zhen Qian
Kim Bayer
Ron Bleed

John's graph



address book

go to full view

Miller, John
Kost, Karen
Mcdonald, Scott

Add a new person.

URGENT!

go to full view

Hello Maria

Check your virtual dissection of Eve. Make sure that you can identify and remove the tumor on the trigon.

Here is the graph your study group is working on. John made these changes...

Respond?

Schedule

go to full view

Assignment due in ED 603
Collaborative virtual group meeiting a 3:15 today for Med723!
Grade ready on the bladder function.(**Looks good Maria!**)

Click here for librarian

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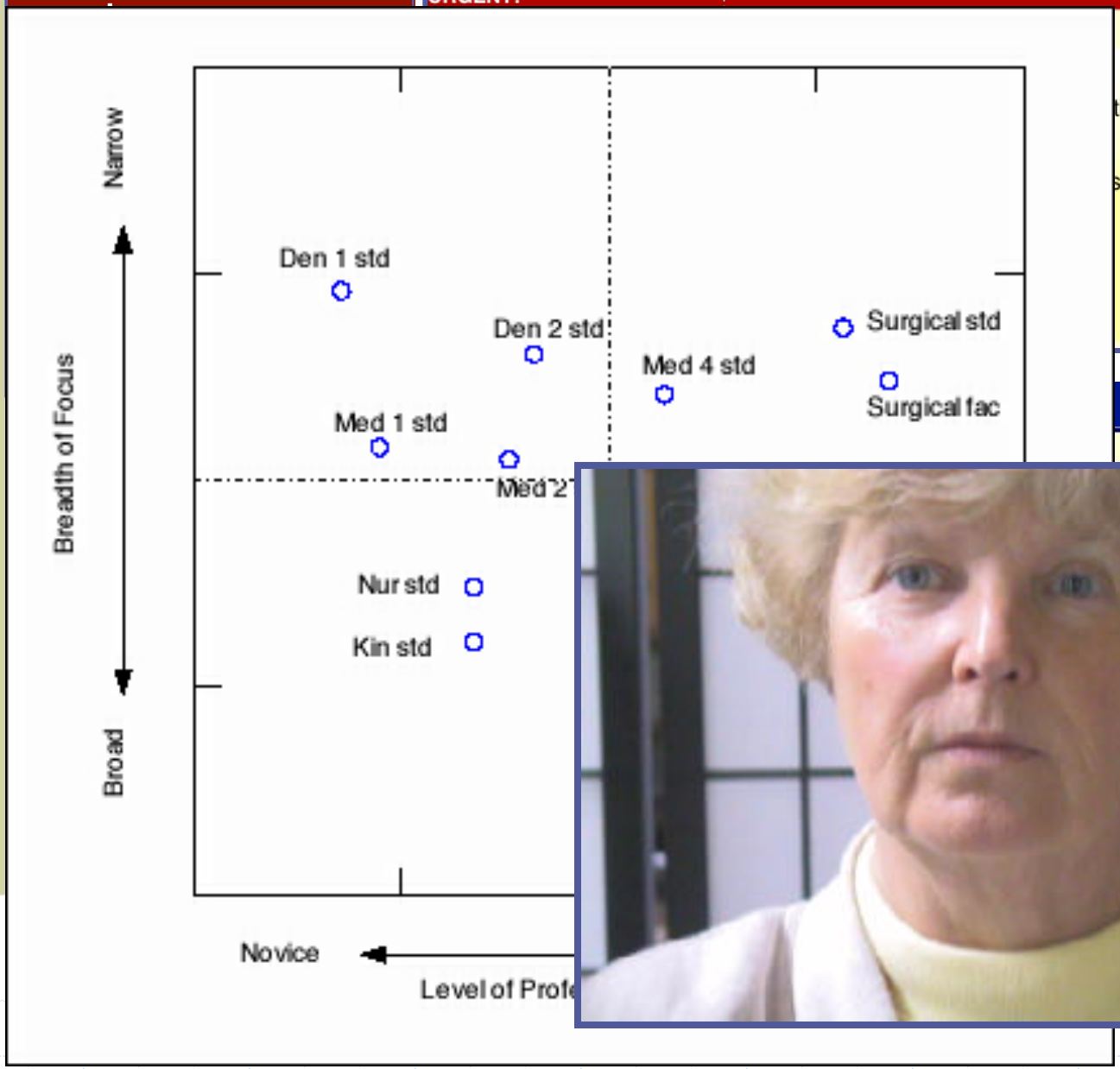

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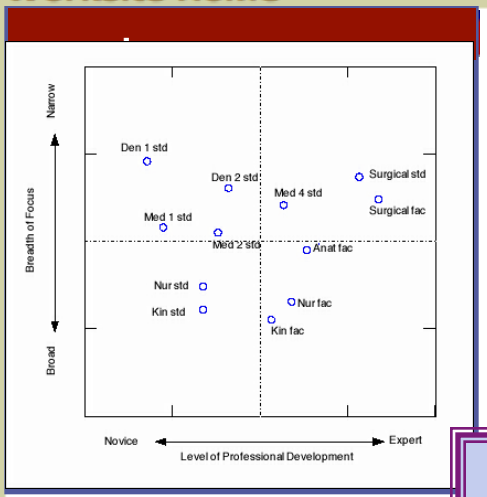


URGENT!

go to full view

Hello Maria

Check your virtual dissection of Eve. Make sure that you can identify and remove the tumor on the trigon.

Here is the graph your study group is working on. John made these changes...

Respond?

Sent to John Miller….

Don't Go Yet! Click Here!

address book

go to full view

603

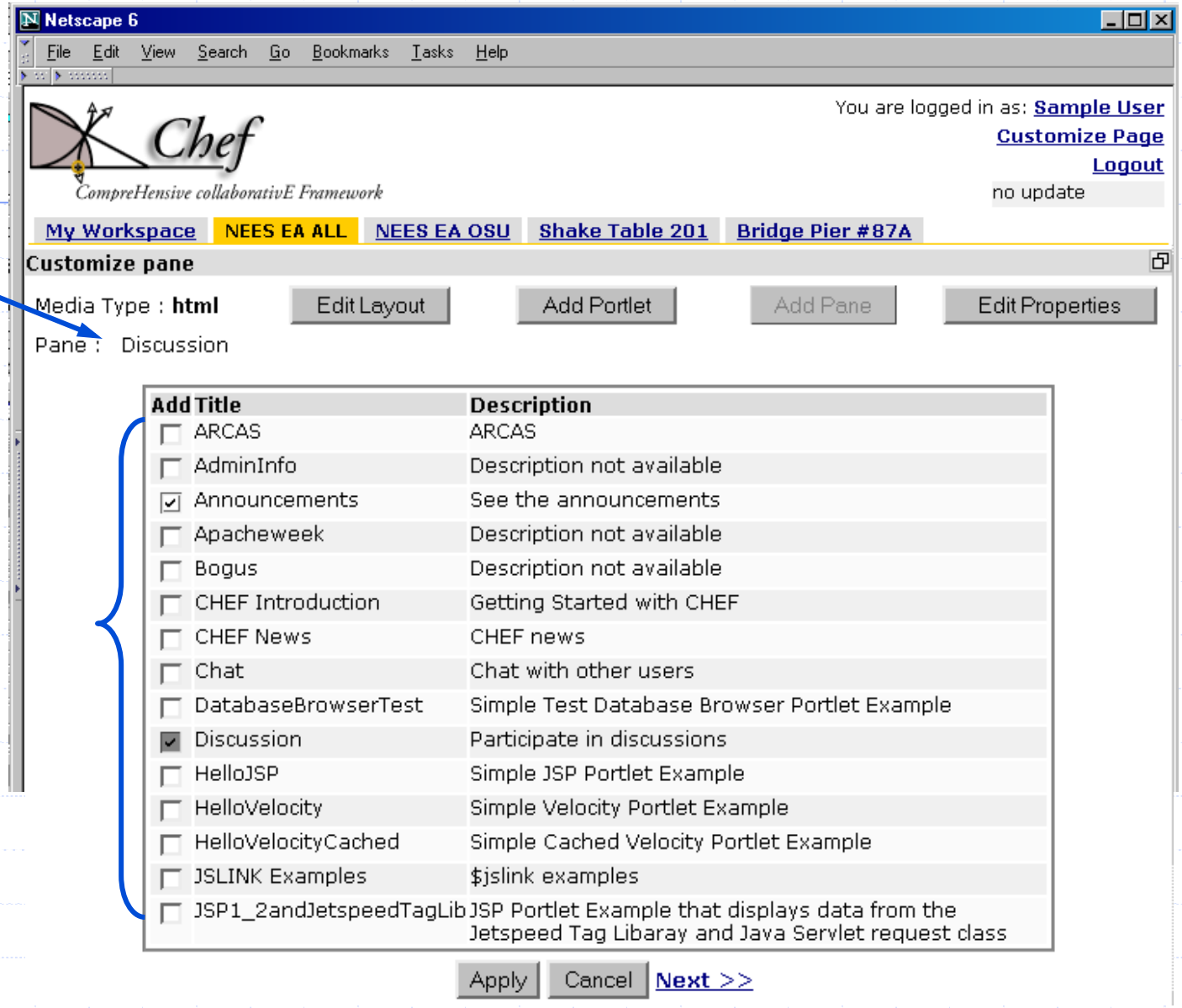
up meeiting a 3:15 today for Med723!

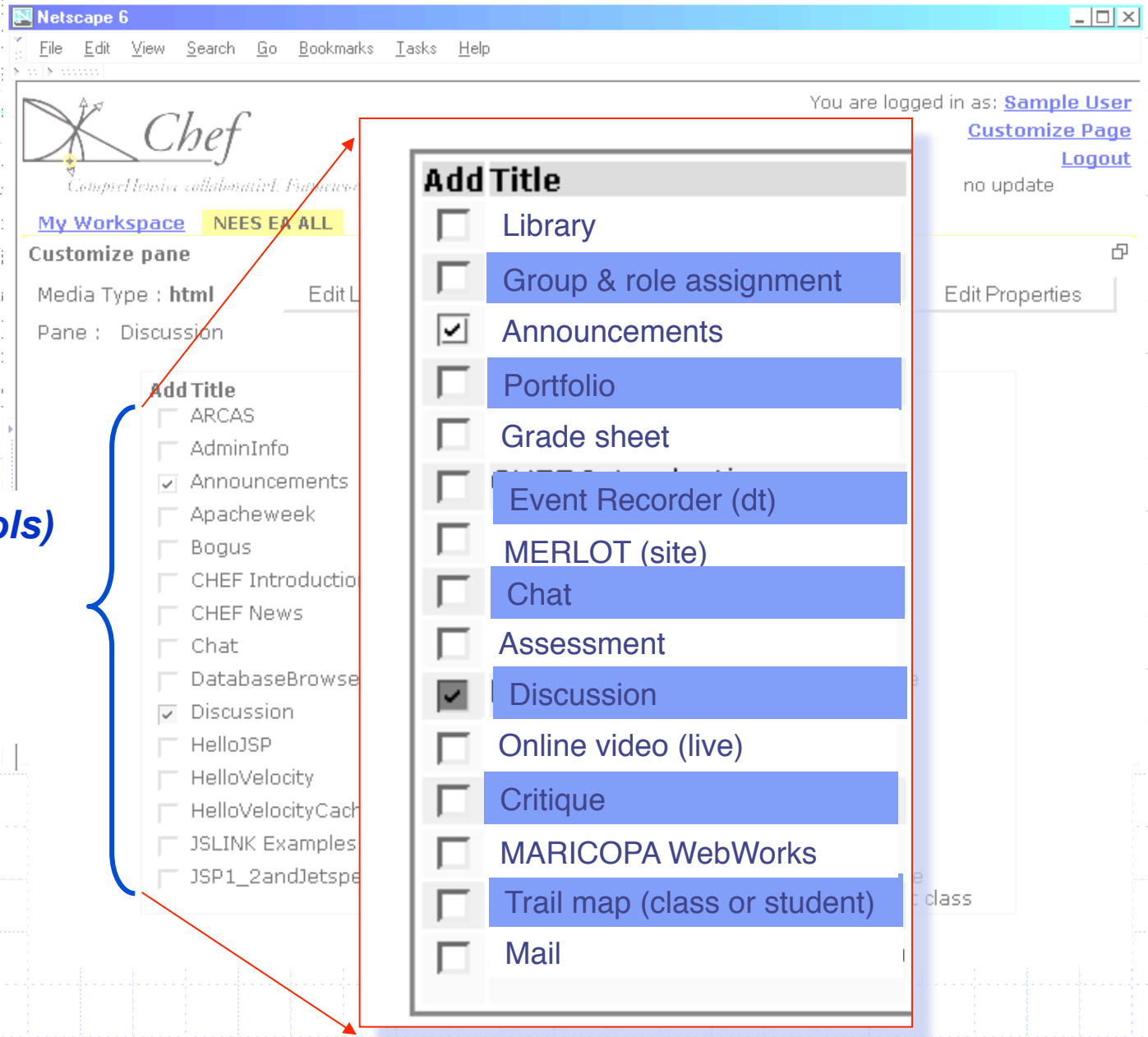
dder function.(Looks good Maria!)

Get present for MOM!

Click here for librarian

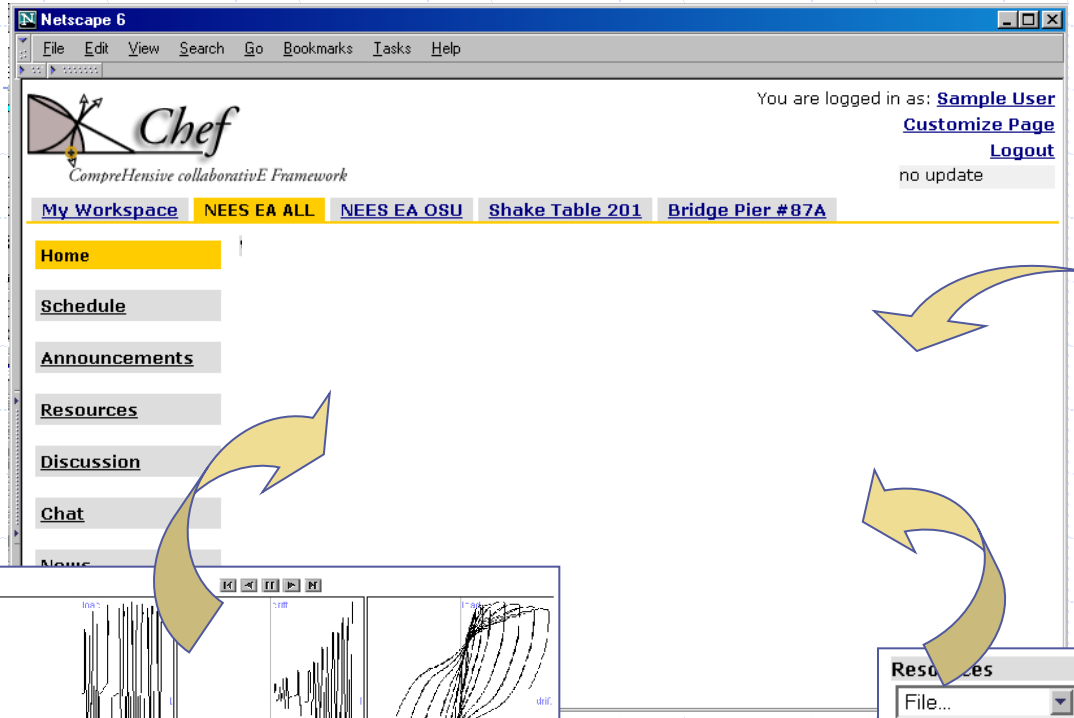
For any 'page' …

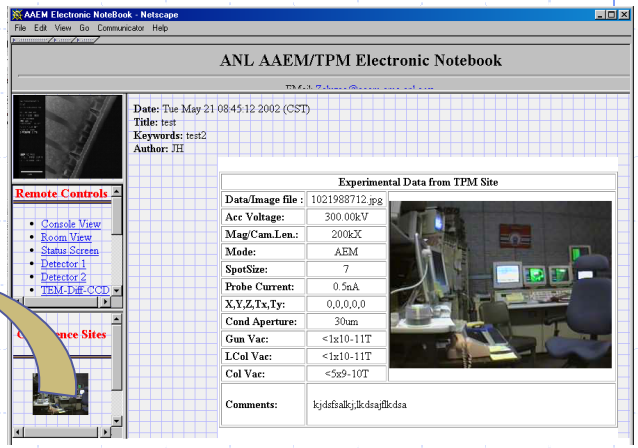

Netscape 6
File Edit View Search Go Bookmarks Tasks Help
Chef
CompreHensive collaborativE Framework
You are logged in as: Sample User
Customize Page
Logout
no update
My Workspace
NEES EA ALL
NEES EA OSU
Shake Table 201
Bridge Pier #87A
Customize pane
Media Type : html
Edit Layout
Add Portlet
Add Pane
Edit Properties
Pane : Discussion
Add Title Description
ARCAS ARCAS
AdminInfo Description not available
Announcements See the announcements
Apacheweek Description not available
Bogus Description not available
CHEF Introduction Getting Started with CHEF
CHEF News CHEF news
Chat Chat with other users
DatabaseBrowserTest Simple Test Database Browser Portlet Example
Discussion Participate in discussions
HelloJSP Simple JSP Portlet Example
HelloVelocity Simple Velocity Portlet Example
HelloVelocityCached Simple Cached Velocity Portlet Example
JSLINK Examples $jslink examples
JSP1_2andJetspeedTagLib JSP Portlet Example that displays data from the Jetspeed Tag Libaray and Java Servlet request class
Apply
Cancel
Next >>

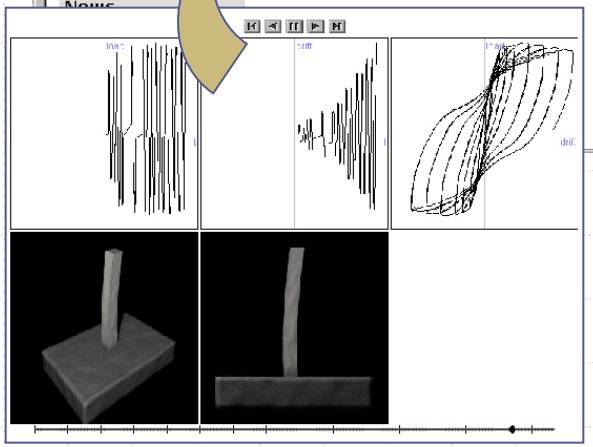


… teamlets (tools) can be added or subtracted (permission controlled)

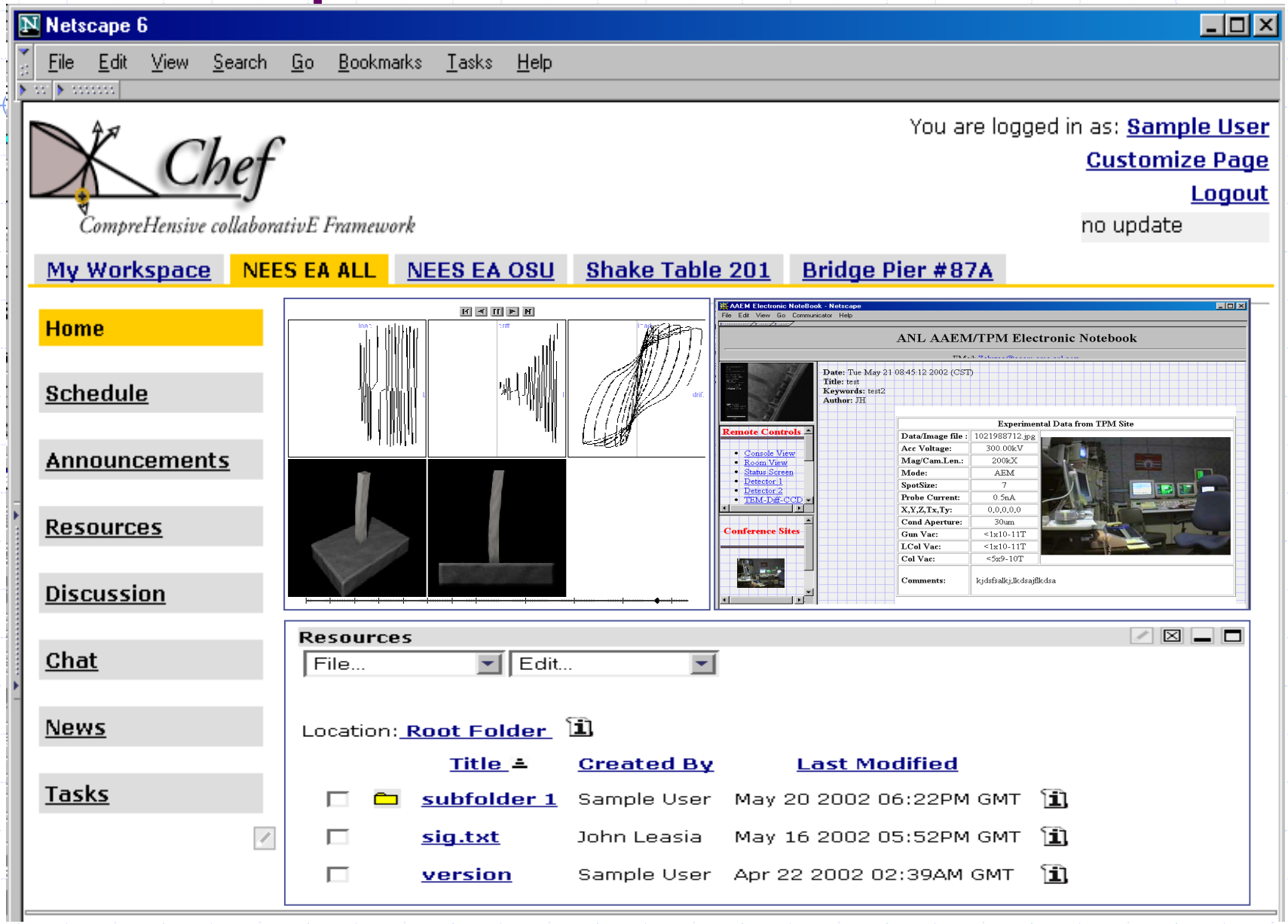
Adding selected teamlets







Interop….


Netscape 6
File Edit View Search Go Bookmarks Tasks Help
Chef
CompreHensive collaborativE Framework
You are logged in as: Sample User
Customize Page
Logout
no update
My Workspace
NEES EA ALL
NEES EA OSU
Shake Table 201
Bridge Pier #87A
Home
Schedule
Announcements
Resources
Discussion
Chat
News
Tasks
AAEM Electronic NoteBook - Netscape
ANL AAEM/TPM Electronic Notebook
Remote Controls
Console View
Room View
Status Screen
Detector 1
Detector 2
TEM-Diff-CCD
Conference Sites
Experimental Data from TPM Site
Resources
File...
Edit...
Location: Root Folder
Title
Created By
Last Modified
subfolder 1
Sample User
May 20 2002 06:22PM GMT
sig.txt
John Leasia
May 16 2002 05:52PM GMT
version
Sample User
Apr 22 2002 02:39AM GMT

But how will it change us?

- Students
- Teachers
- Those who support all!

For students…

- It used to be that they could regurgitate the knowledge from the teacher.
- Then (in addition) they could explore, interact and discover the knowledge of the teacher.
- It will be that (in addition) students create knowledge as colleagues with the teacher.
- Is it any wonder we need to change learning?
- And in changing learning, change and integrate technology?

For teachers…

- **It used to be that the sign of an educated man was that he knew the knowledge of his subject.**
- **Then it was the sign of an educated woman that she added to the this.. where to find the knowledge of her subject.**
- **It will be the sign of an educated teacher that we will add to the above.. We will know the veracity of the knowledge of our subject and how to teach with a variety of differing students.**
- **Is it any wonder we need to change teaching?**
- **And in changing teaching, change and integrate technology?**

For those who support technology in teaching and learning

- **It used to be that we would help faculty use technology for the most exciting.**
- **Now (in addition) technology is used to support classroom management and tough problems.**
- **It will be that technology (in addition to the above) will be used to allow teachers and students to tailor individual learning processes and content and evaluate and change "on the fly."**
- **Is it any wonder we need to change our support for teaching and learning?**
- **And in changing support, change and integrate technology?**

Further…

- Understand that learning may not be smooth.
- Collaboration can be the key
- Multimodal learning like Sesame…
- Beware of MTV…

Conclusion…

We can predict the future… a little…

It's Sesame Street

It will be easier as it's not technology

And it's EXCITING so…

We can wait for the next 'killer app' or we can help event it!

Welcome to the CARAT patch

- This presentation available at the---
- Collaboratory for Advanced Research and Academic Technology at the University of Michigan

- http://carat.umich.edu
- Look for presentations on the left side.