Welcome

LON-CAPA
10th Annual Workshop and Conference
2008
Sponsors

Conference Sponsorship is provided by:

- Simon Fraser University
- Michigan State University
- Dell Computer
- i>clicker
Welcome

- Yesterday: gave short overview of LONCAPA and its functionality
- Today: the “bigger picture:”
  - History of the system
  - Community aspects of the system
  - Vision of the future
Before LON-CAPA
Ed Kashy, MSU
Physics Laboratory, 1979
- Run with Undergraduate TA’s
- Required students to calculate an overall uncertainty based on estimated errors.
- Graded before the end of the lab period
  - Essentially impossible task for TA’s

Three new Pet Commodores 4032 purchased and placed in the lab)
Long Before LON-CAPA

• D. A. Johnson
  • (Computer Whiz at Cyclotron Lab)
  ▪ Programs specific to each experiment:
    • Students enter data, enter corresponding estimated errors (4-8 datum)
    • Units are specified
  ▪ Pet: Enter your value of g? (~1.1 tries)
    • Correct / Incorrect (other responses tried)
    • Pet: Enter the uncertainty (!@?!!)
Long Before LON-CAPA

• (!@?!!) Frustration
  ▪ In part because ‘Incorrect’ required reentry of all the data, also because messy calculations

• Body language, (Gender dependent)
  ▪ Women
  ▪ Men

• Results
  ▪ Neater work
  ▪ High rate of correct calculations
  ▪ Work graded
Before LON-CAPA

• 1991, ‘Physics for All’ new course as MSU switches to semester system ‘92
• Proposed ‘demonstration’ based course
  ▪ Buy computer and Develop system to
    • Check concept understanding
    • Check numerical calculations
• Approved! (8k estimated budget!)
Before LON-CAPA

• With Johnson: What, How, When, ..., Then
  ▪ Much bigger than anticipated
• Don Weinshank call: Comp Assisted Teaching
  ▪ Let’s meet
  ▪ David Thaler, Y. (Isaac) Tsai, (detailed notes...)
  ▪ Printing & Latex, etc
• Initial ‘CAPA’ on-line HW: ~May ‘92
  ▪ Plain ascii text, telnet, NeXT. +++
Before LON-CAPA

• Fall ’92 ‘Physics for All’ ~90 students
  ▪ Initial ‘Compte Rendu’ of CAPA use:
    • Am. J. Phys. 61 (12), 1993, pp. 1124-1130.
  ▪ Student reaction, HW 1
  ▪ MSU not the first: (UICU engineering...)

• Spring ’93: 200 students Chem Class
  ▪ D.J. Morrissey

• Fall ’93: Introductory Physics (Bio Seq)
  ▪ M. Thoennessen

• Early adopters:
  ▪ OhioU, FSU, SFU, McGill, Colorado, CSM, SC,..
Before LON-CAPA

- CAPA Strength: Conceptual Questions

- Succession of developers:
  - Isaac Tsai (to ’95), Guy Albertelli (from ~’95 –)

- Succession of ‘CAPA Coordinators’
  - Sherry Wolf,
  - Nancy Davis,
  - Felicia Berryman

- Key issue = $’s,
  - On-going since 1992, About to be resolved, 2008???
Before LON-CAPA

• Competition: LectureOnline!
  ▪ Gerd Kortemeyer (Demo for Job Interview)

• Support from MSU
  ▪ E-mail to Provost.
    • Dean, Chair, ..... 
      ▪ 1 student!!
        • 100k$, (2y, Develop & Support)
Collaboration with UIUC leads to External funding for CAPA

B. Oakley 4/26/95:
Greetings! We are looking forward to the CIC Symposium this weekend. .... One of the agenda items is inter-institutional cooperation, and I hope that we can propose a project involving our intro physics and chem courses (as well as other courses) and CAPA.

I have just recently starting showing off the CAPA system to some of my colleagues in our Sloan Center. They are VERY excited about it...
Before LON-CAPA

• Support from Foundations:
  § 1995, Invitation at UIUC Illinois, (Burks Oakley, Lanny Arvan)
    • Frank Mayadas, Alfred P. Sloan Foundation
    • 250k, 3 years
  § 1998 Frontiers in Education Meeting, NY
    • Saul Fisher, Andrew W. Mellon Foundation
    • 350k, 3 years
LON-CAPA

- 1999, from MSU Administration

To: Ed and Gerd

“Join or Else”

- Can now do all we could then with CAPA and LOL, with much less work,

- and much much more!
LON-CAPA Consortium
Gerd Kortemeyer, MSU
LON-CAPA NSF Project

- 2000: Joint project gets NSF Grant: “An Investigation of a Model for Online Resource Creation and Sharing in Educational Settings”
- $2.1M over five years plus one year no-cost extension
LON-CAPA NSF Project

- An Investigation of a Model for Online Resource Creation and **Sharing** in Educational Settings

- Community aspects:
  - Resources developed by one author at one institution can be used at all participating institutions
  - “Learning Object”
The LON-CAPA Community

• Did it work?
• 2006 study at Fern-Uni Hagen: Largest coherent single repository of reusable learning objects on the planet
• Compare:
  ▪ Collection of collections, e.g., NSDL
  ▪ Collection of links to distributed learning resources, e.g., Merlot
• In LON-CAPA: All learning objects immediately ready for use in courses
The LON-CAPA Community

- Shared content repository with over 300,000 resources
The LON-CAPA Community

- 120 institutions in total
The LON-CAPA Community

High Schools, Colleges, and Universities

USA: 98
Canada: 6
Germany: 3
Turkey: 1
Israel: 2
South Korea: 1
South Africa: 1
Brazil: 1
Switzerland: 1

... plus grant projects and publishing companies.
The LON-CAPA Community

- Nice, but …
- … the grant is over!

STOP
Gravy
2006
LON-CAPA is free!

• The LON-CAPA platform is covered by the GNU General Public License

• According to GNU’s website:
  
  Free software is a matter of liberty, not price. To understand the concept, you should think of free as in free speech, not as in free beer.

• Free:
  
  ▪ “Free beer”: no licensing fees
  ▪ “Free speech”: source code, Bugzilla, mailing lists, research results, all out in the open
LON-CAPA is free!

• Open-source: you can read, modify, improve, adapt, etc, the original code of the system

• BUT: derivative must be distributed under same license, i.e., GNU General Public License

• Best of course: make improvements available to us. (CVS system)
Free!

Conclusion:
- Free speech
- Free beer
- Free ride?
Free Ride?

- Free beer $\Rightarrow$ hangover
- Free software: you still have to support it
  - Hardware
  - User support
  - Training
  - Maintenance
  - Conferences
  - Continued software development
- Free Ride
Strategy

• Sustainability strategy:
  ▪ Commercial spin-off
  ▪ Additional grants
  ▪ LON-CAPA Consortium
Commercial Spin-Off

• Can you make money with free beer?
• See Redhat Enterprise model
• Provide:
  ▪ Installation and integration services
  ▪ Coding and hosting of problems for publishers
  ▪ Hosting of LON-CAPA for institutions that are unable or unwilling to host their own installation
Commercial Spin-Off

- eduCog, LLC
- Founded 2005
- Hosting LON-CAPA for
  - 3 Universities
  - 34 Schools
  - 6 Publishing Companies
- Makes a profit already if you neglect the time we pour into it …
- Basically operating at cost
New Grant

• EUR 200,000 (approx. $265,000) from the German state of Lower Saxony for the further development of LON-CAPA mathematics functionality and content
• Collaboration between the universities of applied science Braunschweig/Wolfenbüttel, Emden, Hannover, and Wilhelmshaven, with the LON-CAPA group
Consortium

- Sustainability through community
- We want you, not your money!
- Invest your money locally to support the project globally
Consortia

• Commercial systems: traditional vendor supports software
• Open-source: best served by a consortium of universities:
  ▪ Broader commitment
  ▪ Distributed cost
  ▪ No “single point of failure”
• With that in place, open-source can be more stable than commercial systems
• Example: folding of WebCT
Consortium

• What you or your institution can do:
  ▪ Develop new content
  ▪ Apply for grants
  ▪ Provide programmers for the project
  ▪ Provide localization files
  ▪ Write documentation
  ▪ Help other users on mailing lists
  ▪ Actively participate in testing and debugging
  ▪ Do public relations
  ▪ ....
You can do that informally, or you can formalize your commitments.

Formalized commitments: pledging dollar amounts to be invested locally over several years.

It took some time to get this off the ground through the legal departments of the member institutions.
• But: just in time!
• Call from MSU’s General Council regarding “governed by the laws of the State of Michigan”
Academic Consortium

- Founding members: Michigan State University and University of Illinois at Urbana-Champaign
- Associate Member: Simon Fraser University
- Total commitments of $2.15M over the next five years
• Consortium Board:
  - Determines development priorities
  - Decides on cluster membership
  - Decides on policy questions
  - Evaluates membership contributions
  - Represents the network
  - Technical director reports to it
You can be a member, too

• Core Member:
  ▪ $200k/year for 5 years
  ▪ at least one fulltime programmer
  ▪ 4 votes on board
• Sustaining Member:
  ▪ $125k/year for 5 years
  ▪ 2 votes on board
• Associate Member
  ▪ $50k/year for 3 years
  ▪ 1 vote on board
• Again: money does not need to leave your campus!
Conclusion

• In summary: we love our users
• Thank you!