

NEW

Network EducationWare

Winner Best Software System
First International Competition for Non-Commercial
Web-Based Education

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Goals of NEW

1. Maximize accessibility of live classes over the Internet while preserving interaction
 - Usable with 56K modem or better connection
 - Remote student receives same voice and graphic as classroom student
 - Imperceptible delay
 - Optional video
 - needs better network connection
 - Class available in real time or afterward from recording
 - “Space-shift” or “time-shift” attendance

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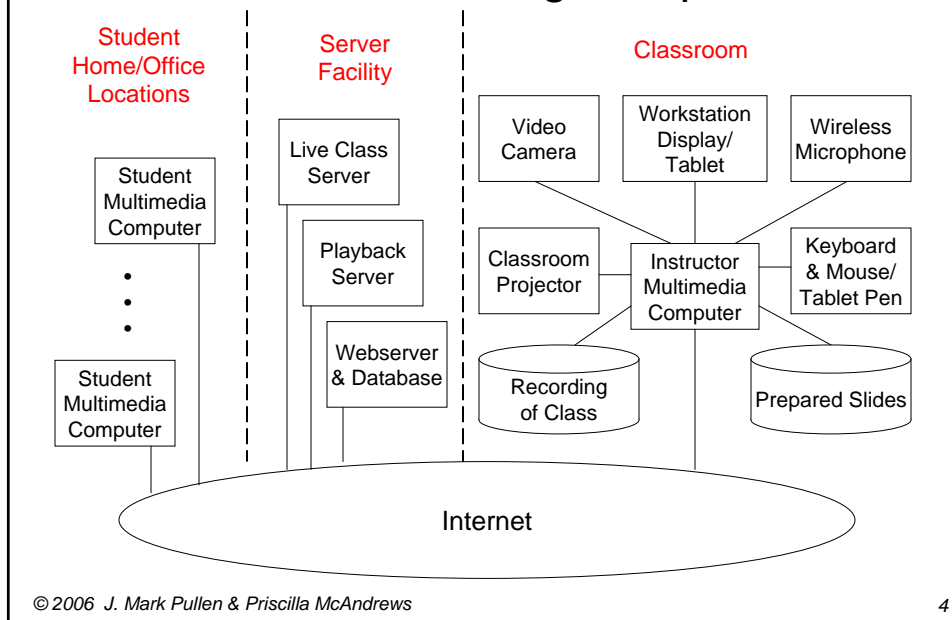
Goals of *NEW*

2. Minimize effort and cost to students, faculty and supporting institution
 - Runs on typical student PC or laptop
 - Inexpensive Linux or Windows server
 - No charge for software
 - Authoring in any graphic tool
 - Use existing slides
 - “Simulteaching” model lets network students attend an existing in-classroom course
 - No need to pay for another delivery

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Simulteaching Setup



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NEW Web Portal

- Simple interface to complex functions
 - Software load and test
 - Live access in multiple forms
 - Playback access in multiple forms
 - Chat rooms
- Focal point for course management
 - For instructors, database management and statistics
 - For administrators, server and webpage management
- Scalability

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The screenshot shows the Network EducationWare NEW Web Portal interface. At the top, it says "Network EducationWare" and "NEW Web Portal". Below that, it says "Director: Dr Mark Pullen". The main content area is light blue and contains the following text:

Welcome to the **NEW** Distance Education System

Instructor: Priscilla McAndrews Course: IT441-3

Select:

- Preparation**
 - Download/install software
 - Test your connection
- Live Class Connection**
 -
- Communication**
 - Chat room
 - Email all IT441 students
 - Email IT441-3 (net) students
- Review**
 - Streaming playback
 - Download playback
 - See class slides
- Uploads/Downloads**
 - Submit Slides**
 -
 - Download Slides**
 -
 - Submit Recordings**
 -
- Course records**
 - View course status
 - View course roster
 - View course statistics
 - Update session/add comment
 - Add student (all sections)
 - Update student (all sections)

On the left side, there is a "MENU" section with the following links:

- Disted **NEW**/FAQs
- Report a problem
- Admin Functions
- Instructor FAQs
- Disted Home
- NEW** Home
- NEW** User Interface
- NetLab Home

At the bottom, it says "Last updated: 09/21/2004 Version: 3.3.1" and "Done" on the left, and "netlab.gsu.edu" and "Adobe" on the right.

NEW Open Source Client Tools

Streaming Internet Course Delivery

- Audio
 - Speak Freely by John Walker (GUI by GMU)
- Whiteboard
 - WBD by Loughborough University UK (extended by GMU)
- Video
 - VIC by U of CA and University College London
- Floor control
 - NEWFC by GMU
- Record and Play controls
 - RC and PC by GMU
- Master Client (controls client configuration)
 - TLMC by GMU

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The screenshot shows a desktop environment with several windows. The main window is titled "NEW Whiteboard" and displays a presentation slide. The slide has a green header "NEW Client Interface" and a diagram titled "Architecture with a". The diagram shows a "VIP Subsystem" at the top, connected to a "Vehicle Subsystem API" below it. The "Vehicle Subsystem API" contains boxes for "Seat", "Card", and "AIM", with "SA/RT" below them. A green arrow points from the text "No need to worry about misuse by callers" to the diagram. The slide also contains a list of bullet points:

- The subsystem decides exactly how it is accessed.
- No need to worry about misuse by callers
- If a façade is used the subsystem can be used in an early integration test
 - We need to write only a driver

The desktop also shows a "New Recorder" window with a play button and a "Network EducationWare" window. At the bottom, there is a "NEW Floor Control" window with buttons for "Release Floor", "Grant Next", and "Floor Rules". A status bar at the bottom right shows "FLOOR CONTROL: OPEN TO ALL".

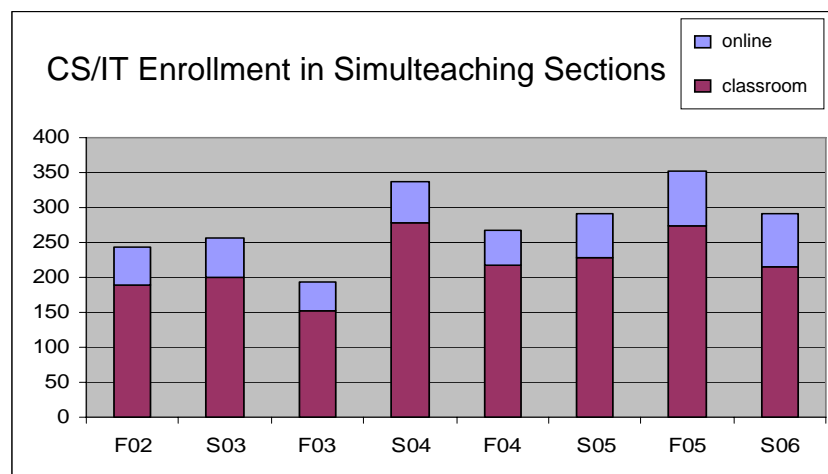
NEW Client Configurations

- All use the same basic client
- Student
 - Basic client
 - Listen-only client
 - Video client
- Instructor
 - Teaching configuration
 - Recording configuration
 - Extra whiteboard for classroom
- Playback

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NEW Usage Statistics



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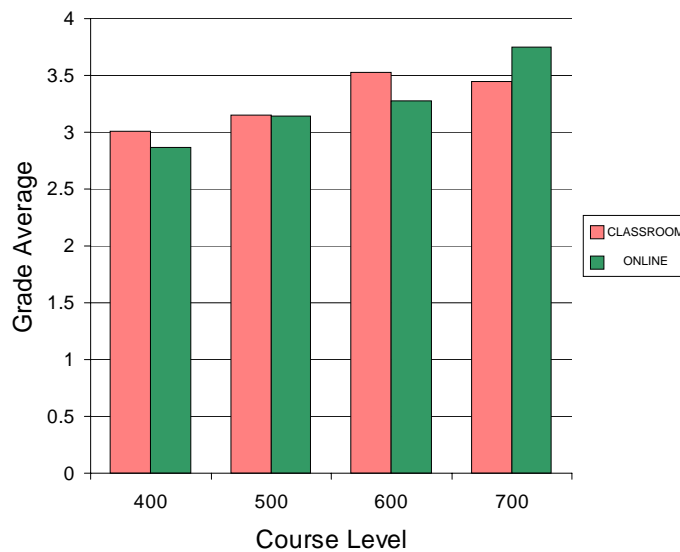
NEW Usage Patterns Spring 2006

	Classroom	Online	All
Total enrolled	216	75	291
NEW users	92	75	167
Average live connections per active live user			14.0
Average playback connections per active playback user			6.6

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Grade Outcomes: "No significant difference"

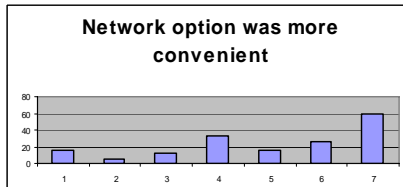
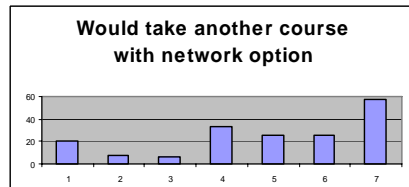
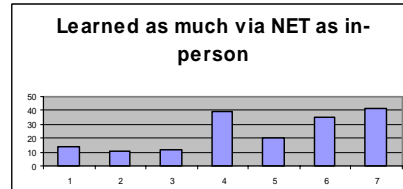
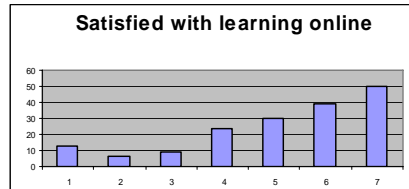


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Student Course-End Survey

Typical online student comments: The online mode allowed me to attend the lecture without commuting to school... I never had a problem connecting to NEW server and joining the class... one simply logs into the system and chooses a live connection from a web page menu ... I find NEW to be a great tele-learning tool.



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Ongoing *NEW* Development

- Present development of NEW is aimed at cross-platform capability
- Linux version is available for beta-testing
- MacOSX beta version planned for Fall 2006
- Functionality also continues to increase
 - OpenOffice spreadsheet integrated with whiteboard Spring 2006
 - Recording Editor planned for Fall 2006

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NEW Publications

<http://netlab.gmu.edu/NEW>

Integrating Synchronous and Asynchronous Internet Distributed Education for Maximum Effectiveness, *Proceedings of the IFIP World Computer Congress TC3 – Education*, Santiago, Chile, August 2006 (Pullen)

Scaling Up a Distance Education Program in Computer Science, *ACM Special Interest Group on Computer Science Education (SIGCSE) Bulletin*, to appear (Pullen)

A Web Portal for Open-Source Synchronous Distance Education, *Advanced Technology for Learning Vol 2 No 1*, IASTED (Pullen & McAndrews)

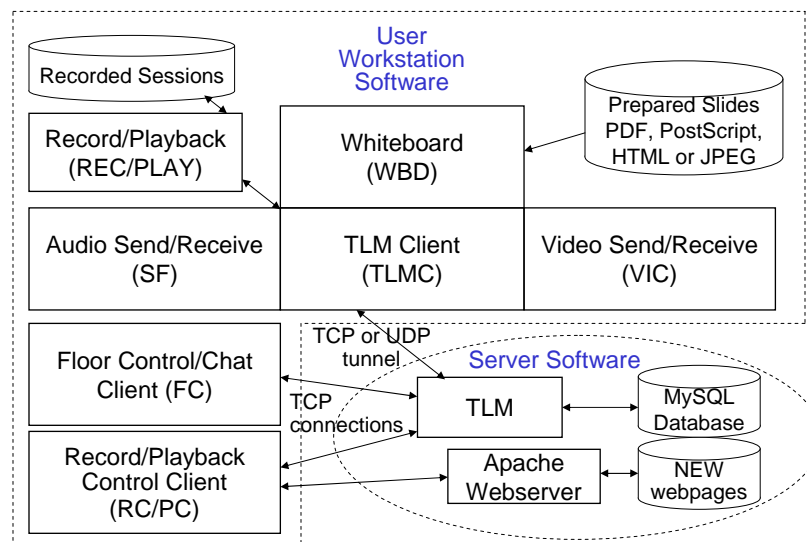
An Open-Source Web-Based System for Synchronous Distance Education, to appear in *IEEE Transactions on Education Vol.48 No. 4* (Snow, Pullen & McAndrews)

Low-Cost Internet Synchronous Distance Education Using Open-Source Software, *ASEE Computers in Education Journal Vol 25 No 5*, to appear (Pullen & McAndrews)

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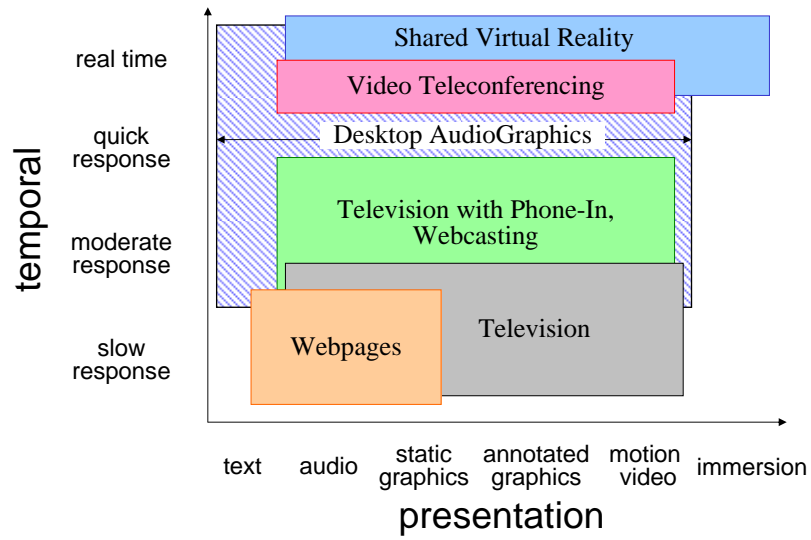
NEW Software Components



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Temporality of Student Interaction



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