The LearningOnline Network with CAPA

What is LON-CAPA?

LON-CAPA is …

LON-CAPA is a full-featured, web-based course management system similar to commercial systems, see edutools.info for comparisons.
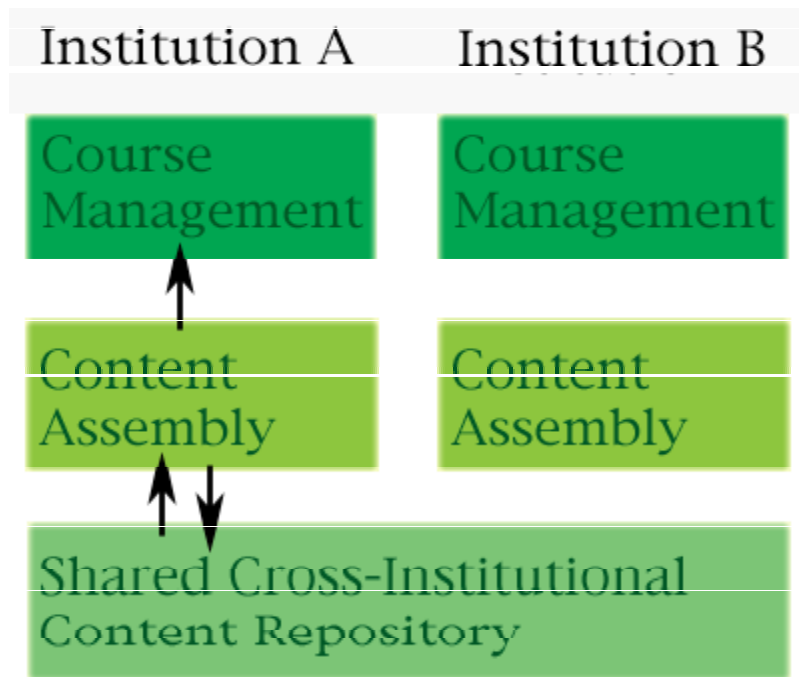
In addition, it has the following features:

- Content sharing and content reusability, including
    - Network of shared resources from 27 participating institutions
    - Shared repository of 61,000 resources including assessment questions and multimedia content
    - Easy semester transition
    - A large set of resources in physics/astronomy, chemistry, biology, mathematics/statistics, and geology
    - Ability to add new resources to the existing content pool
- Creation and grading of randomized homework, quizzes or exams, including the ability to
    - create sophisticated question types such as: click-on image, random label, random plot, or formula response
    - reduce blind copying of answers by giving a different version of the problems to each student
    - print randomized bubblesheet exams and quizzes
    - configure the reporting of grades and feedback with a wide variety of options
    - contextualize threaded homework discussions
- A development group based that sustains a twice-yearly LON-CAPA release cycle to insure rapid incorporation of instructor-requested enhancements.
- An open-source freeware system

Architecture

LON-CAPA is a distributed networked system.

The three layers of the LON-CAPA architecture:

1. At the bottom is a shared learning content repository, which provides content replication, versioning, catalog information, etc
2. At the middle layer are tools to assemble content from this pool. Any assembly again becomes part of the repository
3. At the top layer is a full-featured course management and assessment layer to readily deploy this content in your courses.

History

In the fall of 1992, CAPA (a Computer-Assisted Personalized Approach) was piloted in a small physics class of 92 students. CAPA provides students with personalized problem sets, quizzes, and exams. Students are given instant feedback and hints via the Internet and may correct errors without penalty until the assignment due date. The system records the students' participation and performance and the records are available online to both the instructor and the individual student. CAPA is a teaching tool, not a curriculum, and as such does

not dictate course design, content or goals. Instead, it enables faculty to augment their courses with individualized relevant exercises.

The LectureOnline project was started to serve physics course material over the web in the fall of 1997 with 770 students. With only the web-browser as interface, LectureOnline enables instructors to seamlessly put together a presentation of material gleaned from all over the Internet, and to create different types of individualized online homework. Grading, communication, groupwork and enrollment are also handled by the system.

In 1999, the CAPA and LectureOnline groups joined efforts in the creation of the LearningOnline Network with CAPA (LON-CAPA), which provides a superset of the CAPA and LectureOnline functionalities. LON-CAPA was first beta-tested with two courses at MSU in spring 2001.

Today (Spring 2004), LON-CAPA is serving over 13,000 course enrollments per semester at MSU alone, and well over 23,000 course enrollments system-wide, ranging from middle school to graduate level courses. Disciplines include astronomy, biology, business, chemistry, civil engineering, computer science, family and child ecology, geology, human food and nutrition, human medicine, mathematics, medical technology, physics, and psychology.