

E-Learning Application Feature Sets

Option-I

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Overall design

- Promotes a social constructionist pedagogy (collaboration, activities, critical reflection, etc)
- Suitable for 100% online classes as well as supplementing face-to-face learning
- Simple, lightweight, efficient, compatible, low-tech browser interface
- Requires only one database (and can share it).
- Full database abstraction supports all major brands of database (except for initial table definition)
- Course listing shows descriptions for every course on the server, including accessibility to guests.
- Courses can be categorized and searched - one LMS/LCMS site can support thousands of courses
- Emphasis on strong security throughout. Forms are all checked, data validated, cookies encrypted etc
- Most text entry areas (resources, forum postings etc) can be edited using an embedded WYSIWYG HTML editor

Site management

- Site is managed by an admin user, defined during setup
- Plug-in "themes" allow the administrator to customize the site colors, fonts, layout etc to suit local needs
- Plug-in activity modules can be added to existing LMS/LCMS applications
- Plug-in language packs allow full localization to any language. These can be edited using a built-in web-based editor. Can support up to 70 languages.

User management

Overview

- Goals are to reduce admin involvement to a minimum, while retaining high security
- Supports a range of authentication mechanisms through plug-in authentication modules, allowing easy integration with existing systems.
- Standard email method: students can create their own login accounts. Email addresses are verified by confirmation.
- LDAP method: account logins can be checked against an LDAP server. Admin can specify which fields to use.
- IMAP, POP3, and NNTP: account logins are checked against a mail or news server. SSL, certificates and TLS are supported.
- Students are encouraged to build an online profile including photos, description. Email addresses can be protected from display if required.
- Every user can specify their own time zone, and every date in E-Learning Application is translated to that time zone (e.g. posting dates, assignment due dates etc)
- Every user can choose the language used for the E-Learning Application interface (English, French, German, Spanish, Portuguese etc)

Enrolment

- Teachers can add an "enrolment key" to their courses to keep out non-students. They can give out this key face-to-face or via personal email etc
- Teachers can enroll students manually if desired
- Teachers can unenroll students manually if desired, otherwise they are automatically unenrolled after a certain period of inactivity (set by the admin)
- External database: any database containing at least two fields can be used as an external authentication source.
- Each person requires only one account for the whole server - each account can have different access
- Meta courses can group related courses so participants can interact with each other

Roles

- Roles for specific participants can be defined for each course
- An admin account controls the creation of courses and creates teachers by assigning users to courses
- Course creators can create courses, teach in them, and assign others to teacher roles.
- Teachers are a role in a specific course.
- Non-editing teacher roles are available for adjuncts, and part-time tutors.

Course management

Overview

- A full teacher has full control over all settings for a course, including restricting other teachers
- Choice of course formats such as by week, by topic or a discussion-focused social format
- Course Themes. A course can have its own theme of colors and layout.
- Flexible array of course activities - Forums, Quizzes, Glossaries, Resources, Choices, Surveys, Assignments, Chats, Workshops
- Groups - teacher(s) and students can be placed in one or more groups
- Recent changes to the course since the last login can be displayed on the course home page - helps give sense of community
- Most text entry areas (resources, forum postings etc) can be edited using an embedded WYSIWYG HTML editor
- All grades for Forums, Quizzes and Assignments can be viewed on one page (and downloaded as a spreadsheet file)
- Full user logging and tracking - activity reports for each student are available with graphs and details about each module (last access, number of times read) as well as a detailed "story" of each student's involvement including postings etc on one page.

- Mail integration - copies of forum posts, teacher feedback etc can be mailed in HTML or plain text.
- Custom scales - teachers can define their own scales to be used for grading forums and assignments
- Courses can be packaged as a single zip file using the Backup function. These can be restored on any LMS/ LCMS server.

Assignment Module

- Assignments can be specified with a due date and a maximum grade.
- Students can upload their assignments (any file format) to the server - they are date-stamped.
- Late assignments are allowed, but the amount of lateness is shown clearly to the teacher
- For each particular assignment, the whole class can be assessed (grade and comment) on one page in one form.
- Teacher feedback is appended to the assignment page for each student, and notification is mailed out.
- The teacher can choose to allow resubmission of assignments after grading (for regarding)

Chat Module

- Allows smooth, synchronous text interaction
- Includes profile pictures in the chat window
- Supports URLs, similes, embedded HTML, images etc
- All sessions are logged for later viewing, and these can also be made available to students

Choice Module

- Like a poll. Can either be used to vote on something, or to get feedback from every student (e.g. research consent)
- Teacher sees intuitive table view of who chose what
- Students can optionally be allowed to see an up-to-date graph of results

Forum Module

- Different types of forums are available, such as teacher-only, course news, open-to-all, and one-thread-per-user.
- All postings have the author's photo attached.
- Discussions can be viewed nested, flat or threaded, oldest or newest first.
- Individual forums can be subscribed to by each person so that copies are forwarded via email, or the teacher can force subscription for all
- The teacher can choose not to allow replies (e.g. for an announcements-only forum)
- Discussion threads can be easily moved between forums by the teacher
- Attached images are shown inline
- If forum ratings are being used, these can be restricted to a range of dates

Glossary Module

Lesson Module

- A lesson is a series of pages which can be presented in a linear fashion, like a slide show, or in a non-linear, branching manner, or a combination of the two.
- Pages can allow students choices through teacher directed questions or branches
- Offers different scoring and grading potentials
- Navigation through the lesson can be straight forward or complex, logical or random.
- Lessons can build upon each other through conditional dependencies upon one another
- Question pages include multiple choices, T/F, numeric, short answer and essay.

- Pages can be imported either as questions in a variety of formats or from PowerPoint
- Student attempts, time limits, minimum score and retakes can be set.
- Page content is HTML compatible, with a full set of edit tools for the teacher
- Students may see progress bars, running score, reinforcement to student questions
- Password protected

Quiz Module

- Teachers can define a database of questions for re-use in different quizzes
- Questions can be stored in categories for easy access, and these categories can be "published" to make them accessible from any course on the site.
- Quizzes are automatically graded, and can be re-graded if questions are modified
- Quizzes can have a limited time window outside of which they are not available
- At the teacher's option, quizzes can be attempted multiple times, and can show feedback and/or correct answers
- Quiz questions and quiz answers can be shuffled (randomized) to reduce cheating
- Questions allow HTML and images
- Questions can be imported from external text files
- Quizzes can be attempted multiple times, if desired
- Attempts can be cumulative, if desired, and finished over several sessions
- Multiple-choice questions supporting single or multiple answers
- Short Answer questions (words or phrases)
- True-False questions
- Matching questions
- Random questions
- Numerical questions (with allowable ranges)
- Embedded-answer questions (cloze style) with answers within passages of text
- Embedded descriptive text and graphics

Resource Module

- Supports display of any electronic content, Word, PowerPoint, Flash, Video, Sounds etc. that are stored locally, or remotely
- Files can be uploaded and managed (zipped, unzipped, renamed, moved, etc..) on the server
- Folders can be created and managed on the server and linked to
- Internal web pages (html formatted) can be created with WYSIWYG editor and linked to
- Internal text pages (no formatting) can be created and linked to
- External content on the web can be linked to or seamlessly included within the course interface.
- External web applications can be linked to with data passed to them
- Linked MP3 audio files will display with elegant flash player

Survey Module

- Built-in surveys (COLLES, ATTLS) have been proven as instruments for analyzing online classes
- Online survey reports always available, including many graphs. Data is downloadable as an Excel spreadsheet or CSV text file.
- Survey interface prevents partly-finished surveys.
- Feedback is provided to the student of their results compared to the class averages

Wiki Module

Workshop Module

- Allows peer assessment of documents, and the teacher can manage and grade the assessment.

- Supports a wide range of possible grading scales
- Teacher can provide sample documents for students to practice grading
- Very flexible with many options.

Option - II

Communication Tools	
Discussion Forum	<p>Students can enable or disable posts to be sent to their email.</p> <p>Students can receive posts by email as daily digests of subject lines or whole posts.</p> <p>Students can subscribe to forum RSS feeds.</p> <p>A spell-checker is available for student and instructor responses.</p>
Discussion Management	Instructors can set up moderated discussions where all posts are screened.
File Exchange	<p>Students can submit assignments using drop boxes.</p> <p>Students can share the contents of their personal folders with other students.</p> <p>Administrators can define disk space limitations for each user.</p>
Internal Email	<p>Students can use the built-in email functionality to email individuals or groups.</p> <p>Instructors can email the entire class at once at a single address or alias.</p> <p>Students can elect to forward their mail to an external address.</p>
Online Journal/Notes	
Real-time Chat	<p>The chat tool supports unlimited simultaneous group discussions</p> <p>The system creates archive logs for all chat rooms.</p>
Whiteboard	
Productivity Tools	
Bookmarks	This feature is available in E-learning Application with minimal effort.
Calendar/Progress Review	<p>Instructors and students can post events in the online course calendar.</p> <p>Instructors can post announcements to a course announcement page.</p> <p>Students have a personal home page that lists all courses in which the student is enrolled, new email and all course and system-wide events from their personal calendar.</p> <p>Students can subscribe to RSS feeds to be notified of changes to materials.</p>
Searching Within Course	Students can search all course content.

	Students can search all discussion threads.
Work Offline/Synchronize	
Orientation/Help	
Student Involvement Tools	
Group work	<p>Instructors can assign students to groups. Students can self-select groups. Each group can have its own discussion forum. Each group can have its own chat or whiteboard.</p> <p>Groups may be private or instructors can monitor groups.</p>
Community Networking	<p>Students can create online clubs, interest, and study groups at the system level. Students from different courses can interact in system-wide chat rooms or discussion forums.</p>
Student Portfolios	The portfolio is site wide. A student creates a personal page that they can use for any materials, not a specific course. See dotfolio.org
Administration Tools	
Authentication	<p>Administrators can allow guest access to all courses.</p> <p>The system can authenticate against an external LDAP server.</p> <p>Administrators can set up fail-through authentication against a secondary source (e.g. the system's own database) in the event that the primary source (e.g. LDAP server) fails.</p> <p>The system can support multiple organizational units and virtual hosts within a server configuration.</p>
Course Authorization	<p>The system supports restricting access based on roles and roles can also be customized by the service provider.</p> <p>Administrators can create an unlimited number of custom organizational units and roles with specific access privileges to course content and tools.</p> <p>Administrators can distribute the permissions and roles across multiple institutions or departments hosted in the server environment.</p> <p>Instructors or students may be assigned different roles in different courses.</p>
Registration Integration	<p>Instructors can add students to their courses manually or allow students to self-register.</p> <p>Administrators can batch add students to the system using a delimited text file.</p> <p>Administrators can transfer student information bidirectionally between the system and an SIS using delimited text files.</p>

	Administrators can transfer student information bidirectionally between the system and an SIS using IMS Enterprise Specification v1.1 XML files via web services.
Hosted Services	Hosting and support services from Commercial Affiliates.
Course Delivery Tools	
Test Types	<p>Multiple choice</p> <p>Multiple answer</p> <p>Short answer</p> <p>Survey questions</p> <p>Essay</p> <p>Questions can contain other media elements (images, videos, audio)</p> <p>Custom question types can be defined.</p>
Automated Testing Management	<p>The system can randomize the questions and answers.</p> <p>Instructors can create self-assessments.</p> <p>Instructors can set a time limit on a test.</p> <p>Instructors can permit multiple attempts.</p> <p>The students are allowed to review past attempts of a quiz.</p> <p>Instructors can specify whether correct results are shown as feedback</p>
Automated Testing Support	<p>Instructors can create system wide test banks.</p> <p>Questions can be imported from external test banks that support QTI.</p>
Online Marking Tools	
Online Grade book	<p>Instructors can add grades for offline assignments.</p> <p>Instructors can export the scores in the grade book to an external spreadsheet.</p> <p>Instructors can create a course grading scale that can employ either percents, letter grades, or pass/fail metrics.</p>
Course Management	Instructors can personalize access to specific course materials based on group membership.
Student Tracking	Usage statistics can be aggregated across courses or across the institution.
Content Development Tools	
Accessibility Compliance	
Content Sharing/Reuse	<p>Instructors can share content with other instructors and students through a central learning objects repository.</p> <p>Tools are available to enable version tracking and linking to specific versions as well as the creation and management of workflows for collaborative content creation and review.</p>

Course Templates	<p>Course content may be uploaded through WebDAV.</p> <p>The system allows administrators to use an existing course or a pre-defined template as a basis for a new course.</p>
Customized Look and Feel	<p>The system provides default course look and feel templates.</p> <p>Instructors can change the order and name of menu items for a course.</p> <p>The system can support multiple institutions, departments, schools or other organizational units on a single installation where each unit can apply its own look and feel templates as well as institutional images, headers and footers.</p>
Instructional Design Tools	
Instructional Standards Compliance	<p>IMS Content Packaging 1.1.3</p> <p>IMS Content Packaging 1.1.4</p> <p>IMS QTI 1.2.1</p> <p>IMS Enterprise 1.1</p> <p>SCORM 1.2</p>

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Option-III

E-Learning administration

- E-learning lessons can be organized in a tree
- You can insert different functions inside the learning management system page
- E-learning user can be stored and organized in tree
- Users can be organized in group
- Users can receive notification via SMS
- Sub administrators
- You can add infinite additional cataloguing fields
- LMS languages can be customized via web interface
- E-Learning user subscription can be free or moderated
- E-learning course subscription can be free or moderated
- Course curricula
- Course catalog
- Report by user, groups or tree

Cms administration

- User cataloguing by tree
- User groups
- Additional cataloguing fields
- CMS and E-Mail notification policy
- Sub administrators
- Optimization for search engine

- Language customization and import-export via web interface
- Subscription to groups or system can be free or moderate

E-Learning functions

- LMS levels are: Super administrator, tutor, mentor, student, supervisor, guest
- Double e-learning access with accessibility features enabled disabled
- Course presentation page
- Learning objects are stored and organized in a tree
- Chat, Accessible chat version
- Videoconference
- Forum
- Test, random answer, time answers, 7 kind of answers supported
 - Single answer
 - Multiple answer
 - Choose right/wrong word
 - Association
 - Open answer (Text)
 - Upload file
 - Fill the blank space
- Poll, faq, help upload files
- Collaborative e-learning through project manager
- Report by learning object or user
- Test result table
- Pre requisites on learning object
- Messages
- Teacher advice
- e-learning classroom can be divided in groups

Cms functions

- Pages are organized in a tree view
- A single page can contain different functions
- Topics
- News archive
- Images and Movie archive
- Documents archive
- Links archive
- Content archive
- Forum
- Banner
- Polls
- Contact form building
- Chat
- Videoconference
- Image Gallery
- Statistics
- Newsletter (also useful for large number of sending)

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Option-IV

Personalization

On its "Personal Desktop", an individual working place for each user, application offers several facilities for individualization of the learning environment:

- Personal desktop: Display of subscribed courses, learning modules, forums, groups etc.
- Personal profile: Password administration, multi-language support (20 languages)
- Bookmarks
- Personal and public notes
- Calendar
- Individual settings for receiving internal e-Mail
- Individual learning progress reports

Course management functions

Courses offer facilities to organize the procedure of seminars etc.:

- Automated sign-up processes
- Time-paced and test-sensitive distribution of learning material
- Learning progress reports for course attendants
- Live event support
- Individual learning plan schedules
- Recommendation of activities according to learning objectives

Cooperation and Syndication

These are several functionalities supposed to facilitate cooperation and getting to know each other:

- Group system
 - Group calendar
 - Automatically created member galleries
- Display of synchronously working users (Awareness)
- vCard incl. export
- Version management for cooperative document creation

Communication

Different communication tools are offered to provide contact:

- Integrated e-Mail system (attachments, sending mail to external addresses)
- Collective e-Mails to Groups and Course audiences
- Chat
- Forums (incl. moderating functions, attachments, notification of new/answered articles, export, posting statistics)
- Options for adding virtual classroom

Test and Survey Tool

By means of *Tests*, students can get a self-assessment of their knowledge, be assessed or prepared for assessment:

- Different types of questions (single/multiple choice, cloze exercises incl. case and error sensitivity, numeric and text subset questions, matching tests with drag & drop-support, hotspots, essay questions incl. keyword-based automatic rating)
- Re-use of questions from pools
- QTI-interface for importing externally designed questions
- Options setting the modes for answering questions e.g. to set fixed timeframe, maximum number of approaches etc.
- Arbitrarily designable mark schemes, incl. ECTS options
- Randomize function, also for continuously varying Tests
- Differentiated result analysis (incl. export)
- Online exam, incl. IP control

Features an integrated survey tool that also offers different reusable and importable question types and a differentiated result analysis.

- adaptive questionnaires
- anonymous public Surveys

Authoring

Application features an integrated authoring tool by which learning materials consisting of text and multimedia elements can be composed to WBT:

- XML-based, optional on JavaScript
- Import from Open Office
- Export (XML, HTML, SCORM 1.2)
- Standard formats ("style sheets") incl. internal and external portability
- LaTeX formula editor support
- Automatic checking of external links
- Print and download function for learners
- Metadata support on every level of material according to the LOM standard

Moreover, there are import interfaces (SCORM 1.2, AICC, and HTML-based learning Modules).

Features for system administration

- Flexible role-based permission management system (RBAC)
 - Global/local roles
 - Permission inheritance incl. possible discontinuation and role protection
 - Role templates
 - Automatically generated roles in forum, chat group and course
- Options of authentication: CAS, LDAP, SOAP, Radius, and Shibboleth
- Automatic generation and mailing of passwords
- Automatic role application according to email domain
- Easy customization of graphic design via templates/skins
- Multi-client capability
- Papal payment